

ADATIVE STADIA:

Laying the ground work for future redevelopment

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Thank you to all of those that have helped me through this year. The results of this book would not be possible without the help of all that have supported me along the way.

ABSTRACT

The goal of this thesis is to explore the possible options of what to do with sport venues, stadiums and arenas, after the teams decides to move. For a while professional sport venues were being used for long periods of times, 50+ years. However, nowadays we are lucky if the venue lasts 30 years at most. This is where the problem is located, what do we do with a project like this after it is vacated? Can we plan for what the venue could be used for after?

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01

Defining the Parameters

We live in a time when something is “broken” or isn’t working how one would like it to work, we look for a new and better version to replace it with. There are somethings in which if they are broken we fix it, but not nearly as much as replacing it. This holds true even in the business world, more specifically in the sports industry. Like any other business the business of sports has to spend money to make money. Each of the teams are essentially their own business, hence why many of the teams are referred to as franchises. The term “franchise” is referring to everything related to the name.

As a franchise, it is important to offer the paying public the best experience, the best atmosphere, the best seats, the best food, ease of accessibility, and let’s not forget technology has to be the best. Yet, all of this brings the issue of the facility going out of date and having to be updated which then most franchise try to get new facilities instead. This is a problem and understanding that there is this problem today is the first thing that needs to be addressed. These stadiums and arenas used to stand and be used for 50+ years and created memories that could be past along from generation to generation, yet today they are lasting about half that length, 20-30 years and are costing much more money. Yet, what happens after the franchise decide to leave the stadium or relocate to a new city? What happens to the stadium or arena then?

Many times the stadiums demolished. If the city is lucky something new is constructed to replace the structure. Unfortunately, that isn’t always the outcome. In some cases, the building can sit through for long periods of time without anything happening to it for years, such was the case for the Pontiac Silverdome in Pontiac, Michigan.

“Demolition of these stadium are very costly. Extensive planning and preparation must go into such a demolition. Planning from the people, to the operations going on around it, to every little detail about bringing it down. It’s unique because of the moving components and things like that.” Said Chris Noimand, project manager who was par of the team who demolished the Pontiac Silverdome.

Demolishing a stadium may be the only thing that can be done in some circumstances, but is it the only option for existing stadiums? These venues have been built as part of a business and have cost taxpayers millions of dollars and they have had no say in the matter. Yet, to just demolish the building is short sighted and not being thoroughly thought through, maybe they could be re-used for some purpose that could ultimately benefit the city. However an even better idea would to lay the ground work and infrastructure for the venue to be re-purposed after. If a ground work for the infrastructure would be laid done at the beginning of the new construction it would make an easier transition for later and provide a potential benefit for the city and community that it belongs to.

There are several cities around the United States that have experimented with the idea of re-purposing professional stadiums. Some of the stadiums that have been re-purposed were executed better than others and have helped stabilize the surrounding communities. Yet, what do you reprogram the stadium for to achieve such benefits to the community?

There have been many different programs used to re-purpose stadiums and arenas for from markets and commercial spaces to residential housing when needed. There are many different possibilities because of the sheer size of these structures. Who is to say that only one program takes up the structure? Why not make it mixed use?

Since there are many different programs that can go into a structure

of this size, it will be easier and more beneficial to break up the program into multiple uses. In addition, one can essentially break up the structure to better suit the needs that can arise. Addressing the community's needs is the best starting point when deciding on how to transform the current stadium. Studies and research on the area will be one of the most important task to preform at the beginning to look at all the potential options to be done with the venue.

Each venue is unique, meaning that a single solution will not be able to be used in every circumstance and scenario. However, that doesn't mean that a set of guidelines cannot be created to follow in order to lay the ground work for after the stadium is vacated. In fact, this should be the way in which designs and owners go about constructing a new stadium for the future.

Now it is hard to predict what a city may need 20-30 years down the road, but that doesn't mean that the issue shouldn't be addressed until it is staring you in the face. In addition to the designers and owners, the city planning department would be a great resource to get involved in the development of a new stadium.

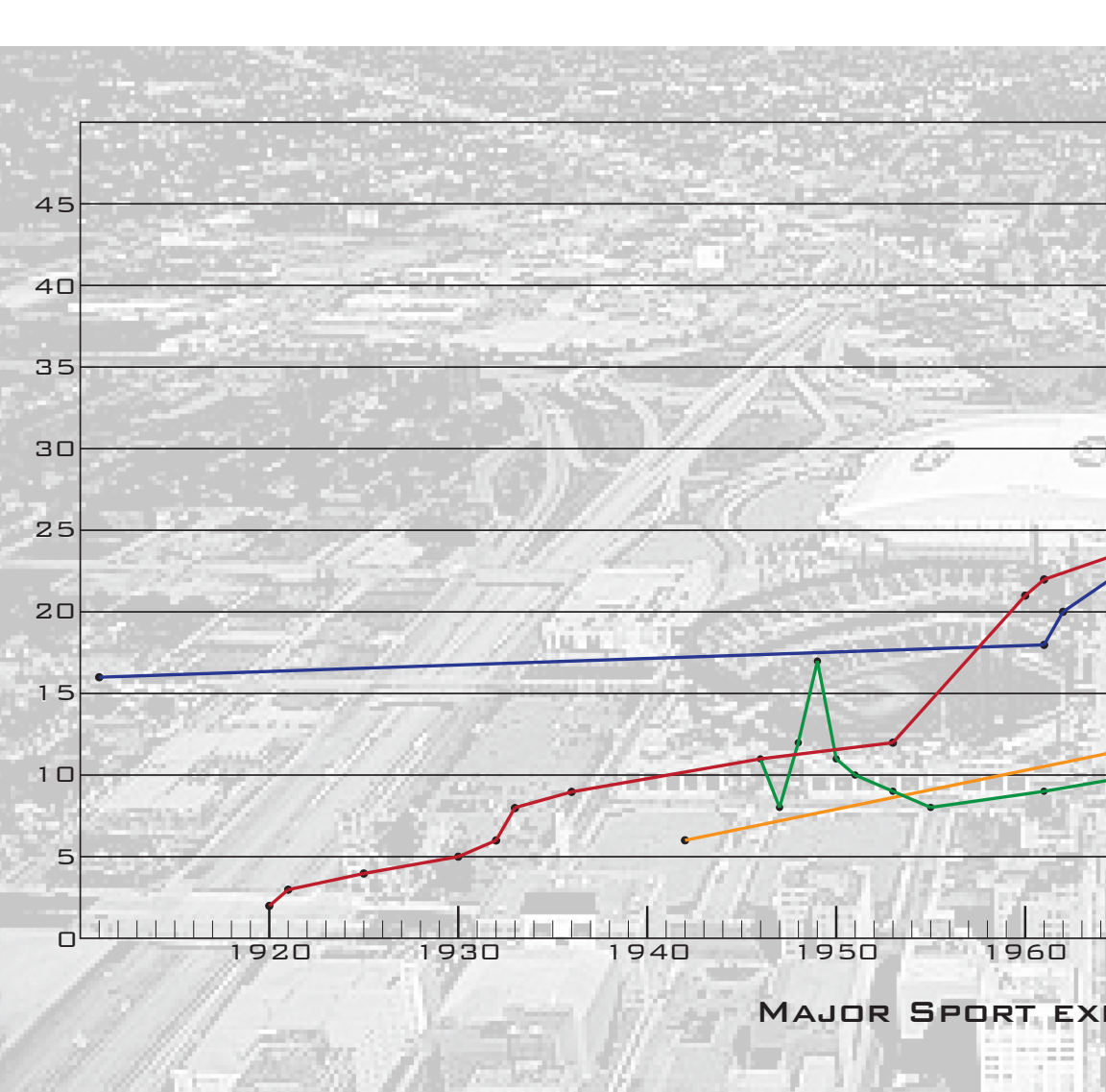
02

The Growth of an Industry

The professional sports leagues that we know today are different from the leagues of 30 years ago. The leagues have evolved since when they were first started, expanding, adding conferences and divisions. The expansions and relocation of teams are some of the most significant events over the past several decades in sports.

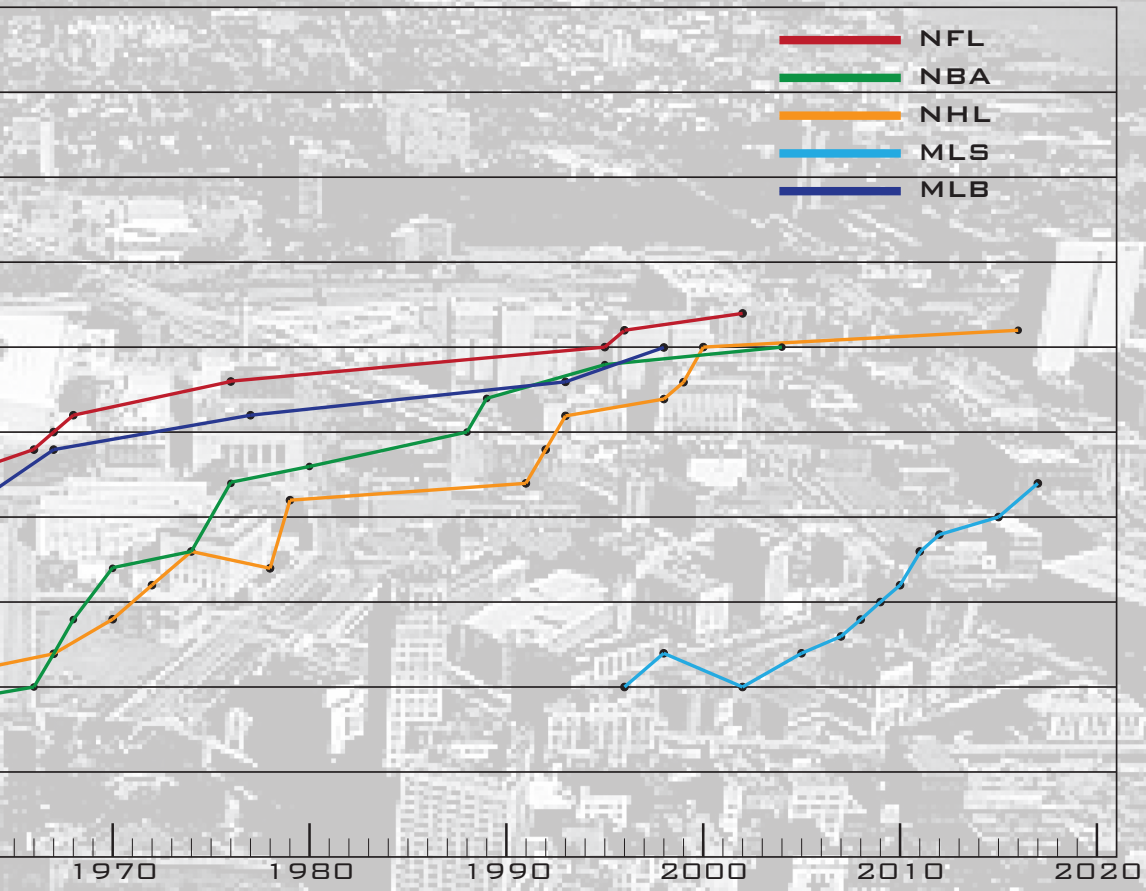
As franchises join the leagues or move this causes new stadiums and arenas to be constructed. Their sole purpose was for the enjoyment of sports and/or other large entertainment events (like concerts). The previous stadiums and arenas would be used for 50+ years, now they are lucky to be used half of that time frame, 20-30 years on average. On top of the shortened time span of being used, these new venues are costing much more to construct. As stated earlier, taxpayers money is being used to fund the cost of the venue. So why are is a venue funded partly by taxpayer money being demolished without the consent of the public?

