

AN URBAN SOCCER STADIUM FOR
WASHINGTON D.C.

An Urban Soccer Stadium for Washington D.C.
Buzzard Point, Washington, DC

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1. RFK Stadium From Washington Metro

ABSTRACT

AN URBAN SOCCER STADIUM FOR WASHINGTON D.C.

BY JOHN CHRISTOPHER ARD

Expansive parking lots, miles of asphalt, and traffic jams: this is what the modern sport stadia has come to represent. Does it have to be this way? What does the future of sport's stadia hold? Can we build a stadium that is better integrated to the community around it? The stadium must become a major urban element again and it must engage the urban context.

D.C. United, the most storied franchise in MLS history, needs a new home. Baltimore and other locations in Maryland would gladly welcome the Black-and-Red, but it is vital for them to remain within Washington, D.C. in a soccer specific stadium. An area of land on Buzzard Point has already been chosen for the future development of a new soccer specific stadium and is now waiting for city council approval.

This thesis aims to explore a new type of urban stadium and a new stadium type as a bicycle destination at Buzzard Point. To explore a new type of urban stadium, it is vital to investigate the site's present features as well as investigate the projected future infrastructure development and real estate growth on the site. These future developments must remain throughout the design process because they will one day make up the stadium's urban context.

ACKNOWLEDGEMENTS

This thesis is the culmination of my growth as a student that started at Texas Tech University and continued at the WAAC. The design freedom at the WAAC led to personal discovery and growth as a designer.

Two years ago I could not imagine myself sitting and writing the acknowledgements page for my thesis book. Two years ago I had never stepped foot inside of the WAAC. The WAAC will always have a special place in my heart. My friendships and experiences at the WAAC have molded me into the architect and person I want to become.

To my committee, Susan Piedmont-Palladino, Paul Kelsch, and Marcia Feuerstein. I could not have accomplished this without their guidance. All three brought something different to the table to help guide me along. Thank you for helping me see the big picture and thank you for inspiring me to put my best work forward.

To my family for always believing in me. You have taught me the importance of working hard and always giving one hundred and ten percent. Thank you for supporting and funding me while I chase my dreams.

“ALWAYS STAY TRUE TO THE VISION.”

BRIAN GREEN

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2. Aerial View of FedEx Field

INTRODUCTION

When did sport's stadia become suburban monuments? Why did the Fenway Parks and the Wrigley Fields of America get replaced with the FedEx Fields and AT&T Stadiums? Stadia are losing connections to the vibrancy and culture of the urban site. Suburban locations and acres of asphalt parking lots have killed the modern stadium experience.

Going to a live sporting event is meant to be a unique experience. There should be an entire range of experiences beyond just sitting in your seat and rooting for your favorite team. There is the pregame experience of traveling to the stadium. There is the tailgating experience. Then build up of walking into the stadium and navigating your way to your seat. There is the game experience of watching the event as adrenaline flows through your veins while you enjoy a hot dog with an adult beverage. Then finally there is the post game experience, the winning side or losing side exiting the stadium in unison while riding the post game high of the thrill of victory or the agony of defeat.

Each stadium has its own set of experiences that are a reflection of their urban context. The uniqueness of Fenway Park is a direct result of the surrounding Fenway Kenmore neighborhood in Boston and Fenway Park is a uniquely Boston experience. The goal of this thesis is to create a new urban soccer stadium for Washington, D.C. by reimagining what a stadium can be in the urban environment. This reimagination strives to create a distinctively D.C. soccer experience and push the boundaries of what a stadium can be as an urban bicycle destination.

D.C. UNITED AND A NEW STADIUM PROPOSAL

D.C. United is a professional soccer club in Major League Soccer (MLS) and has located in Washington D.C. since 1996. Currently the club plays their home games in the multi-purpose Robert F. Kennedy Memorial Stadium located along the Anacostia River. The current stadium is not suited for professional soccer and the club is in dire need of a soccer specific stadium. There have been numerous proposals for new stadium designs including a proposal for a stadium located on Poplar Point along the Anacostia River. Other proposals have suggested moving the team from Washington D.C. to Baltimore or moving the club to a location near the Washington Football Club's stadium in Landover, Maryland. However, keeping the winningest team in MLS history and the only Washington professional team (of the five major sports leagues) to win a championship in the last twenty years in the District is very important to the club as well as the city and fans.

The most recent proposal is located on Buzzard Point in the southwest quadrant of Washington, D.C. across from Nationals Park. This proposal aims to create a stadium district for bars, restaurants, and retail between the two stadiums. A vital component to this proposal is the creation of an M Street Streetcar line. This new transportation network will run north to south from Takoma to Buzzard Point and from Buzzard Point across the Anacostia River.

The redevelopment of the Frederick Douglass Memorial Bridge is also essential to new stadium district proposal. The new bridge proposal seeks make vehicular and pedestrian traffic safer. Another goal of the project is to promote multimodal forms of transportation as well as spur economic development along both sides of the Anacostia. Along with the redevelopment of the bridge is the creation of a new traffic oval on Buzzard Point that connects South Capitol Street, Potomac Ave, and Q Street SW.

MY FIRST D.C. UNITED GAME

D.C. UNITED VS LA GALAXY

SEPTEMBER 14, 2013

THE PRE-GAME

I was curious as to what my first DC United game experience was going to be like. I had been to many MLS games, but this was my first DC United game. I was told that United has some of the most passionate fan bases in all of MLS, and I was about to find out first hand.

We arrive at the stadium two hours before kick off. It was a 20-minute drive from Alexandria, Virginia to RFK Memorial Stadium. Traffic was unusually light on this Saturday afternoon, but the cars were lined up waiting to pay and enter the parking lots. The drive from the parking lot entrance to the actual parking area was a haul in and of itself.

I park on a grassy patch next to a large group of tailgaters. The smell of burning charcoal hung in the air and a series of sunshade tents dotted the parking lot. Kids and adults alike are playing pick up soccer games between parked cars using empty trashcans as goals. This is the ultimate pregame soccer experience.

Across the lot, there is a series of large tents and barbeque smokers. This was the Screaming Eagles fan club. This support group is at every home game and routinely travels to road games to support the team. The Screaming Eagles occupy a large portion of the parking lot grilling food and hanging out before the game.





MY FIRST D.C. UNITED GAME

D.C. UNITED VS LA GALAXY

SEPTEMBER 14, 2014

THE PROCESSION

The procession from the tailgating in the parking lot to our seats in the stadium is almost as eventful as the game itself. Fifteen minutes before kickoff everyone packs up their tents and barbeque grills. Like clockwork, the enormous crowd of supporters begins its march into the stadium. The large crowds converge together and are then funneled through one main entrance. The stadium's large concrete columns and walls block our view of the field. We are packed shoulder to shoulder as we shuffle into the stadium looking for signs to get to our seating section. The mood is tense when we finally reach the seating vomitory, and I can finally catch brief glimpses of the field.