There is a very large investment being made not only by the league and the franchise, but by the city itself. The investment being made is much more than just money itself that is used to pay for all of the costs. The time and commitment from both the franchise and the city are investments that go unnoticed by many around it. Many cities are willing to try to draw a franchise to them for the potential jobs they create, revenue they bring from the community and the tourism that comes along with other franchise coming to play games.

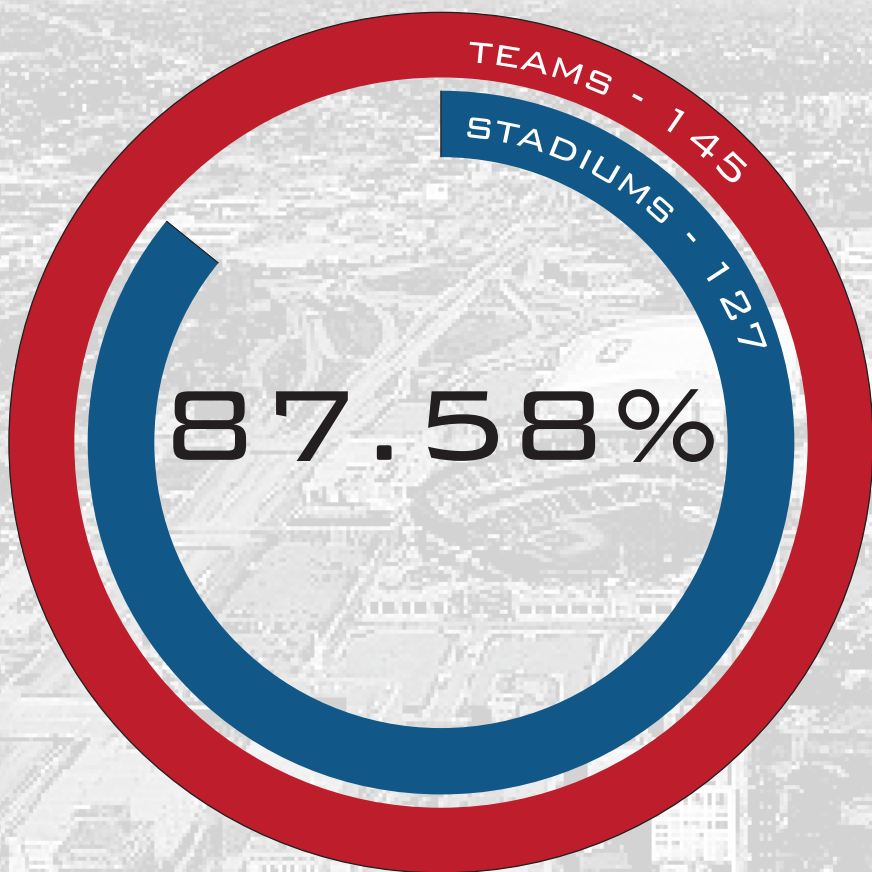


MAJOR SPORT EX

This map was created to illustrate the growth of the five professional sports leagues in the United States. Looking at the teams entering and leaving the leagues throughout the years. While looking at the graph we can tell that since 1960 there have been 63 expansion teams.

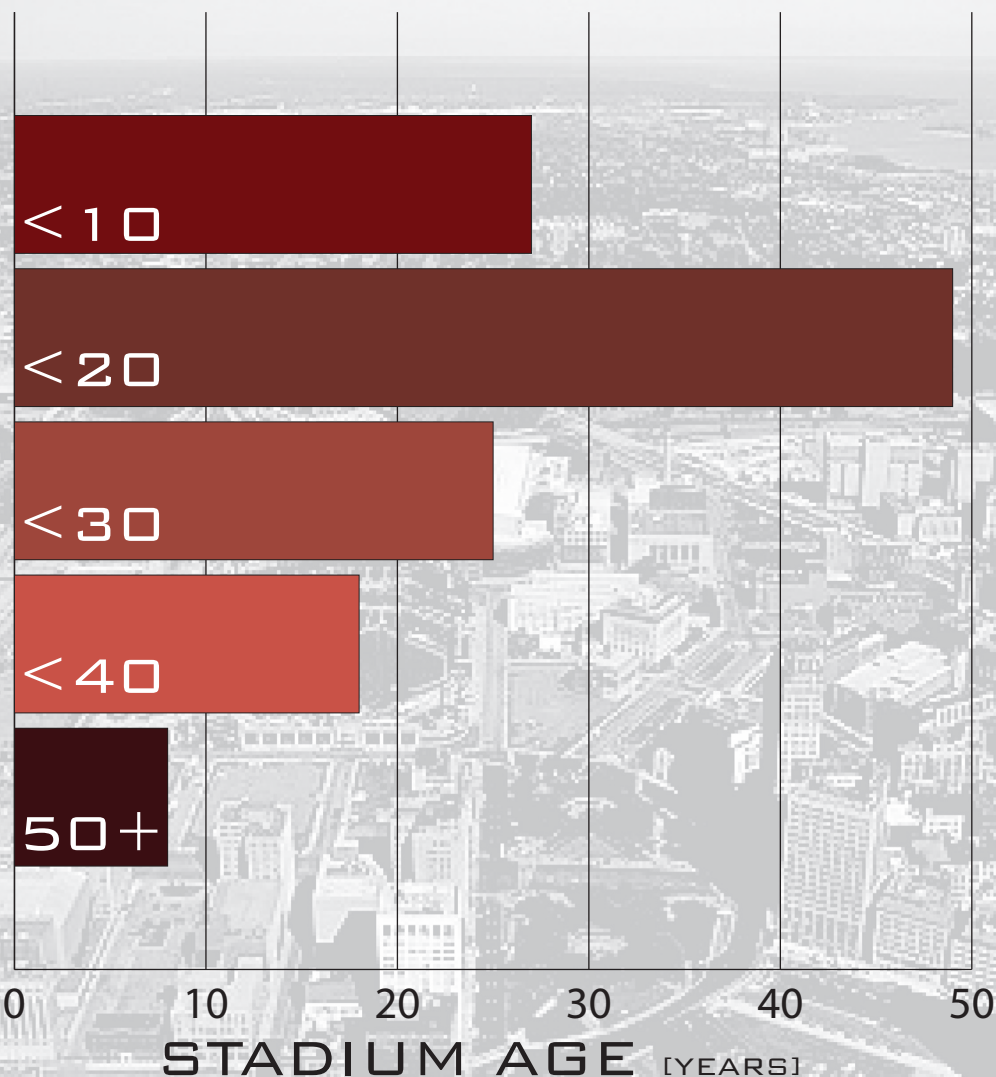


EXPANSION TIMELINE

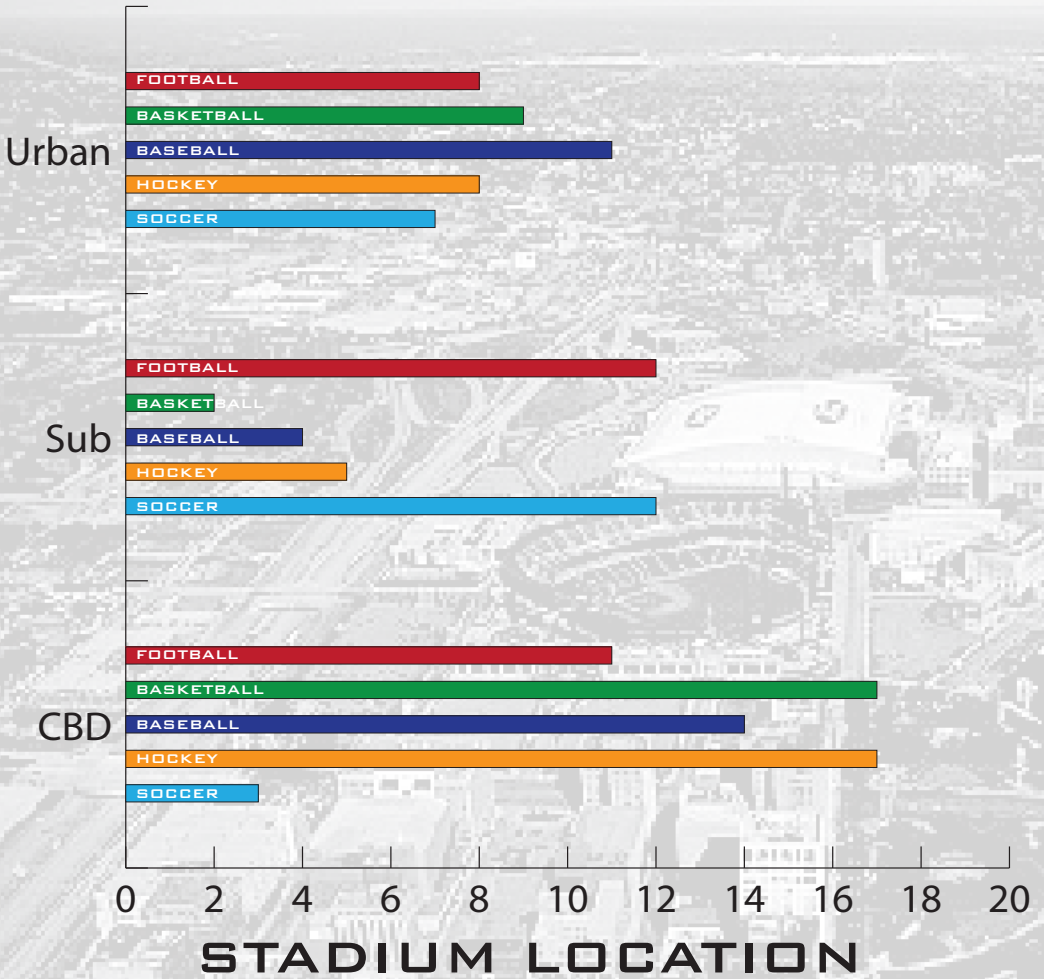


TEAM / STADIUM RATIO

The graph here shows the ratio between the number of sports teams through the 5 leagues to the number of stadiums that are being occupied by those teams. As you can tell 87.58% of the venues are occupied by 1 team. This doesn't seem terrible until you realize just how little those venues are used throughout the year by each of the teams. It is amazing with how little they actually are used to how much they cost to construct them.



The graph above shows the number of stadiums by age. From this graph we can tell that over the past 20 years 76 venues have been constructed (please note this only uses venues that are in active use). This results approximately 60% of venues being constructed in the past 20 years. If we increase this to 30 years that number jumps from 76 to 101 and from 60% to 79.5% in new construction of stadiums.



There has been a lot of change throughout the years in the sports industry, the location of the stadiums and arenas was not left untouched either. Location not just being in which city the franchise is in, but where in the city is plays. Urban, suburban, and the central business districts (CBD) are the main location for the stadiums to be in and all for various reasons. Each of these different districts have an unique feel to them . Some stadiums will thrive in an urban settings while others might be better suited for a central business district.

The unique feel that the settings sets for each stadium is what helps makes the experience one gets when going to the stadium. These atmospheres that are created can do much more for the venue than one might think. It is these settings combined with the fan-bases that have created such venues such as Lambeau Field in Green Bay, Wisconsin and Soldier Field in Chicago, Illinois and even Fenway Park in Boston, Massachusetts. These parks and fields are places in which the people going don't need the newest technology to enjoy the game, they go for an entirely different reason. It is for those reasons why these venues will not give up so easily.

We may not be getting the experiences that other generations may have received, but with 145 teams through 5 leagues playing in 127 different stadiums and arenas, is it really a surprise that everyone is trying to get ahead of each other while pushing and expanding their business? Owners want to provide the best experience while attending sporting events. Yet, with everything that is additionally being added to a stadium today, are people going for the event or the other amenities that the franchise is providing. However with the advancement in technology needed in these stadiums and the constant upgrade to the newest technology is it really worth it to turn around in 20-30 years and tear down such a costly venue?