We descend down to "the Nest" to sit with the rest of the Screaming Eagles supporters. Everyone is waving a DC United flag or banner and chanting, "D.C. UNITED!" This is the most die-hard fan section I have ever been a part of. Right before game time, the Barra Brava (the other DC United support group) band comes marching in and brings the entire fan section to their feet.





MY FIRST **D.C.** UNITED GAME

D.C. UNITED VS LA GALAXY

SEPTEMBER 14, 2014

THE IN GAME

The match kicks off and everyone is still standing and chanting. The Barra Brava band's drumbeat is growing progressively louder as DC United takes possession of the ball.

THE GALAXY SCORE! 4 minutes into the game. Unbelievable! The crowd goes silent.

37 minutes into the first half, the Black and Red finally have a break away. The cheers grow louder as they move closer to the goal.

He jukes! He scores!!!

The crowd goes ballistic! Smoke is in the air. Everyone's drinks go flying! The drumbeat is deafening; the entire fan section is jumping up and down; the Screaming Eagles hold up a banner so big it blocks out the sun for an entire seating section. The stadium is shaking from all the jumping.

All is calm until the 80th minute of the game. DC has a break away attempt. The crowd grows louder anticipating a score, BUT the LA keeper makes a tremendous save. The crowd is still loud even though LA regains possession of the ball.

LA SCORES! Oh no!

Silence.

83rd minute. GOAL!!!! IT'S NOW TIED!

The stadium is erupting in chaos! It's the loudest it's been all game.

OLAY! OLAY OLAY OLAY! OLAY!!!!

The game ends and the final score is D.C. United 2 LA Galaxy 2.



MY FIRST D.C. UNITED GAME

D.C. UNITED VS LA GALAXY

SEPTEMBER 14, 2014

THE POST GAME

The post game experience is not as great as the pre game and in game experiences. Everyone proceeds up the stairs to the exit to join the other fans making their way to the stadium exit. People are chanting, "D.C. UNITED!" but it does not have the same effect.

The post-game excitement and celebration is lost as soon as everyone is outside of the stadium. There is no post game destination except for the parking lot, and everyone is racing to beat the traffic. It is a very anticlimactic experience.

GAME THOUGHTS

The D.C. United game experience was a unique vibrant experience.

How does the parking lot tailgating experience translate to a new urban stadium? How does the stadium become more integrated to the surrounding site?

The space around the stadium can be designed for pre game tailgating events. The exterior stadium context, normally reserved for parking lots, can become more than empty space.

How does the pre game procession from the parking lot into the stadium translate to a new urban stadium?

How do you educate fans, old and new, about the history of D.C. United? When I attended the game I had no idea what the D.C. Hall of Tradition was or where it was located in the stadium.

CASE STUDIES

FENWAY PARK

JAMES McLAUGHLIN 1912

BOSTON, MA

Fenway Park is one of the most, if not the most, famous sporting venues in the United States. Unlike many modern day stadiums that are surrounded by acres of parking lots, Fenway is in the middle of Boston's Kenmore Square neighborhood. The stadium is a product of the surrounding neighborhood. The stadium blends in so well with the surrounding buildings that someone who has never visited the park might not notice it if they were standing next to it. It is perfectly scaled to its urban context.

Behind the Green Monster, structure from the famous wall is actually hanging over the sidewalk. Pedestrians end up walking underneath the stadium structure to enter. There is a bar located underneath the centerfield grandstands that is accessible to anyone. Pedestrians can wander inside without a ticket and catch glimpses of the baseball game. By allowing parts of the stadium to become part of the urban environment, the stadium forms a more meaningful relationship to its site.