NATIONAL FOOTBALL LEAGUE

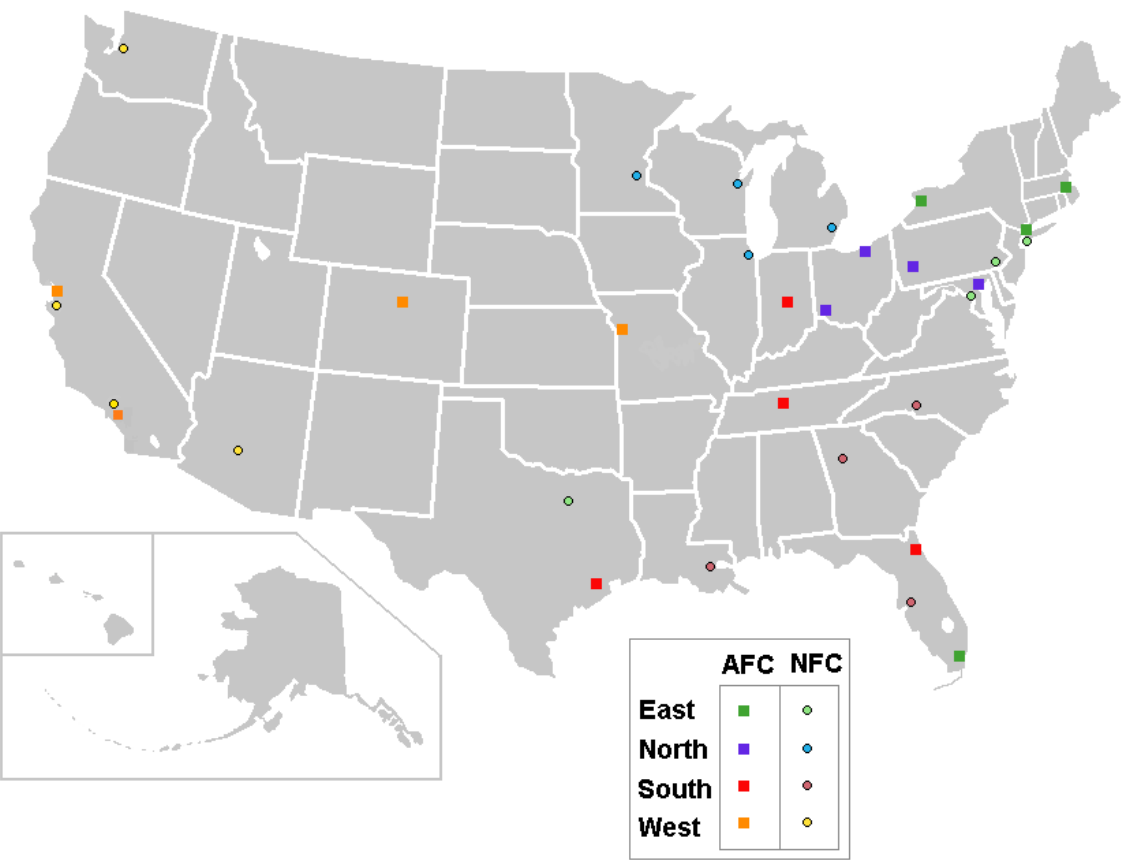
We are going to start with one of the most identifiable Professional sport's league here in the United States, the National Football League (NFL). This league began back in the 1920's starting with only 2 teams. In the nearly 100 years of existence, the NFL has expanded from the initial 2 teams to today's 32 team league. The league consists of 2 different conferences, the National Football Conference and the American Football Conference. Within each of these conferences exist 4 divisions.

Over the expansions not every franchise had a place to call their own. Specifically when first starting out, some shared venues with different affiliates as well. At the time it was very common for more than one team, as well as sport, to occupy a single venue. However, there quickly became the idea of relocation.

One team that came into the league shortly after it was formed decided to relocate. This act resulted in a new venue being constructed.

Over the years the league has gone through many expansions as well as relocations. On top of expansions and relocations some franchises just want an upgrade to their venue. Maybe that is a new stadium and maybe that is just simple renovations.

The NFL is one of the biggest franchises within the sports industry. It continuously has a very large fan base of people supporting their teams, traveling to see the games and buying the latest apparel. Yet, more recently it has been difficult to bring in the younger generation to the stadiums. This resulted in owners deciding they need to build bigger and more technologically advanced venues to draw in



the younger generations. For many going to experience the game and the atmosphere has always been the most exciting part of attending the games at their venue.

The map above shows a current layout of all the teams and their locations in the United states. However, what this map does not show are all of the stadiums that are standing but vacant.

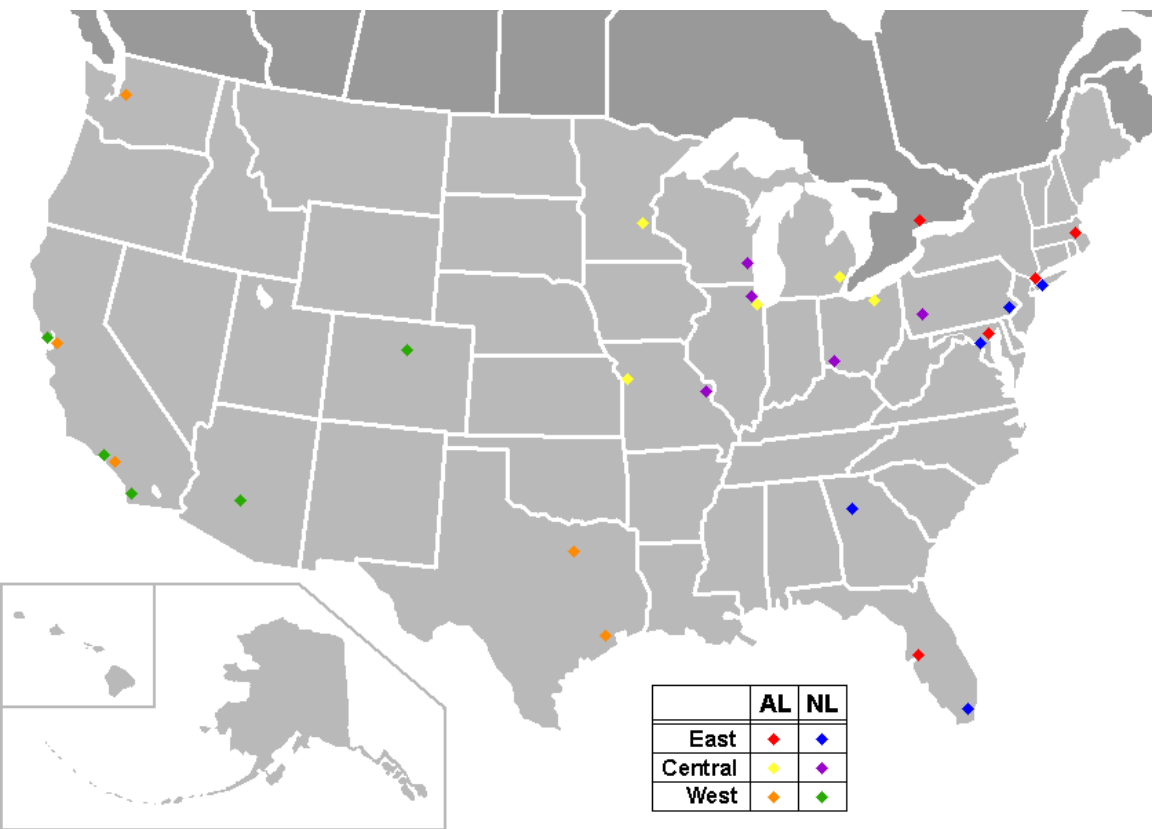
MAJOR LEAGUE BASEBALL

Following the American style of football, there is America's past time, baseball. The professional sport of baseball has been around more than 100 years easily going back into the 19th century. It is remarkable that some of the stadiums being played into today were being used all the way back in the early 20th century.

Fenway Park in Boston, Massachusetts as well as Wrigley Field in Chicago, Illinois are two of the most famous parks of all the professional sports in the United States. What is it that makes these two ballparks remain as opposed to the Washington Rangers move to Arlington, Texas in 1970 and becoming the Texas Rangers. Since moving they have built 3 different stadiums. That is 3 fields in less than 50 years! Less than 17 years each on average. That is ridiculous to spend that kind of money and investment in that short of time span.

The size of the stadiums used for baseball are smaller compared to football stadiums. So they can take up a slightly smaller footprint. Many of the stadiums that are being used today are generally located in the central business district (14) or in an urban setting (11). This makes what is surrounding them that much more important to think about and analyze.

Both of these stadiums types offer different conditions when looking into the possibilities of uses within the community. Also the fact that each of these settings would be specific to the city which it is located



in; their needs will not be exactly the same.

Similar to the NFL, the Major League of Baseball grew and grew and formed two leagues with each having slightly different rules. There is the American League and the National League each with separate divisions within them as well.

NATIONAL HOCKEY LEAGUE

The National Hockey League is quite younger than both the NFL and MLB. The league was began in 1942 with 6 teams to begin with and from there it has grown into the 31 teams we have today. The locations for many of the current venues are similar to both the MLB and NBA venue locations. A majority of the arenas are located in the central business district (18), and about an even split with the rest of the arena location between urban (8) and suburban (5).

The central business district (CBD) looks appealing as locations for arenas for sports like hockey, basketball, and some baseball do to the surroundings. There are more opportunities to have a deeper impact in the CBD than either the urban or suburban settings. I believe that there are more anchors that these franchises are looking to capitalize on within the central business district. The more the franchise can use the surrounding to their own benefit the better in their eyes.

Along with the surround opportunities, another reason in which the central business district and the urban environment have the most used locations for arenas is because of the smaller footprint used to support the games and other events that the arenas holds. Being in these locations could help after they are left and being looked to be re-purposed.

The potential to work well within the setting and potential to lay the ground work for future development or possibly even revitalize the current area are both intriguing ideas. Currently in the league right now, many of the venues have been built within the last 30 years. None of these arenas have really been around long enough to engrave this special and unique experience within its fan-bases.



The NHL is one of the more steady growing leagues and from that the venues were constructed at a consistent rate. Since about half of the arenas are over 20 years old and from the research say that current venues last for 20-30 years, it is safe to assume that in the upcoming future that there will be new constructions of arenas in this sport. This raises the question of what are some possibilities for the current arenas after they are left?

NATIONAL BASKETBALL ASSOCIATION

The National Basketball Association is similar to the National Hockey League in many aspects. The NBA start in 1946 with 11 teams. Unlike the NHL though, the NBA had a rocky road through the years to get to where it is at now. The league would go through some good patches and increase in size, then it would go through some rough times and reduce in size. Yet, after 20 years the league was finally able to stabilize and continue to expand and grow slowly.

In 2004 the league added its final team to come to the 30 team league that is today. Would it be surprising if I stated that 10 arenas that house NBA teams also house NHL teams? Why isn't this more common? Is it because franchises want something to call their own? Is it because they do not want to share no matter how beneficial it could be?

Well whatever it is, NBA arenas are nearly a mirror image of the NHL arenas to where they are located in the central business district (17). The urban and suburban setting are a little different in numbers though, still significantly less than the CBD at 9 and 2. The smaller footprint of these arenas allow for a much more flexible space in where they can be located.



From the map above, we can see that the locations of the stadiums are quite diverse all over. The arenas are all over the place.

MAJOR LEAGUE SOCCER

Finally, rounding off the last of the 5 professional sports here in the United States is Major League Soccer. The MLS has been around for just over 20 years. It is by far the youngest of the professional sports and it was created as a stipulation for the U.S. to host the 1994 World Cup.

In 1996, the league began with 10 teams and from then it has grown to a 22 team league with more teams being added every couple of years. For the first 10 years though the league barely grew in size, that is until 2007 when England superstar David Beckham signed a 5 year deal with the Los Angeles Galaxy. This put the United States on the map in the world of soccer.

The locations in which the stadiums are located for MLS are more so in the urban (7) and suburban (12) settings, while the CBD (3) does not have as many stadiums that support soccer games. However we may see this change over the next several years as the league continues to expand to a predicted 28 teams.

Some of the new teams share stadiums with other sports. The most surprising stadium that is shared is in New York at Yankee Stadium. Yes you did read that right, a soccer game being played on a baseball field. Yet, because the MLS is the youngest league of the 5 professional sports there is the question on how long these stadiums and venues will last per team. Will they follow the leads of franchises of other leagues and begin to move and leave their stadium at 20-30 years of use? Or will they continue to play there for a longer time and disregard this notion of constructing and moving in a “short” timespan?



From the map above you can tell the difference in density on where the franchises are located compared to younger sports. The coast lines are the most dense areas in which the league is located at and I can guess that trend is going to continue as the league expands.

Despite being the youngest league, soccer has one of the largest fan-bases of all sports because it is not solely an American sport. The league isn't just growing in the United States for *The Beautiful Game*, but the interest as well is growing especially in the youth.

03

The Potential of Re-used Stadiums

Stadiums and arenas are being constructed on the average of 3 a year for the past 30 years. Whether those are from the leagues expanding, teams relocating, or even just wanting to build a new venue to play in that is a lot of money and investment being made over the course of 3 decades. Yet, with all this new construction there are the venues that are being left with a seemingly knowing fate of being demolished. However, this isn't the only way, there have been many different cases around the world in which a stadium or arena has been converted into something else and has helped the community.

As of April 2018 there are scheduled to be 12 new stadium and arena constructions within the next 5 years. While only a couple of these are from new teams entering the league, it leaves 10 existing stadiums to be vacated. So what do we do with them? There is so many different options to think about what to choose from, there could be new housing, a mall, commercial use, industrial use, institutional use, and much more.

Some of the better stadiums to be re-purposed are:

1. Highbury Square, London, England former home of Soccer team
2. Maple Leaf Gardens, Toronto, Canada former home of Hockey Team
3. Busch Stadium, Indianapolis, Indiana former home of Baseball Team
4. Las Arenas, Barcelona, Spain former bull fighting arena
5. Rio Stadium, Rio de Janeiro, Brazil, former 2014 World Cup venue

Each of these existing stadiums were unique in their own right and have since provided the surrounding area with another asset after their re-purposing. For instance, Highbury Park was converted in to luxury apartments, Maple Leaf Gardens dropped a ceiling in to make a smaller hockey arena and included a market and mall above. Both of these have helped stabilize the community because they are being used more consistently than before.



highbury square apartments, london, england



las arenas, barcelona, spain



maple leaf gardens, toronto, canada



rio stadium, rio de janeiro, brazil

NEW CONSTRUCTION | 12 VENUES

LAS VEGAS STADIUM AT HOLLYWOOD PARK, LAS VEGAS, NFL
NEW ERA FIELD II, BUFFALO, NFL, TBD
GLOBAL LIFE FIELD, ARLINGTON, MLB, 2020
OAKLAND BALLPARK, OAKLAND, MLB, 2023 PROPOSED
WISCONSIN ENTERTAINMENT + SPORTCENTER, MILWAUKEE, NBA, 2018
CHASE CENTER, SAN FRANCISCO, NBA, 2019
INGLEWOOD ARENA, INGLEWOOD, NBA, TBD,
OTTAWA MAJOR EVENTS CENTER, OTTAWA, NHL, 2021
CALGARYNEXT, CALGARY, NHL, TBD
BANC OF CALIFORNIA STADIUM, LOS ANGELES, MLS, 2018
AUDI FIELD, D.C., MLS, 2018
ALLIANZ FIELD, MINNIEOTA, MLS, 2019

FUTURE VACANT | 10 VENUES

NEW ERA FIELD, BUFFALO, NFL
QUALCOMM STADIUM, SAN DIEGO, NFL
GLOBAL LIFE IN ARLINGTON, ARLINGTON, MLB
BMO BRADLEY CENTER, MILWAUKEE, NBA
OAKLAND-ALAMEDA COUNTY COLISEUM, OAKLAND, MLB+NFL
ORACLE ARENA, OAKLAND, NBA
CANADIAN TIRE CENTRE, OTTAWA, NHL
SCOTIABANK SADDLEDOME, CALGARY, NHL
RFK STADIUM, D.C., MLS
THE DOME AT AMERICA'S CENTER, ST. LOUIS, NFL

RECENT VENUES | CONSTRUCTED + VACATED

After looking at the amazing ideas and ways in which a stadium or arena could potential be re-purposed, I decided to look over the list of venues that are recently vacant or are going to be vacated in the near future. I selected five different stadiums and arenas to get a good sense of the difference of location and size. The five venues include:

1. RFK Stadium, Washington D.C.
2. The Dome at America's Center, St. Louis,
3. BMO Bradley Center, Milwaukee, Wisconsin
4. New Era Field, Orchard Park, New York
5. Canadian Tire Centre, Ottawa, Ontario, Canada

When looking at each of these venues their locations were a big consideration, as well as how long it had been around. Exploring ideas of what could occupy each of these spaces other than sporting programs was the intention. Or even if there was the possibility of them being able to be re-purposed for that matter.

RFK Stadium in Washington D.C. in-particular was the one that brought the most interest. It has been around for relatively 67 years and has been the home of many different teams and events. The location in which it was located provided the most unique setting as well.

The next question to be asked is, what can be done with such an old stadium? What can be done to preserve the value that this stadium held in the form of memories and experiences?

04

Case Study: RFK Stadium

Robert F. Kennedy Memorial Stadium has such a rich history that tearing it down and replacing it with something else, even a memorial, would be heartbreaking to many. The stadium has gone through many different eras and times that it is much more than just a place when sports were played.

The stadium opened as the District of Columbia Stadium in October of 1961. It was one of the “concrete donuts” that was created in this time frame for multiple purposes. In the case of RFK Stadium, it was the home of both the Washington Redskins (1961-1996, NFL) and the Washington Senators (1962-1971, MLB). It hosted matches for the 1994 World Cup that was held in the United States. The stadium has been host to many different teams and events since it opened and as of recently it was being used for a soccer stadium for D.C. United who just ended their time at the stadium this past season. D.C. United has been calling RFK home since 1996 when they first entered the league, and for a brief spell of three years shared the stadium when D.C. was included in the expansion of MLB and got the Washington Nationals.

When the stadium was first constructed in 1961, it cost approximately \$24 million. A study was done and it was concluded that if RFK was to be rebuilt in 2016 it would cost of \$192 million. It is a huge difference of prices, but when considering it is nearly a 60 year old stadium it is understandable.

The new stadium sits on 190 acre campus that is ~2 miles directly East of the capital building in Washington D.C. The stadium alone sits on 80 acres itself. It is owned and operated by Events D.C. who has a land lease from the National Park Service that expires in 2038.

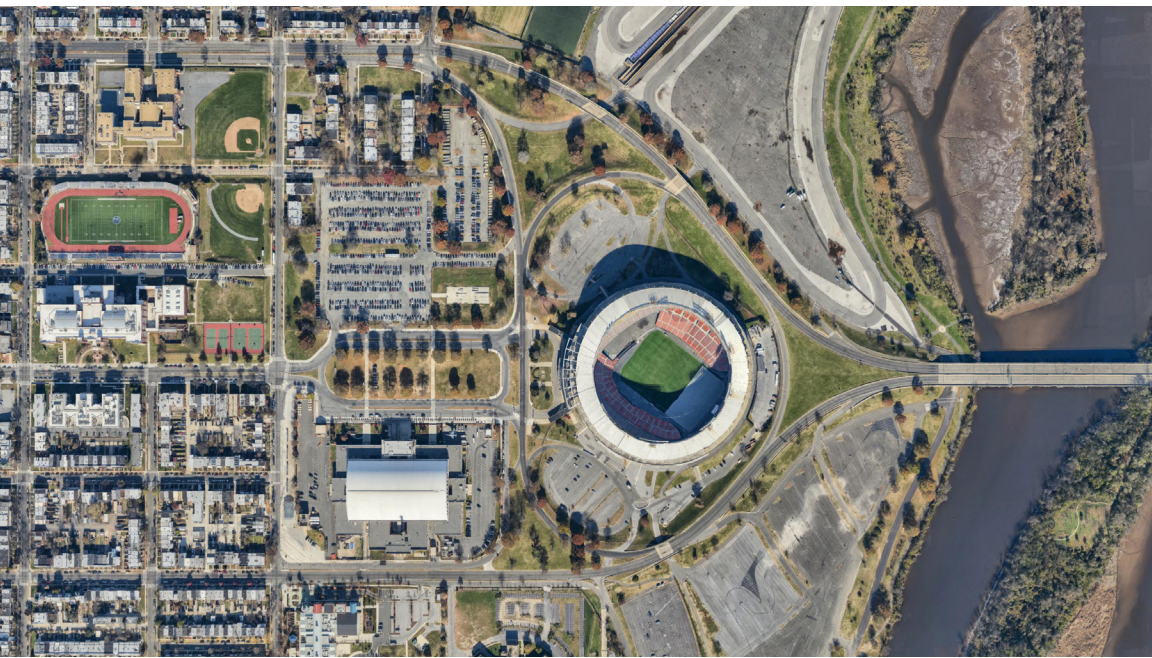
Since the soccer team is moving next season, what will happen to this piece of history? There are some proposals out there from OMA on what the campus could actually become. One of the proposal includes keeping the stadium as well.

These are the images presented by OMA for what could potentially become of the campus and stadium.

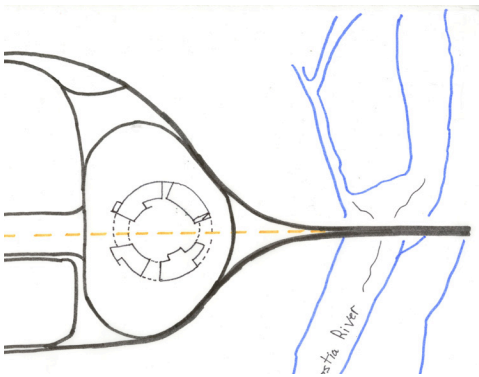
The public was excited when seeing the images. The people that lived across the river liked the idea of having pedestrian bridges going across so that they felt more connected.

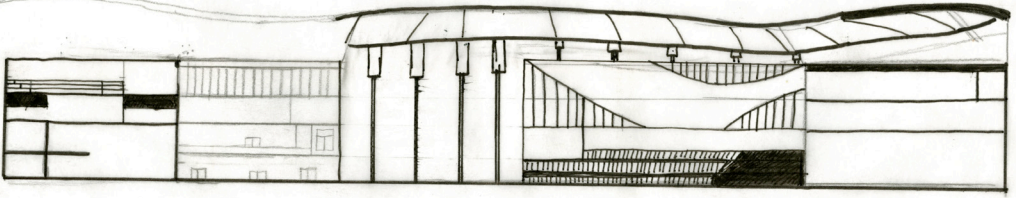
Each of these offer various possibilities for the campus to be transformed into.