3. Fenway Park



4. Fenway Park Lansdowne Gate



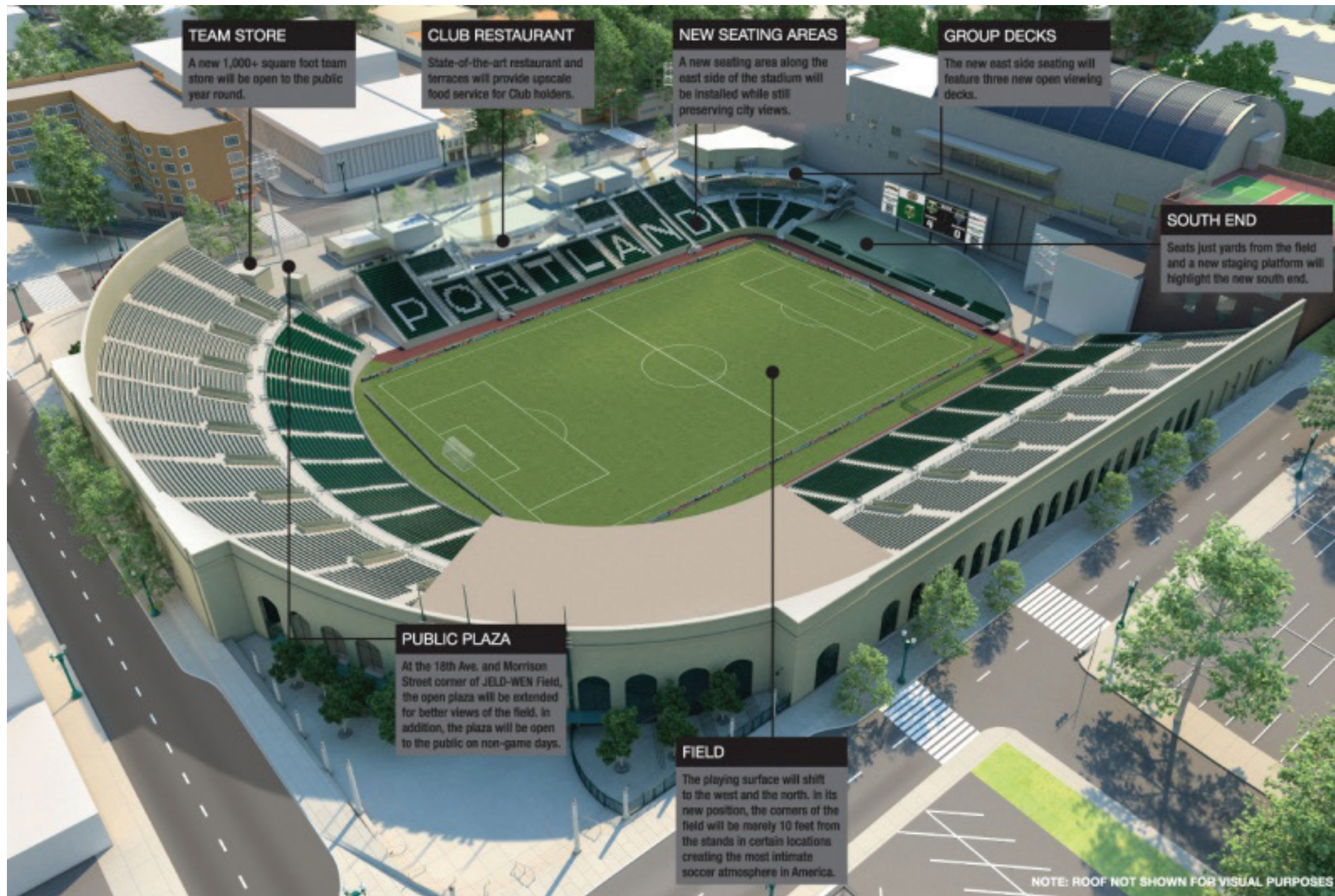
5. Fenway Park

CASE STUDIES

PROVIDENCE PARK 1926

PORTLAND, OREGON

Providence Park is home of the Major League Soccer team the Portland Timbers. Built in 1926, the stadium has a similar urban character as Fenway Park because it is also surrounded by a neighborhood instead of acres of parking lots. The park blends into the surrounding context just like Fenway Park. The park's seating elements are also sunken in allowing the field to be visible to everyone from the main course level. The sunken seating alignment is very important because it provides an open feeling in the concourse area. The park is a successful urban stadium case study because it is also located directly on the Red and Blue MAX lines and provides very little on site parking for cars.



6. Providence Park Diagram



7. Danish Pavilion at Shanghai Expo 2010



8. Danish Pavilion at Shanghai Expo 2010

CASE STUDIES

DANISH PAVILION AT SHANGHAI EXPO 2010 BIG 2010

SHANGHAI, CHINA

The Denmark Pavilion at the Shanghai Expo 2010 by BIG was designed to give people a chance to experience the Danish way of life. The pavilion is a giant loop where users can ride bicycles to “experience” the Danish lifestyle. The roof and interior are painted blue to delineate the bike lanes, while the exterior of the pavilion is perforated steel.

The Danish Pavilion provided a lot of inspiration for how bikes could interact with built structures and actually become part of the experience within the building. Visualizing bicyclists riding throughout the stadium became easier after analyzing the bicycle ramps of the pavilion.



9. Danish Pavilion at Shanghai Expo 2010



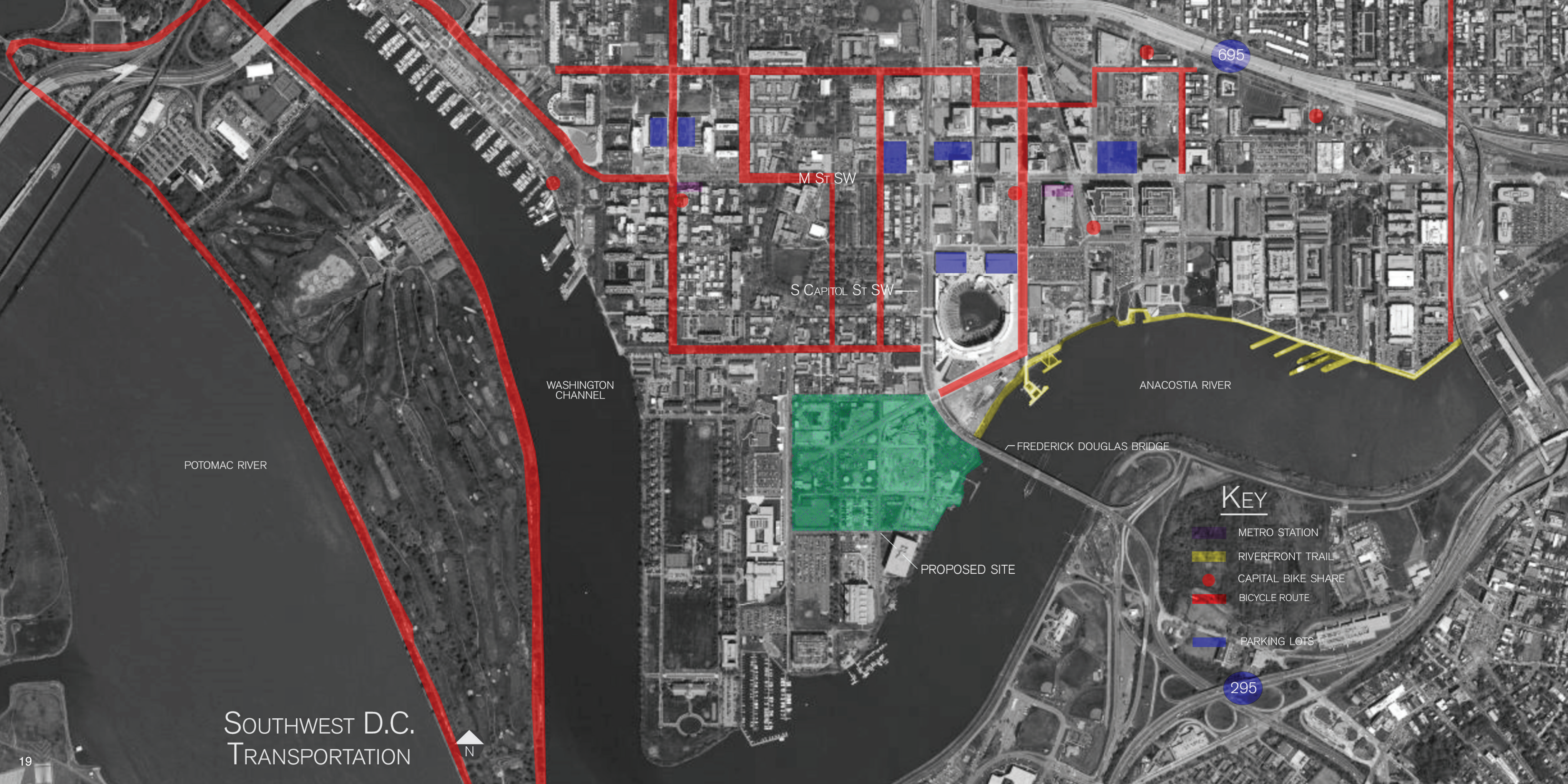
BUZZARD POINT SITE PLAN

SITE

THE PRESENT

For this stadium proposal, the site is located on Buzzard Point on the south side of R St SW extending to T St SW and is bordered by S Capitol St SE to the East and First St SW to the West. Sitting on land between the Washington Channel and the Anacostia River and sandwiched between the Southwest and Southeast Waterfronts, Buzzard Point remains one of the last undeveloped areas of Washington, D.C. It is home to Fort McNair on the west side and a series of scrap yards, industrial facilities, and a PEPCO power station on the east side.

Currently, the site cannot support a new soccer stadium or other economic developments because it is too remote. There needs to be a large infrastructure development to coincide with the stadium development. These infrastructure developments include a new streetcar line, an extension to the Anacostia Riverwalk, the creation of a new traffic oval at the end of S Capitol St SE, and a new Frederick Douglass Memorial Bridge.