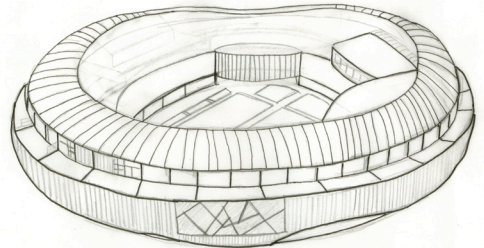
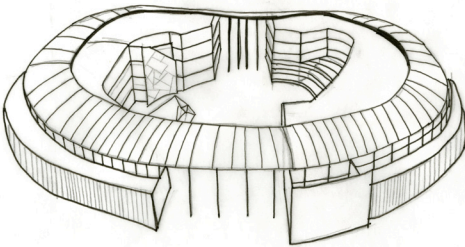
Upon further inspection of the city, the stadium is directly two miles East of the capital building. There is the potential of creating a strong connection between the two sites. The road running over the river and around the stadium provides a unique opportunity to link the two visually as one comes over the river and into the city. Along with the connection, the canopy and vertical elements along the exterior are both worth utilizing during the re-purposing. These elements are the features that make RFK what it is.

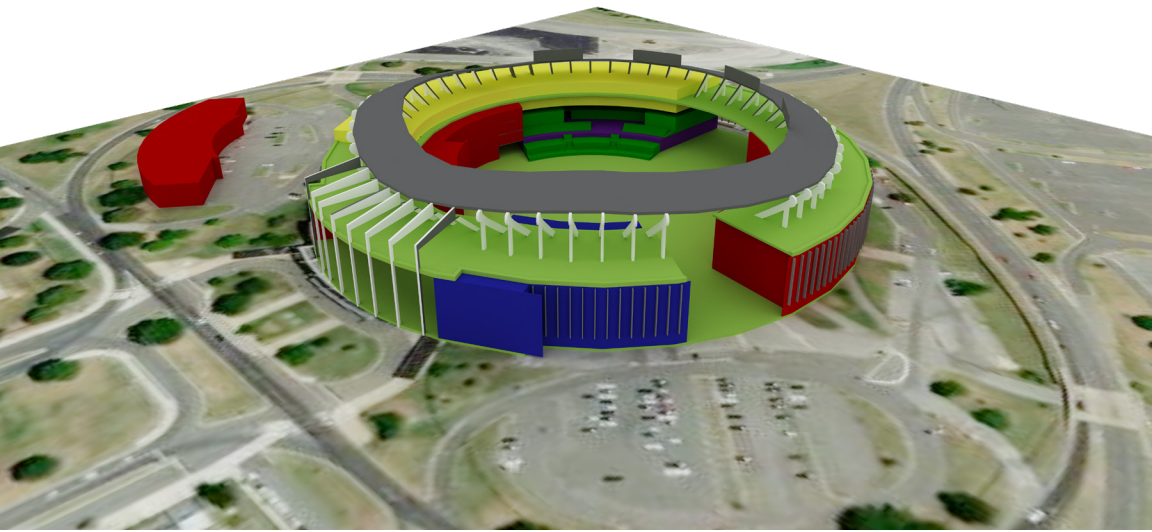




While analyzing the stadium, the stands stood out as a feature that could be re-used. Converting them into terrace farming was the main idea on the North stands. It was one of the main concept kept through the sketching phases.

Several ideas came up as how to potentially re-purpose RFK. It could be converted into an office park for someone like Apple, Samsung, Amazon, etc.





The above image is a diagram of one potential way to re-purpose RFK Stadium. While keeping the majority of the stadium, breaking up the facades and creating the visual connection through to the capital building was main concept. Utilizing some of the second tier seating as residential with market space down below that would be similar to the L.A. Grand Central Market. Institutional, commercial, and office space would also occupy others parts of the stadium with a large central space to be transformed into use for the public.

05

Standard Issues to Consider

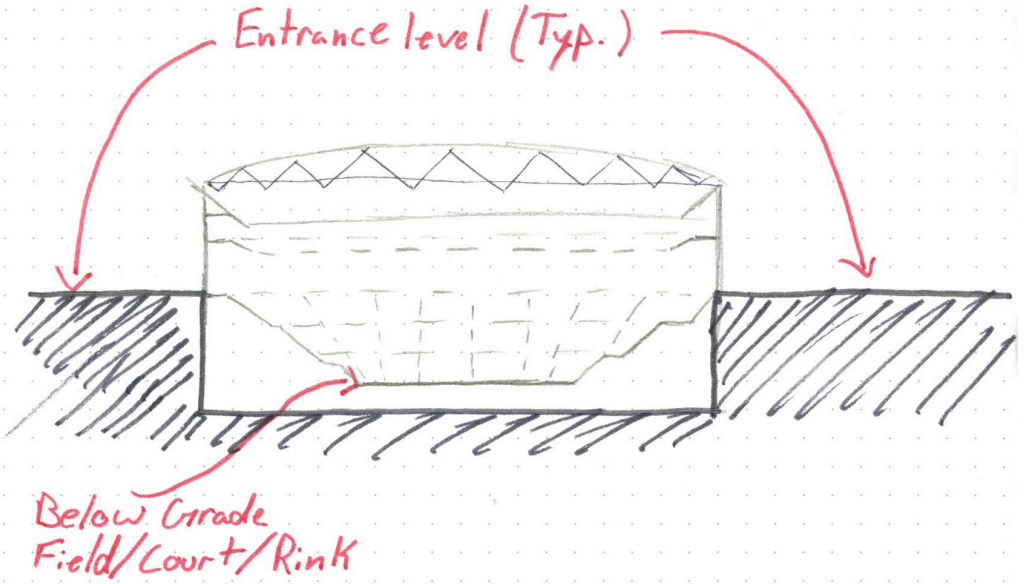
While there is a possibility of many different programs that could be used when re-purposing a stadium, there are many as well that could be restricted do to how the stadium was constructed in the first place. The place of circulation could become and issue, whether it is an arena or stadium could push some potential programming out. Extensive research has to be done in order to decide what could the structure best be suited for when being re-purposed.

Each stadium has its own quirks and issues that must be looked at when decided on the programming that is to be done with it. Some of the typical issues that arise are:

1. Playing field sunk a couple of stories below grade level.
2. The levels that regarded as the “upper bowls”
3. In some stadiums, movable features such as playing fields or even operable roofing
4. The lay out of the circulation paths as well as accessible means of circulation
5. The exterior of the stadium
6. Roof Structure

These issues can dictate what a stadium is converted to when it is being re-purposed. Sure one can always fix and add on to them but it is not always as simple as just spending more money to add more to take care of the issue.

Field level + Approach



- Why are most athletic Courts/Fields/Rinks below grade?
- Relation to why seating on concrete?
- Reduction to height

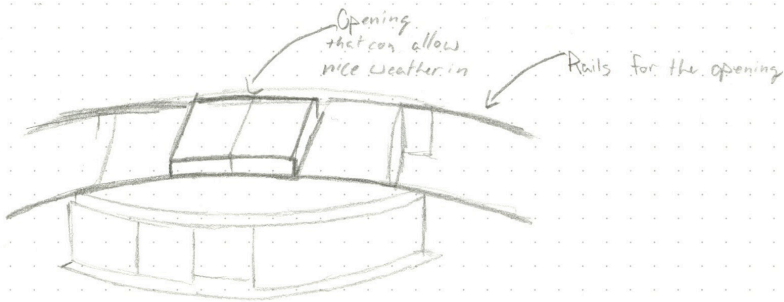
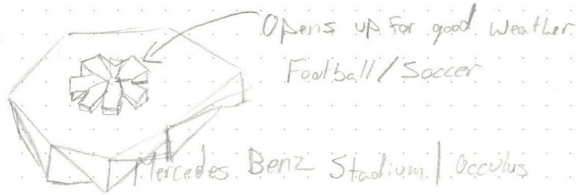
SUNKEN PLAYING FIELD

Starting out with the level of the playing field compared to where the typical entrances are, is one of if not the largest issue to consider when re-purposing a stadium. When one typically enters a stadium it is not at playing field level. In fact, the playing field is typically sunken below the ground plan.

This can be an issue because of the amount of space that it would require to fill if the stadium is to be converted into something else. What could you place in there?

THE TRANSFORMING Stadium

- Extra amount of equipment w/ the stadium.
- Systems used to control the alterations.
- Enclosed Stadiums w/ retractable Roofs weight addition and the size

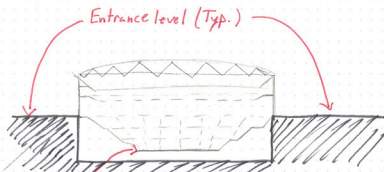


OPERABLE FEATURES

Operable features like stands or even the roof sound like amazing ideas, but what about the ability to utilize them in anything besides a stadium? It becomes a feature that essentially becomes useless because either it will be factored in and usually left open or just closed and not used at all. Yet, because such innovations have been around for such a short time there is no for sure answer for how they could be used successfully in the re-purposing of a stadium.



Field level + Approach



Below Grade
Field/Court/Rink

- Why are most athletic Courts/Fields/Rinks below grade?
- Relation to why seating on concrete?
- Reduction to height

EXTERIOR

Now the exterior is what makes the stadium, but the facades can cause problems if it is meant to be just a skin on the outside. Also today it is more common for facades to have strange patterns and shapes on them. For all we know this is just to distinguish and set each stadium apart from each other.



Now that we have discussed some of the typical issues that one might encounter when trying to re-purpose a stadium for another use, we can look at some that were found in the RFK case study.

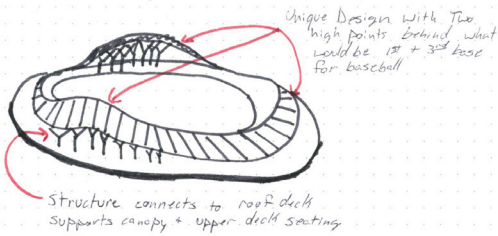
RFK Stadium was a unique structure that with stood time and kept being used by many different teams. It was remarkably adaptable, being used for baseball games, football games, and even soccer games. There was a lot of thought that went into the planning of a venue like this. However, that is not to say that it didn't present its fair share of issues, some of which include:

1. Canopy around the top of the stadium
2. Circulation pathways
3. Vertical elements circling the facade of the structure
4. Upper level bowl
5. Concrete sea of parking surrounding the site

These are just some of the issues that came to light when a study was performed. These are the ones that made coming up with an idea on how to re-purpose RFK Stadium difficult.

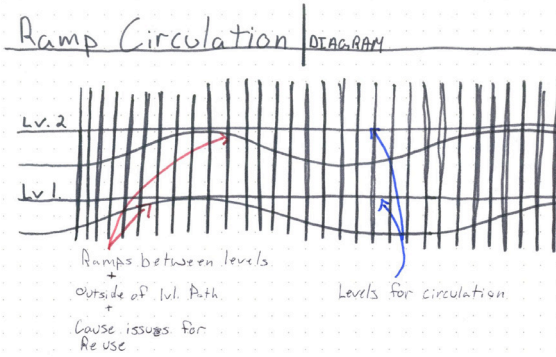


Canopy Diagram | DIAGRAM



CANOPY

The canopy circling the top of the stadium is one of a kind. It is unique because of the way that it moves in a wave around the top and that the two highest points are situated at what was the original positions of first and third base when the stadium was being used as a baseball field. It creates such a unique profile but also causes an issue because of how it is anchored to the stadium.



CIRCULATION

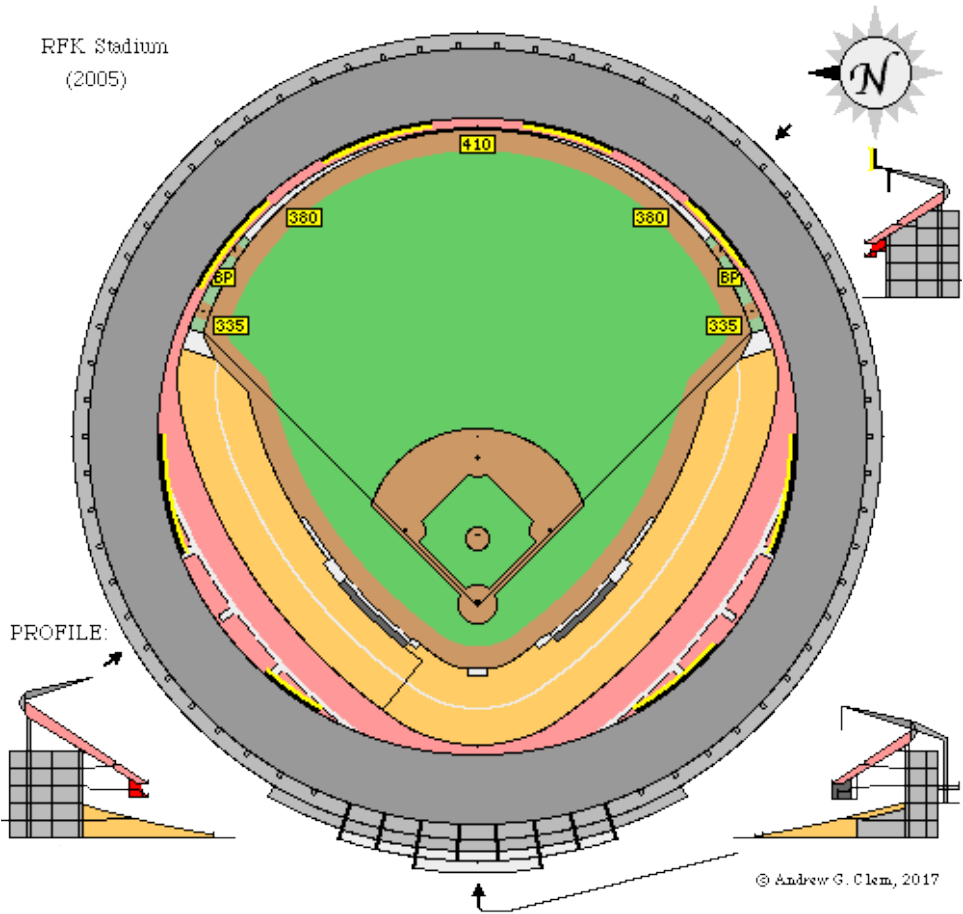
Next to the canopy that encircles the top of the stadium, the circulation is not what is usually seen in sports venues. The main circulation is situated around the perimeter and is comprised of ramps between levels. The circulation is much more integrated into the structure than most other venues main circulation pathways. Yet, what would someone do with it to utilize the pathways and vertical elements that wrap around the exterior?



EXTERIOR FACADE

Now the exterior is what makes the stadium, but the facades can cause problems if it is meant to be just a skin on the outside. Also today it is more common for facades to have strange patterns and shapes on them. For all we know this is just to distinguish and set each stadium apart from each other. The exterior facade of RFK is open and you can see the main pathways inside. The vertical elements are what help define RFK along with the canopy and pathways.

RFK Stadium
(2005)



UPPER + LOWER BOWLS

The different areas of seating are issues especially when in RFK the lower bowl contains a couple of sections that can be removed. This can make it easier but around these sections causes the upper bowls to need more supports to help transfer the loads. The upper bowl is connected with the canopy and that could potential be an issue if one was to remove them and not the other.

06

Potential Programming

Now that some issues have been identified, what do we do with them? How do we address them? The first way in which one can address them is to figure out some of the best programming that can fit with in these spaces. Stadiums and arenas are different when it comes to how to deal with converting from a sports venue to something else. The big difference is that with an arena there is no daylighting that penetrates into the bowls and playing area.

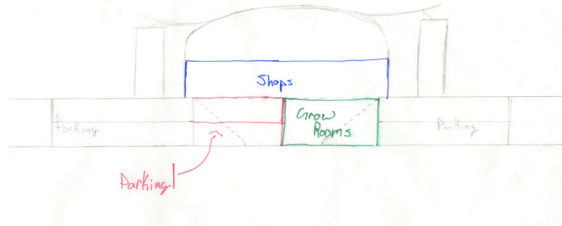
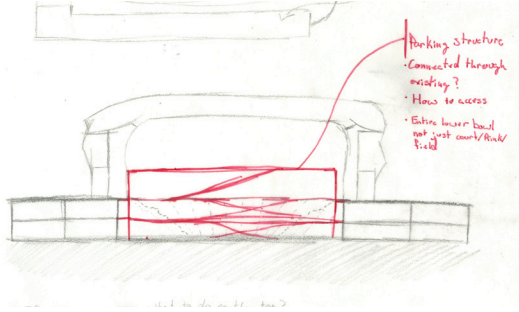
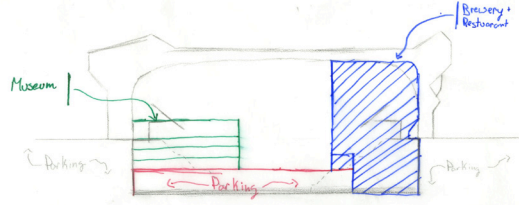
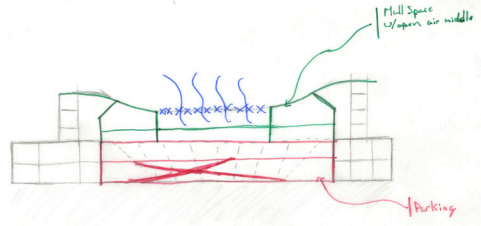
One of the biggest challenges to deal with is that the playing field, whether in an arena or stadium, is below ground. It would be one thing if it was only a couple of feet below ground level, but typically they are a couple of stories below. What type of programming can work at such a depth? Is there access for handicap down to that level if needed or does it need to be placed in?

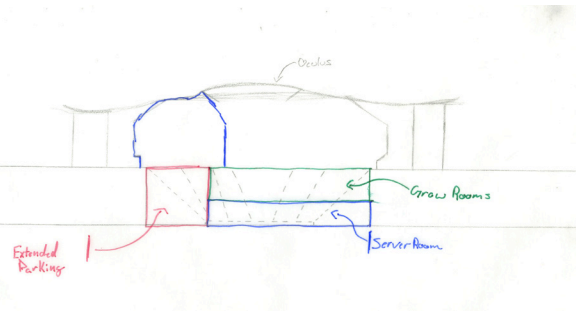
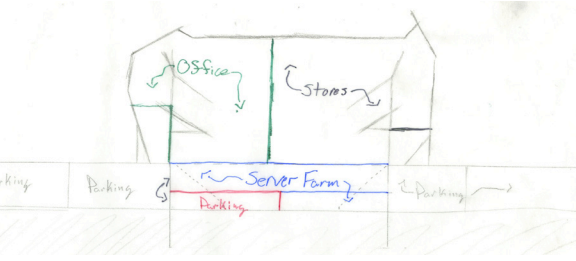
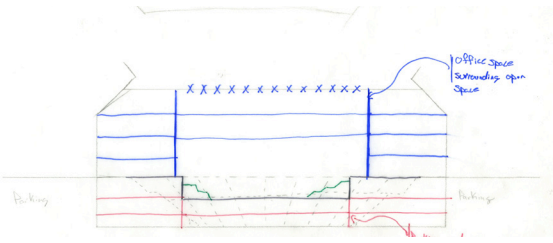
While recognizing these issues, addressing what the city and community need or could benefit from is a step in the process in trying to figure out how to re-purpose the venue. Does the community need housing? Does it need more office spaces? Could the community benefit from turning the venue into an office park? These are just some of the options in which could be thought of as possibilities.

The sketches here are considerations and ideas on how an arena be programmed for re-purposing. It ranges from a variety of uses, focusing on mixed use development.

1. Offices spaces
2. Mall space
3. Parking space
4. Open space
5. Medical Grow rooms
6. Server rooms

The medical grow rooms and server rooms work well in programming because of the hyper control that they need to work. The parking similarly can work as an extension of the parking that is already connected to the arena.







Re-purposing stadiums is just the start, of course not every stadium can or will be re-purposed. Some structures are just too old and haven't been kept up to be re-purposed properly. One stadium in particular that was left to set for too long and nothing could be done with it is the Pontiac Silverdome in Pontiac, MI.

The Silverdome was once the home of the Detroit Lions and when they left nothing was done with the stadium properly for years. It was used over the years for some events, like soccer matches. Not only was the structure left and not kept up, but the surrounding parking lot was used as space for cars to be stored by dealers. What do you do with such a structure after all that time being abandoned? Sometimes when a stadium is left like the Silverdome the only option is to demolish it and build something new over it.

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07

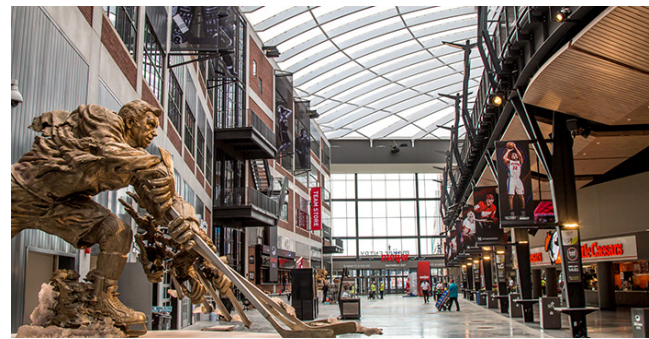
Preparing for the Future

“On paper the easiest thing to do is a bunch of bespoke Olympic venues which then you end up after an Olympics trying to retrofit for some other use.. Far better is to decide what a country needs and then fit an Olympic even into that building.” - Glen Scott, What Happens to the Olympic Venues After the Closing Ceremony. Aug. 31. 2016. The guardian.com

This quote Glen Scott might be specifically about the Olympics, but the core of it is what needs to be thought about. Re-purposing stadiums right now is always a think about it when we are at that stage mentally right now, but it needs to start being in the thoughts at the beginning of the process. This way can help the community for because it is not just design and constructing this multi-million dollar venue for little use, it would be laying ground work for what is going to happen after.

Now 20-30 years later is hard to plan for, but at the very least to have a starting point with all the infrastructure laid out will be much more helpful. The way around it, as mentioned earlier, is to collaborate with the city planners and figure out the market trends that are going on and potentially figure out some that may arise around the time frame in which the venue will be vacated.

There is one issue that will arise in this movement though and that is convincing the owners to this idea that in 20-30 years they will be leaving the stadium for a new one. The owner will not like the idea that they will be paying money to construct a venue you for their franchise for it to be used by someone else afterwards.



There is one stadium right now that took a different approach in design and the way that it engages the public and surrounding areas. That arena is the Little Caesars Arena in Detroit, MI. Two of the facades are running along Woodward Avenue and I-75 are pulled off the arena to create a unique spaces on the inside. The facades that are pulled off the arena function as businesses outside of the arena. This was a bold move because it now allows the businesses to be open and make revenue even when there isn't an event happening at the arena. This may lead to an easier time of re-purposing when it comes to the point that the Detroit Red Wings and Detroit Pistons leave the new arena.



Right now being that Little Caesars Arena is the only venue like it we won't know how well it will do if it is re-purposed. However, notes can be taken on the ways in which future stadiums can be laid out so that when the time comes the ground work will be there for it to be converted into something else. Or maybe the solution to this could be that stadiums and arenas are not specifically stadiums or arenas.