POTOMAC RIVER

WASHINGTON CHANNEL

M ST SW

S CAPITOL ST SW

695

ANACOSTIA RIVER

FREDERICK DOUGLAS BRIDGE

PROPOSED SITE

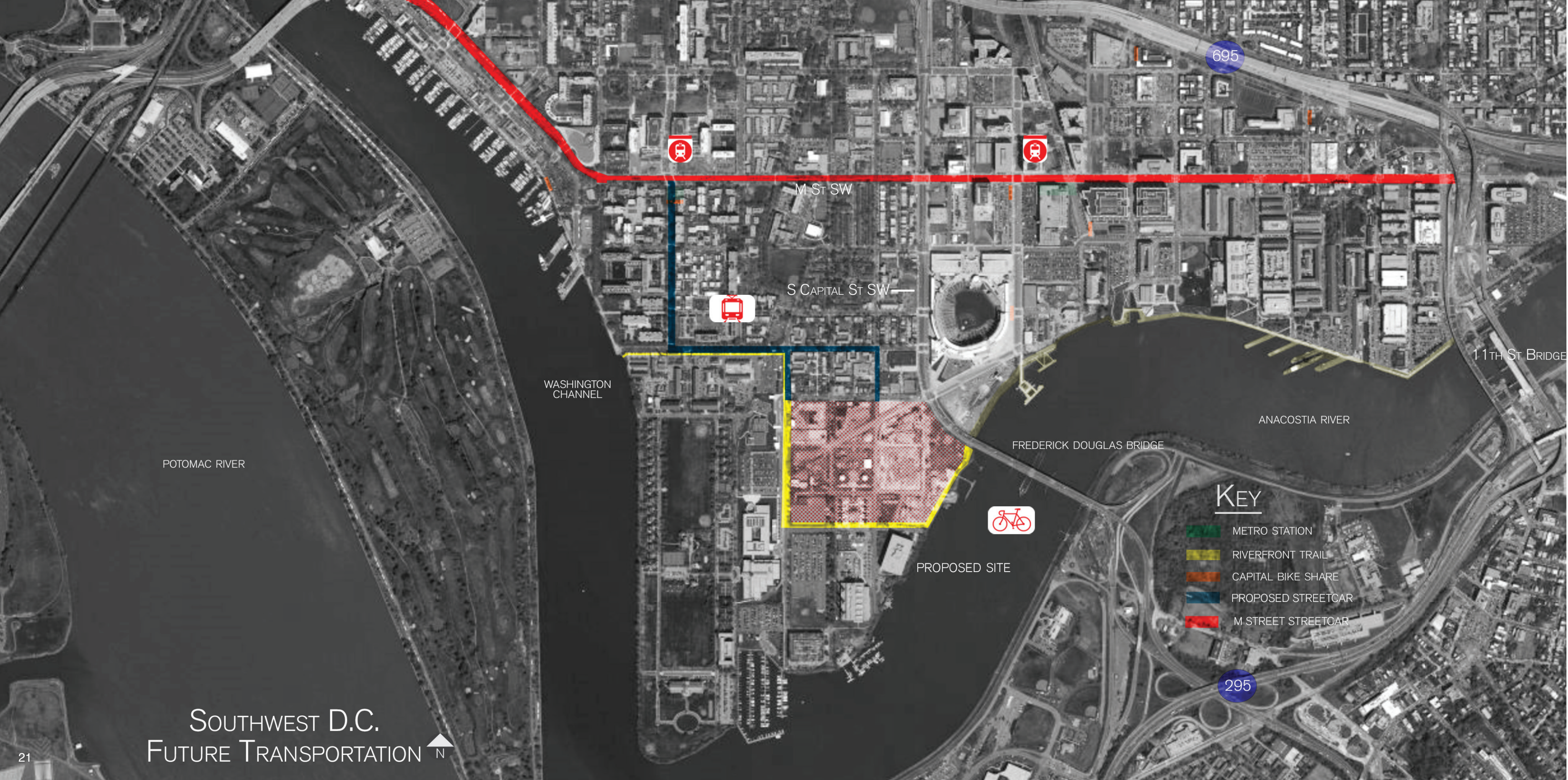
KEY

-  METRO STATION
-  RIVERFRONT TRAIL
-  CAPITAL BIKE SHARE
-  BICYCLE ROUTE
-  PARKING LOTS

295

SOUTHWEST D.C.
TRANSPORTATION





SOUTHWEST D.C.
FUTURE TRANSPORTATION 

695

295



M St SW

S CAPITAL ST SW

11TH ST BRIDGE

WASHINGTON CHANNEL

ANACOSTIA RIVER

POTOMAC RIVER

FREDERICK DOUGLAS BRIDGE

PROPOSED SITE

KEY

-  METRO STATION
-  RIVERFRONT TRAIL
-  CAPITAL BIKE SHARE
-  PROPOSED STREETCAR
-  M STREET STREETCAR

POTOMAC RIVER

WASHINGTON CHANNEL

ANACOSTIA RIVER

FORT MCNAIR

PROPOSED SITE

WASHINGTON NAVY YARD

FUTURE AND EXISTING RIVERFRONT DEVELOPMENTS IN BUSINESS IMPROVEMENT DISTRICT

KEY

-  MIXED USE
-  RESIDENTIAL
-  COMMERCIAL OFFICE
-  GREEN SPACE
-  GOVERNMENT
-  EXISTING
-  CAPITOL RIVERFRONT BID
-  CAPITOL RIVERFRONT TRAIL



VIEW DOWN Q STREET



INTERSECTION OF POTOMAC AVE AND R STREET



CORNER OF FIRST AND R STREET



VIEW DOWN S STREET



VIEW NORTH ALONG S STREET



CORNER OF S STREET AND FIRST ST SW



CORNER OF S AND S. CAPITOL ST SE



S. CAPITOL ST SE TOWARDS NATIONALS PARK



10. New Frederick Douglass Memorial Bridge



11. New Frederick Douglass Memorial Bridge



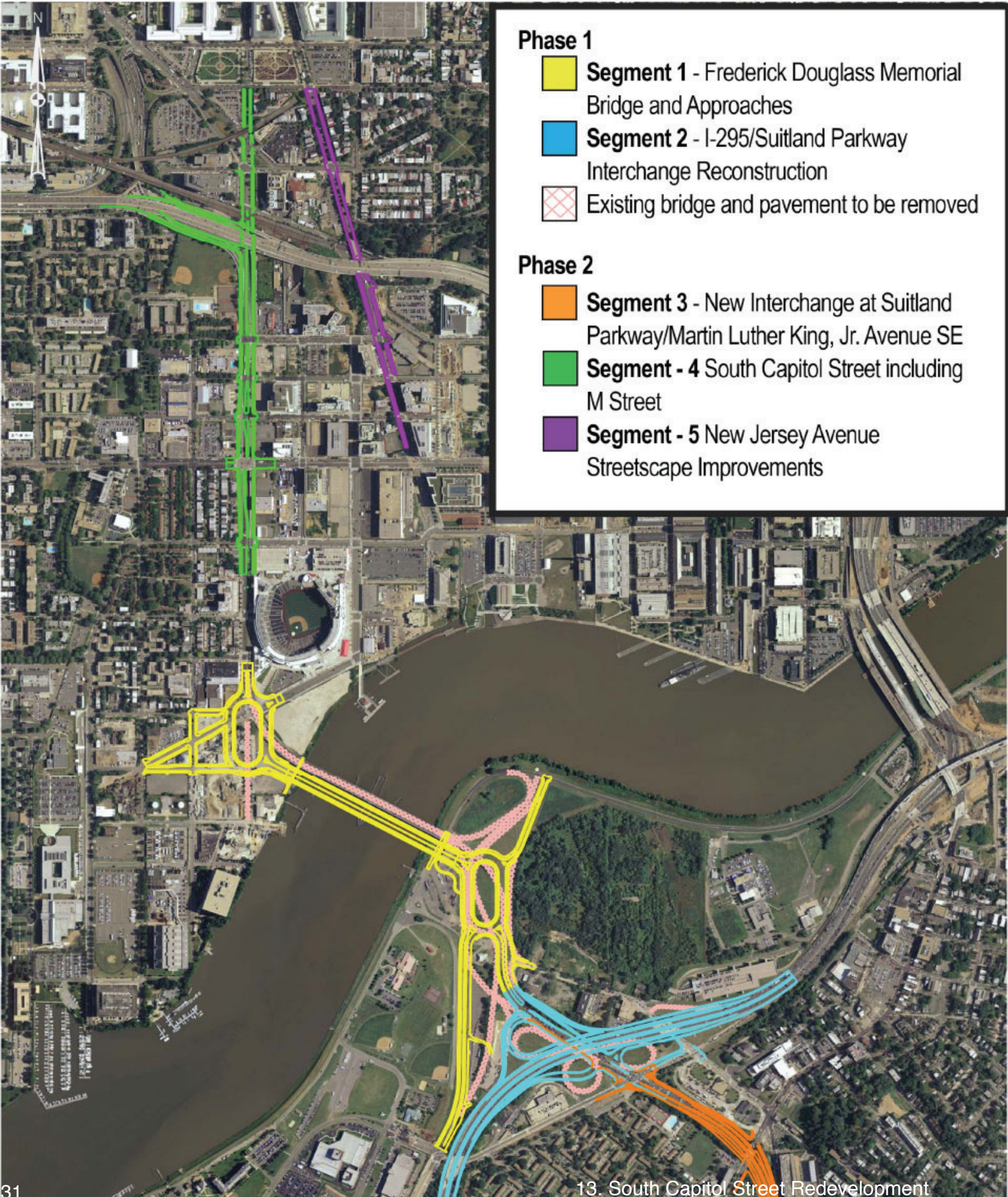
12. New Frederick Douglass Memorial Bridge

SITE

THE FUTURE SOUTH CAPITOL STREET CORRIDOR PROJECT

FREDERICK DOUGLASS MEMORIAL BRIDGE

Part of the South Capitol Street Corridor Project includes the redevelopment of the Frederick Douglass Memorial Bridge across the Anacostia River. This redevelopment is important because it is vital for increasing accessibility to the site. The current bridge is outdated and is not suited for pedestrians or bicyclists. The lanes are too narrow, traffic is traveling in excess of 50 mph, and the sidewalks are barely large enough for two people to walk on. The project calls for “transforming related sections of urban freeway into a beautiful scenic boulevard that increases pedestrian and vehicular safety, improves multi-modal transportation options, increases community accessibility and supports economic development on both sides of the Anacostia River.”



13. South Capitol Street Redevelopment

SITE

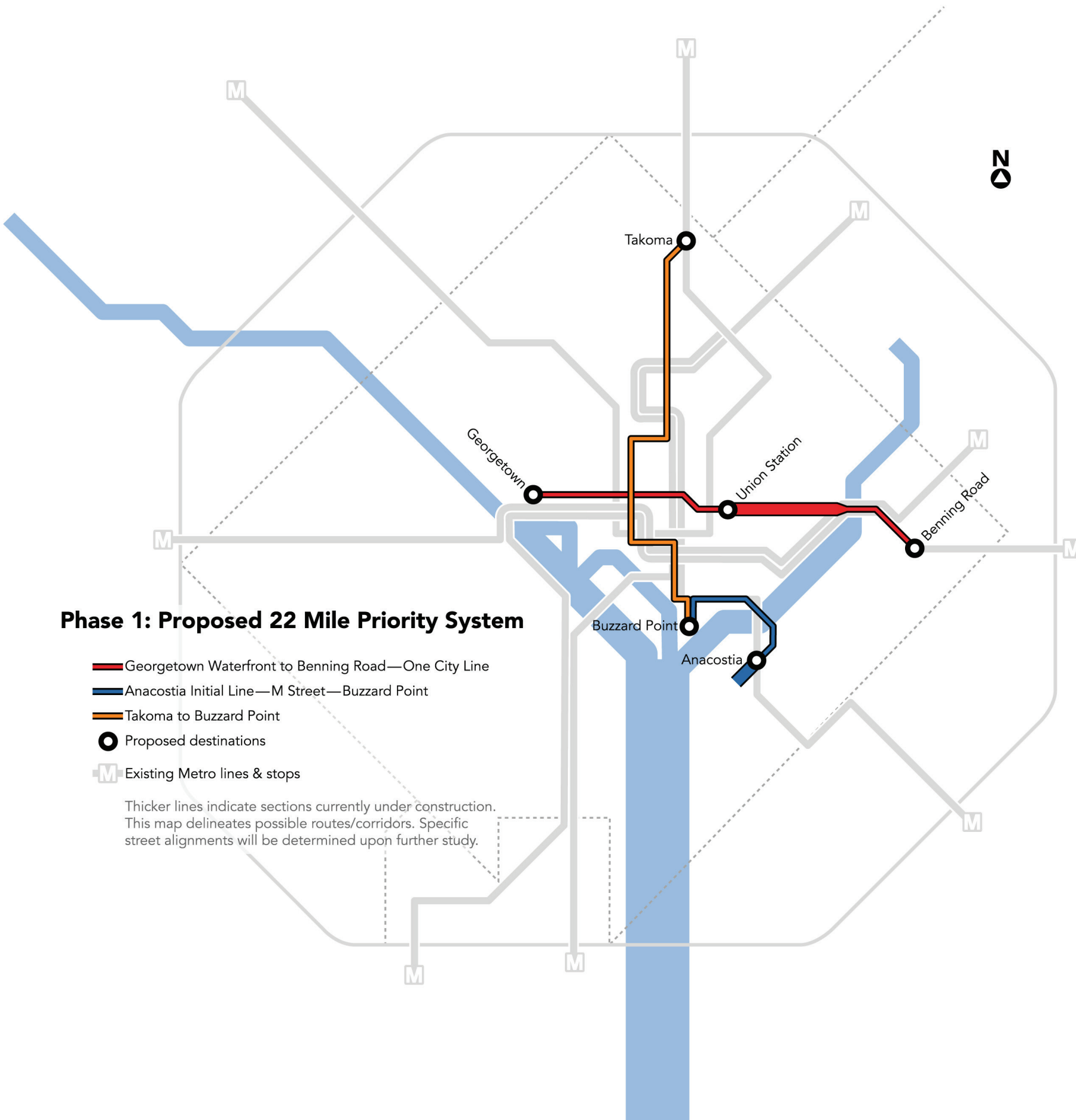
THE FUTURE SOUTH CAPITOL STREET CORRIDOR PROJECT