"In reality, I think it's coming back to the best stadium would be not to build it at all or if there's a way to do it in a temporary way and save all that money on infrastructure." - Dan Meis, 11.18.15, wired.com, The Future of Stadiums Might be no Stadium at ALL

This is an idea that could hold some interesting points when looking to develop a new venue. There are examples of spaces being transformed in to venues when needed for an event. One of the main places in which we can see this is in Siena, Italy. The Piazza del Campo is the main public square in Siena and twice a year it is transformed into a track for the horse race that takes place.

Even though this is one way to go about think about stadium design, the idea of laying the ground work for 20-30 years down the line is a more plausible route to take. The fact being is that cities love their sports team and the venues. The team brings a lot of pride to a city and the venue in which they play is a place in which people will always associate that feeling with. Not only a feeling of pride will come from it, but memories and experiences of being there for events will always be with anyone that attends.

The best option is to set up a series of guides about how to go about developing a new stadium or arena. These guides will help introduce a ground work for the venue so that when it is vacated in the future it will still have a life and not be wasted.

The guides to consider for a new stadium to be re-purposed after use:

1. Connection with the surrounding areas.
2. Address axis: roads, sidewalks, surrounding lots, parking
3. Business connections
4. What makes up the venue
5. Structure and capacity
6. Additional uses of the venue
 - Can any operate outside of stadium usage
7. Relation between interior +exterior

08

Laying the Groundwork: Future of MLS Stadia

When looking at the five professional sports, soccer is the youngest of them. Since forming the league in 1996, the MLS has been growing steadily, especially over the last decade. However even though soccer has been growing, not only in the MLS professional but around the entire United States, the franchise are just starting to get their own stadiums to play games in.

This is the an amazing opportunity to rethink the way stadiums and venues are designed for this sport. It is essentially a fresh canvas for a painter. What makes it even better is that at the current time professional soccer does not draw the same size crowd, only about 30,000 at most, as a sport like football, ~70,000. This allows for a smaller footprint to design in with all things considered.

With the guidelines that were established earlier, we can seek to set up a potential new development that has the intentions of being used after the team leaves. The location is one of the major keys.

A site was picked that would take a road out with the intention of replacing it once the venue was left after the team had left. The main idea was to have a park between and existing stadium and the new development and then place four different structures on the corners of the field to eliminate the corner seatings.

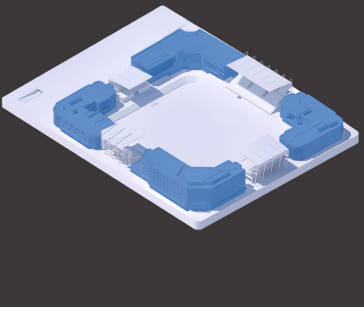
These structures would be the main anchor to the site that would be used throughout the entire life of the stadium and after. They would be used for a variety of different programs.

The main playing field would be sunk in below grade with more permanent stands encasing it. While stands that would be able to be removed when the stadium was converted but stable enough to withstand the many seasons of use to come infilling between the buildings. Together these would be able to hold a capacity of about 22,000 attendees for game day.

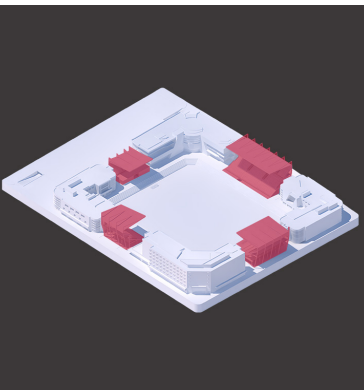
The first and second stage of the re-purpose of the stadium would be re-integrating the road back in, but reducing it to a two lane road with bike lanes and benches. The benches would be there to provide a place to sit and enjoy what was going on down in the space that use to be the field.

The field would be converted into a public place during the first phase of the conversion. While during the third phase of the re-purposing the large space that use to be part of the field would have new development on it.

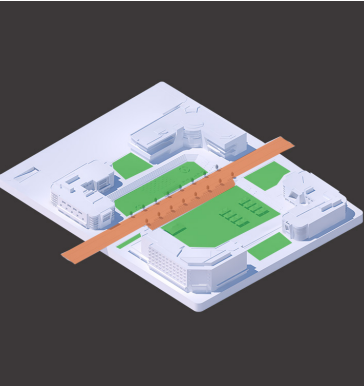
Diagrams



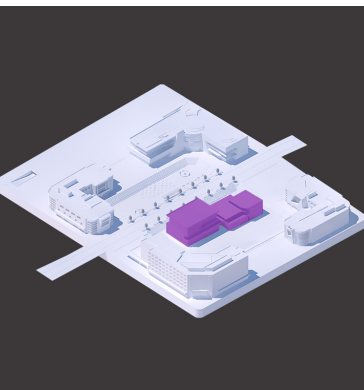
The corner buildings that encase the field and stadium provide an anchor and street presence to the community. As well as have views to the field from a variety of locations including spaces on each structures roof top.



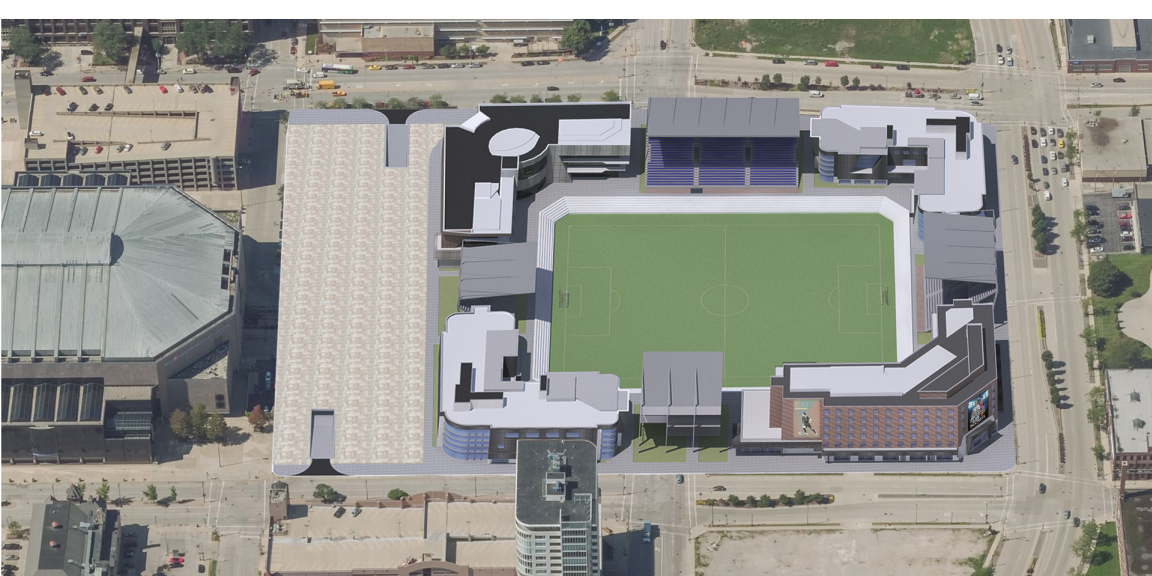
The temporary stands provide an additional layer of presence on the street. Also they will feature as the main entrances to the stadium and have places to advertise along them.



Phase 1 +2: the reintegration of the road and green space for the area. Green space would provide a space for public gatherings and places to relax within the city. Also they would be flexible to hold events with the steps that stayed from the stadium bowl.



Phase 3: the addition of an additional structure in one of the public spaces to provide additional programming.

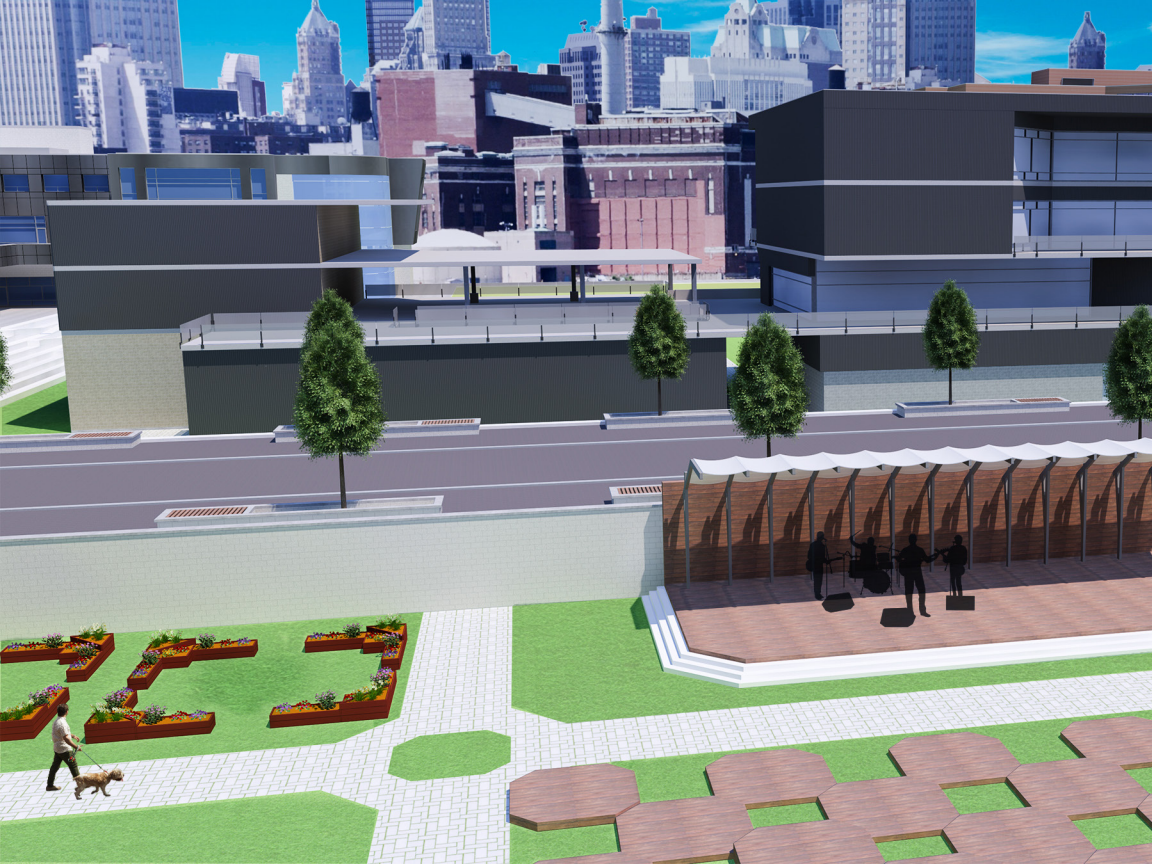


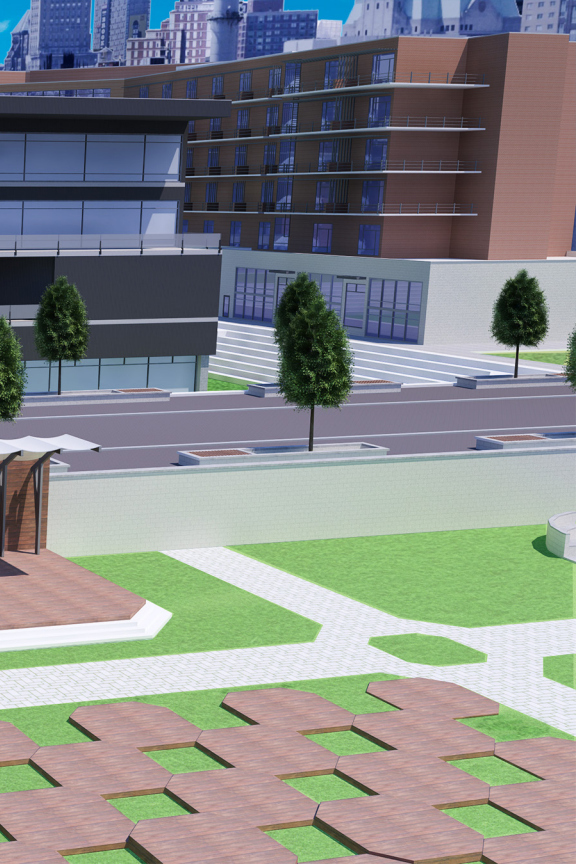


When it is being used as a stadium, there are places all around in which one will be able to enjoy the game from. The interior relation of the buildings and the field should be thought about in depth. Is there a interior facade like at Little Caesars Arena? Or is it completely left open so that any of the surrounding structures can see into the game or event when it is going on?