TRAFFIC OVAL CONSTRUCTION

In addition to the redevelopment of the Frederick Douglass Memorial Bridge, the South Capitol Street Corridor Project includes the construction of a traffic oval on Buzzard Point connecting South Capitol Street Potomac Avenue and Q Street SW. The addition of a traffic oval at the end of South Capitol Street is important to increasing the walkability of the area because it will slow down vehicular traffic coming across the river. This location at the end of South Capitol Street has also been identified by the NCPC as one of the top ten Prime Sites for a new memorial. According to the NCPC, "new museums and memorials should serve as catalysts for economic development and for public and private urban design improvements." Having a new traffic oval and memorial across the street from Nationals Stadium and the site of the new soccer stadium will help create the walkable stadium district that D.C. United desires.



14. South Capitol Street Redevelopment



15. Washington D.C. Proposed Street Car System

SITE

THE FUTURE M STREET SE/SW TRANSPORTATION

STREETCAR INFRASTRUCTURE

Transportation infrastructure development along M Street is very important to the development of a new soccer stadium because it would increase multi-modal forms of transportation. New infrastructure developments would include a streetcar line connecting Buzzard Point to other parts of the District, as well as better integrating bicycle and pedestrian traffic with vehicular traffic along M Street.

The development of a streetcar system connecting Buzzard Point to other parts of the District is the single most important infrastructure development to the creation of a new soccer stadium. The first of the proposed streetcar lines travels from Takoma to Buzzard point, and the second proposed line travels from Buzzard Point down M Street and crosses the Anacostia River to Anacostia. The streetcar system is important for connecting the stadium to the Waterfront metro (1 mile walk) and the Navy Yard Metro (.6 mile walk).

The current route for the streetcar proposal is undetermined, but for this thesis, the route will come down 2nd St SW, across R St SW, go around the traffic oval, and travel back up S Capitol St SW. This route will provide for the best coverage of a Buzzard Point stadium.

SITE

THE FUTURE

M STREET SE/SW TRANSPORTATION

BICYCLE INFRASTRUCTURE

Besides implementing a new streetcar system, improvements to bicycle infrastructure is very important to the development of a new soccer stadium. Current bicycle infrastructure throughout the Southwest Waterfront, the Navy yard, and Buzzard Point is insufficient and at some points nonexistent. According to the M St SE/SW Transportation Study funded by the District Department of Transportation, general barriers to bicyclists include: “inadequate space for bicycling on streets, a lack of visible bicycle facilities on many roadways, complex intersections with vehicles turning, conflicts with parked vehicles, no accommodation of Metrorail, and unmarked bicycle routes.” An analysis of the DC bicycle lanes map on the DDOT website shows a glaring lack of dedicated bicycle lanes in and around the Buzzard Point neighborhood. Many of the bicycle routes shown are for signed routes and include riding on sidewalks. Dedicated bicycle lanes and improvements to bicycle facilities are important if Washington, D.C. is to grow as a bicycle friendly city.

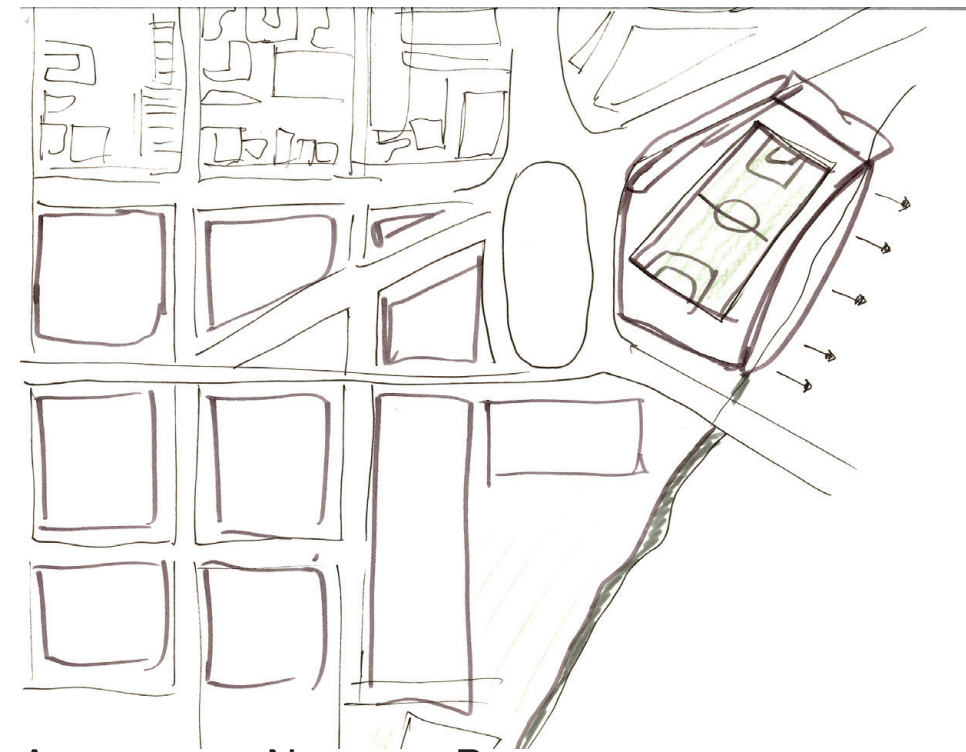
The M St Transportation Study includes a list of future improvements that can be made to bicycle infrastructure. These improvements include:

- Completing and connecting existing bike lanes
- Building dedicated bike lanes on M Street
- Expanding the bicycle lane network to include the Buzzard Point neighborhood

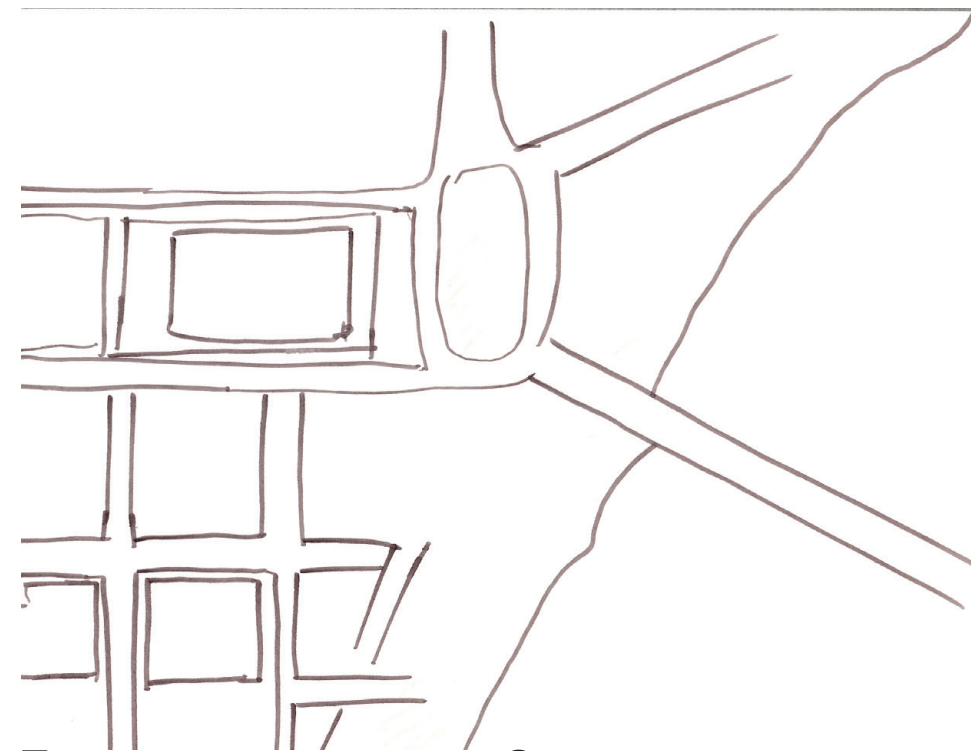
In addition to bicycle lanes and other infrastructure improvements, Capital Bikeshare is vital to the growth of bicycle ridership in Washington, D.C. In 2012, Washington, D.C. was ranked 4th best bicycle friendly cities by bicycling.com . From 2007 to 2010 bicycle ridership increased 80 percent. In each of the last three years Capital Bikeshare ridership has grown and is continuing its upward trend . Bike trips have doubled since 2010 and there are plans for 40 more bike stations. There is a clear demand for more bicycle infrastructure facilities in the District.



ORIGINAL PROPOSED LOCATION



ACROSS FROM NATIONALS PARK



TO THE LEFT OF THE TRAFFIC OVAL

SITE

SITE SELECTION

LOCATION PROPOSED BY D.C. UNITED

Before settling on the final stadium site, there were three different site scenarios that were explored.

1. Original location proposed by D.C. United
2. To the left of the traffic oval
3. Across from National's Ballpark along the waterfront

The original location proposed by D.C. United is located to the southwest of the future South Capitol Street traffic oval. This location has the advantage of being connected to the future DC street car line, future bicycle lanes, and having a connection to the Anacostia River and the Riverwalk trail. This site also allows for the visual connection inside the stadium with Nationals Park and the future monument in the traffic oval.

The next stadium site explored was directly to the left of the future South Capitol Street traffic oval. This site has the advantage of being close to the future proposed D.C. street car line and also the future bicycle lanes. Of the three sites explored, this site had the closest connection to the neighborhood north of Buzzard Point. A major disadvantage of this location is the actual size of the site. It is smaller than the site proposed by D.C. United and would have trouble accommodating a stadium with a capacity of 25,000 people.

The final stadium site explored was directly across from Nationals Park. This site has the advantage of being close to the Navy Yard Metro Stop and having a stronger connection with the Navy Yard neighborhood. By being located directly next to Nationals Park, it allows for the creation of a true stadium district. This district could help foster more commercial and economic growth within the neighborhood. This site would allow easy access and use of the parking facilities at and surrounding Nationals Park. Of the three sites explored, this site was the smallest. A stadium would not fit on the land as is and would require a significant build up of land in the Anacostia River.