At the ground level is there business that run through from street to field? Or maybe its a different place for attendees to get food?

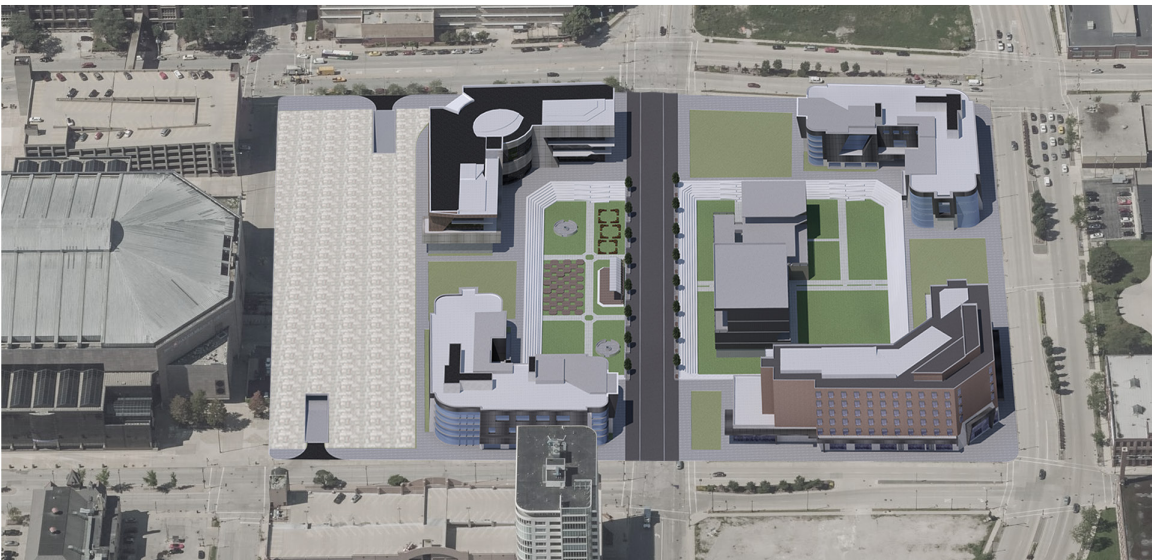
Maybe there is a spot outside of the venue in which the public can stop by and view into the stadium to get a glimpse of what is happening on the inside.

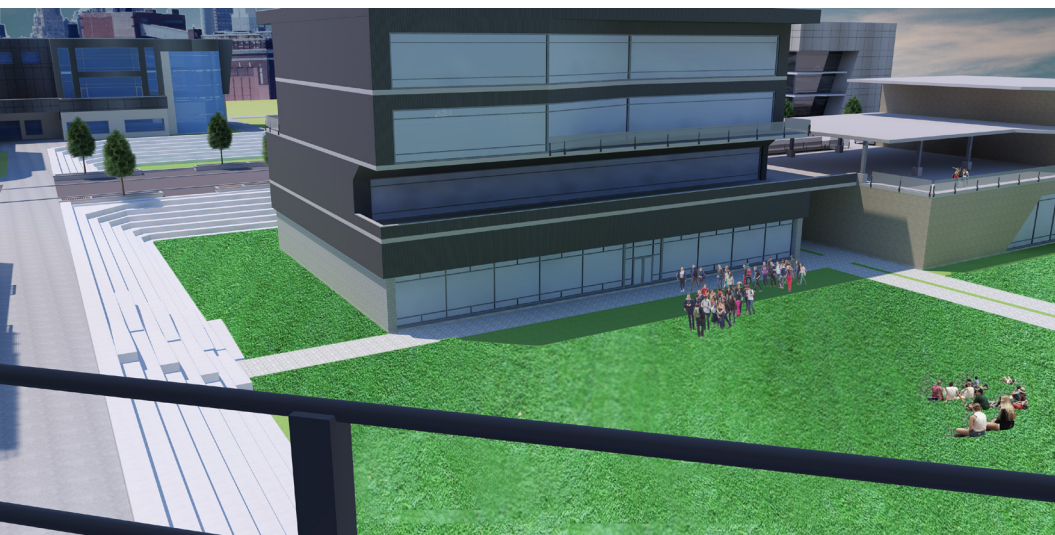
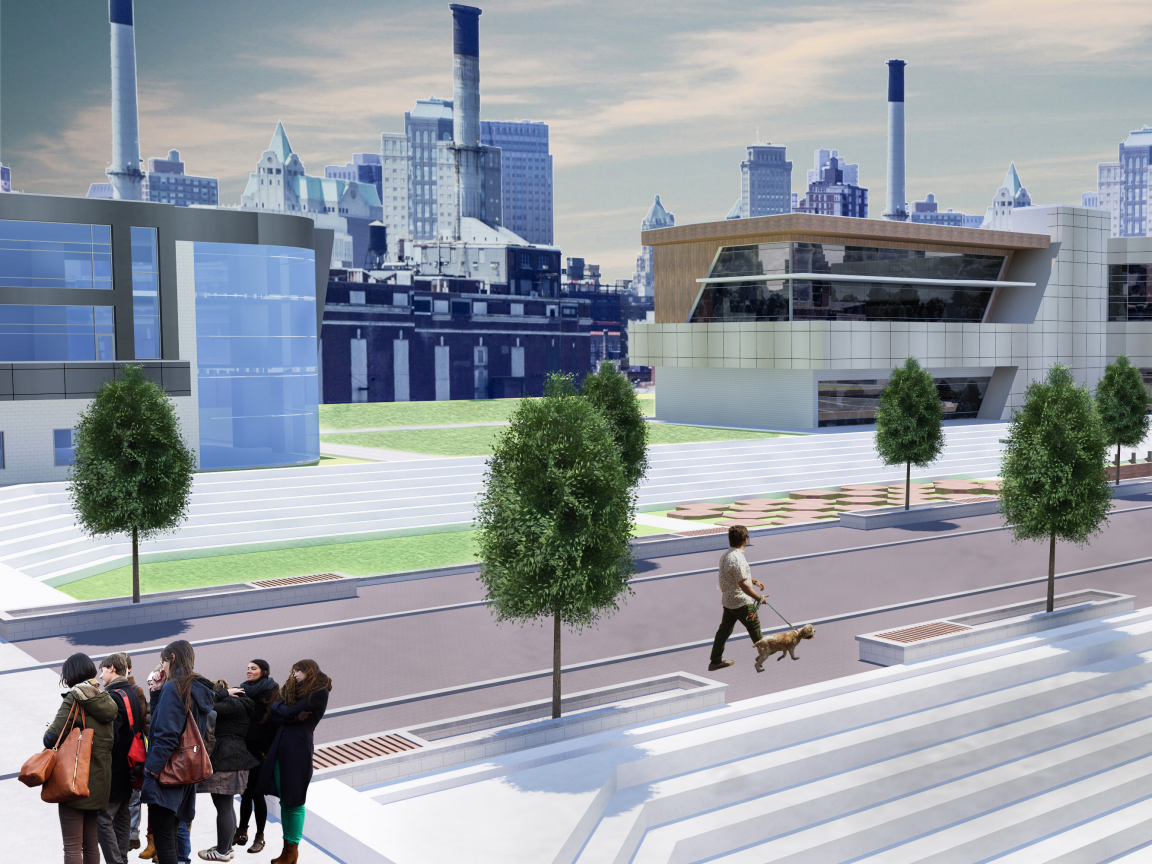




Once the stadium is converted there will be spots for the residence of the buildings to enjoy daily. It will create a place for people to gather within the city.

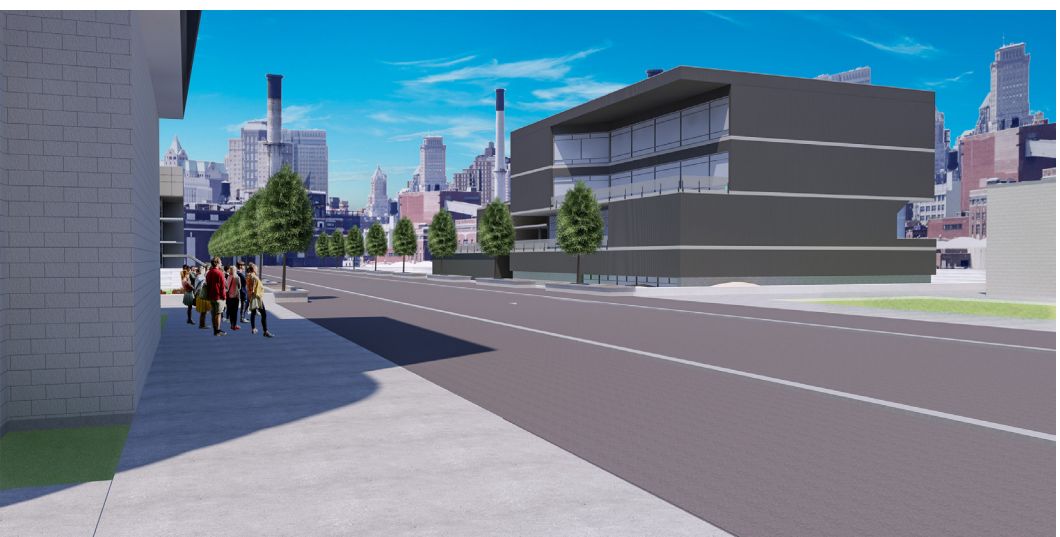
The additional program will then provide additional business within the space. The potential to turn into a central position for transportation could help the city as well.







The potential of these spaces are countless and can adapt to what the user needs at the time.



Conclusion

In conclusion to this thesis and its research, there needs to be a different way in which stadiums and arenas are designed in the future. The way in which they are being designed, used, and tossed away are not the most efficient, especially for the amount of money it cost not only to construct, but to operate too.

There are places that are already looking into different and new ways in which these venues should be designed. The guidelines and rules set forth in this thesis are by no means the perfect way to proceed. Yet, it is the beginning of the conversation to a potential new movement within not only the sports industry, but the architecture industry as well.

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Image Sources

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Bottom <https://happyinspain.com/en/place/torgovjy-tsen-tr-las-arenas/>

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Bottom <https://weburbanist.com/2014/07/17/casa-futebol-design-to-deploy-housing-in-world-cup-stadiums/>

Pg. 31 All Images <https://dc.curbed.com/2016/4/6/11371938/rfk-plans>

Pg. 32 Google Earth Pro

Pg. 39 <https://www.capitolcorridor.org/whats-new/golden1center/>

Pg. 40 https://wikivisually.com/wiki/Robert_F._Kennedy_Memorial_Stadium

Pg. 41 Top
Bottom <https://stadiumjourney.com/stadiums/mercedes-benz-stadium-atlanta-falcons/>

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Pg. 42 Top http://ballparkreviews.com/template2.php?in_name=RFK%20Stadium&in_city=Washington&in_state=District%20of%20Columbia

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Bottom Left <http://www.districtdetroit.com/news/detroits-new-little-caesars-arena-opens-today>

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