DESIGN

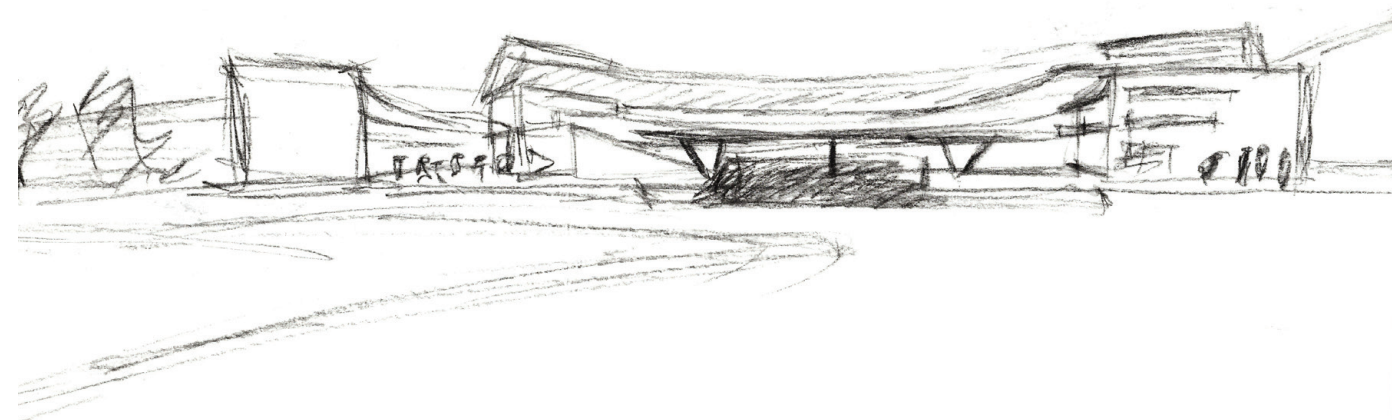
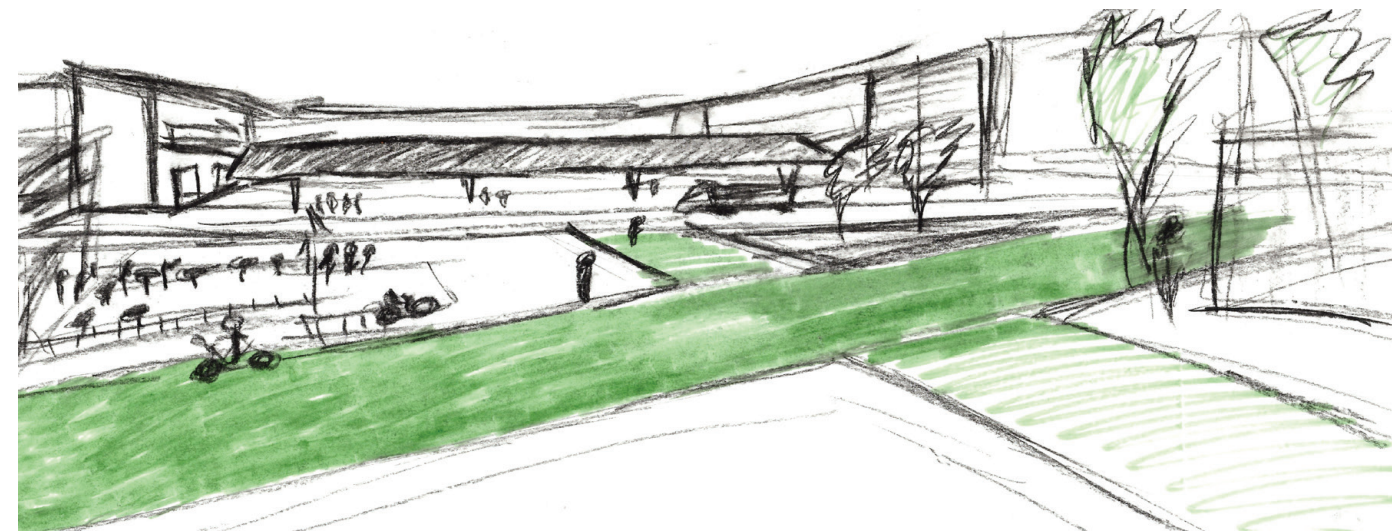
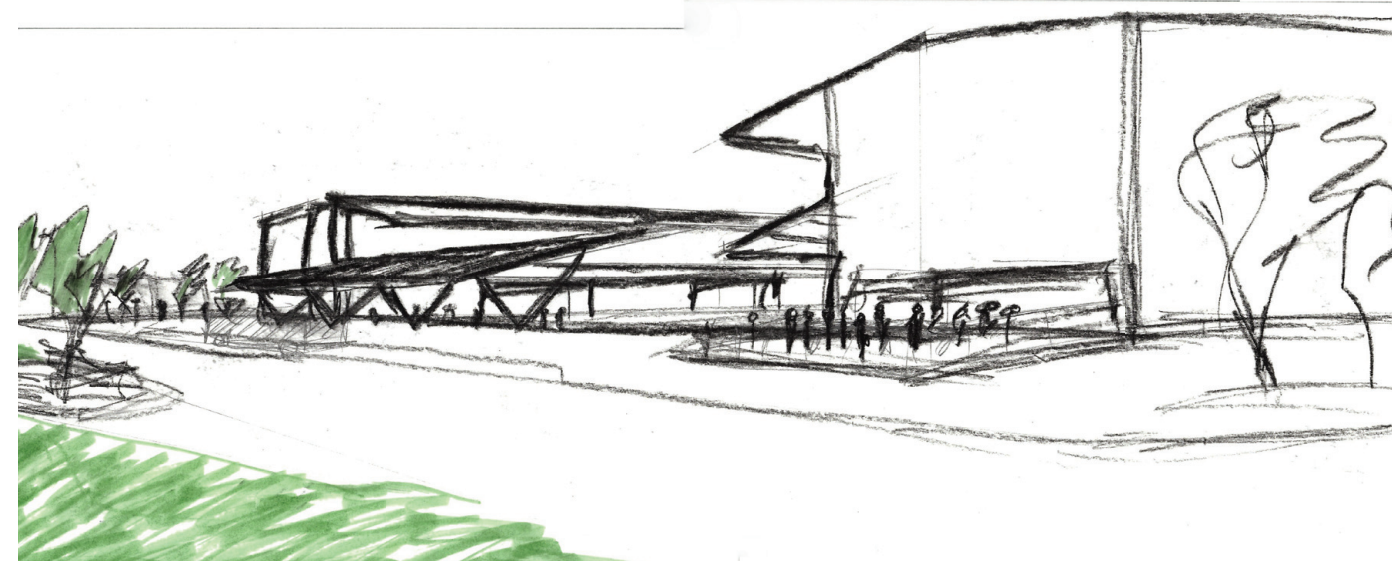
SITE SELECTION

FINAL SITE

The final site selected is located within the proposed site by D.C. United. Of the four options explored, this site provided the best location along future bicycle routes, future street car routes, and a provided for a stronger connection to nature and the city. The proposed street car line runs along the street to the north of the stadium. Future proposed bike lanes also follow this same path. This site also allows for an extension of the Anacostia River Walk. The River walk winds and follows the path of the one hundred year flood plane. The trail will be built up and elevated to help protect against rising flood waters. There is also enough space between the stadium site and the river to allow for passive recreation space along the Anacostia River.

Unlike RFK Stadium, the stadium is not located directly on axis with the United States Capitol. The future monument located within the future traffic oval at the end of South Capitol Street will serve as the terminal point for the axis.

This location is also close enough to Nationals Stadium keep the idea of the "stadium district" in tact. This stadium district idea strengthens the idea of people choosing alternative forms of transportation.



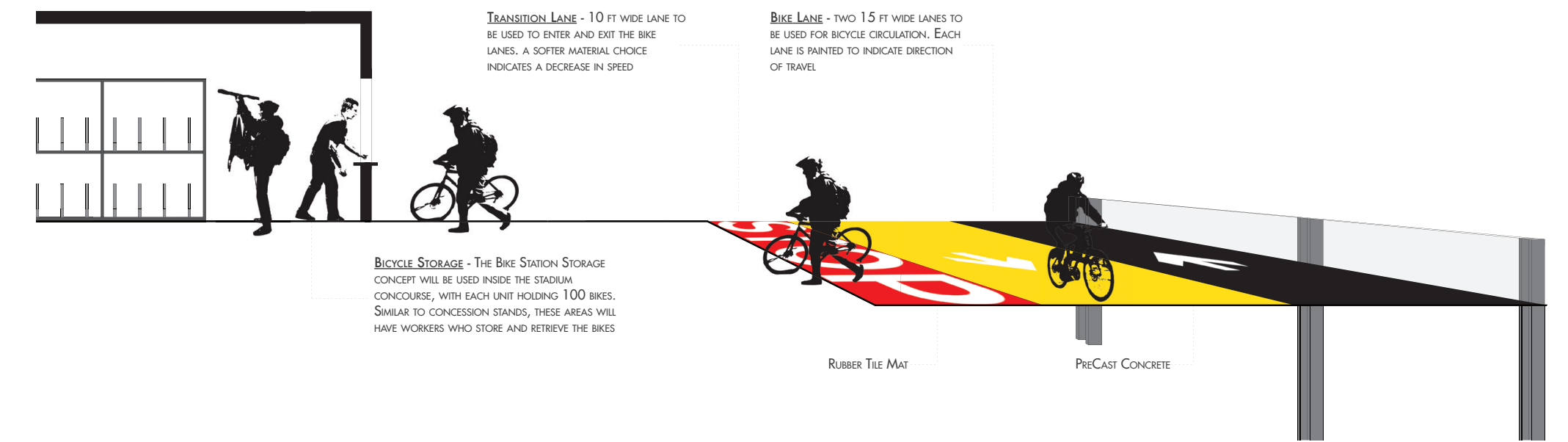
DESIGN

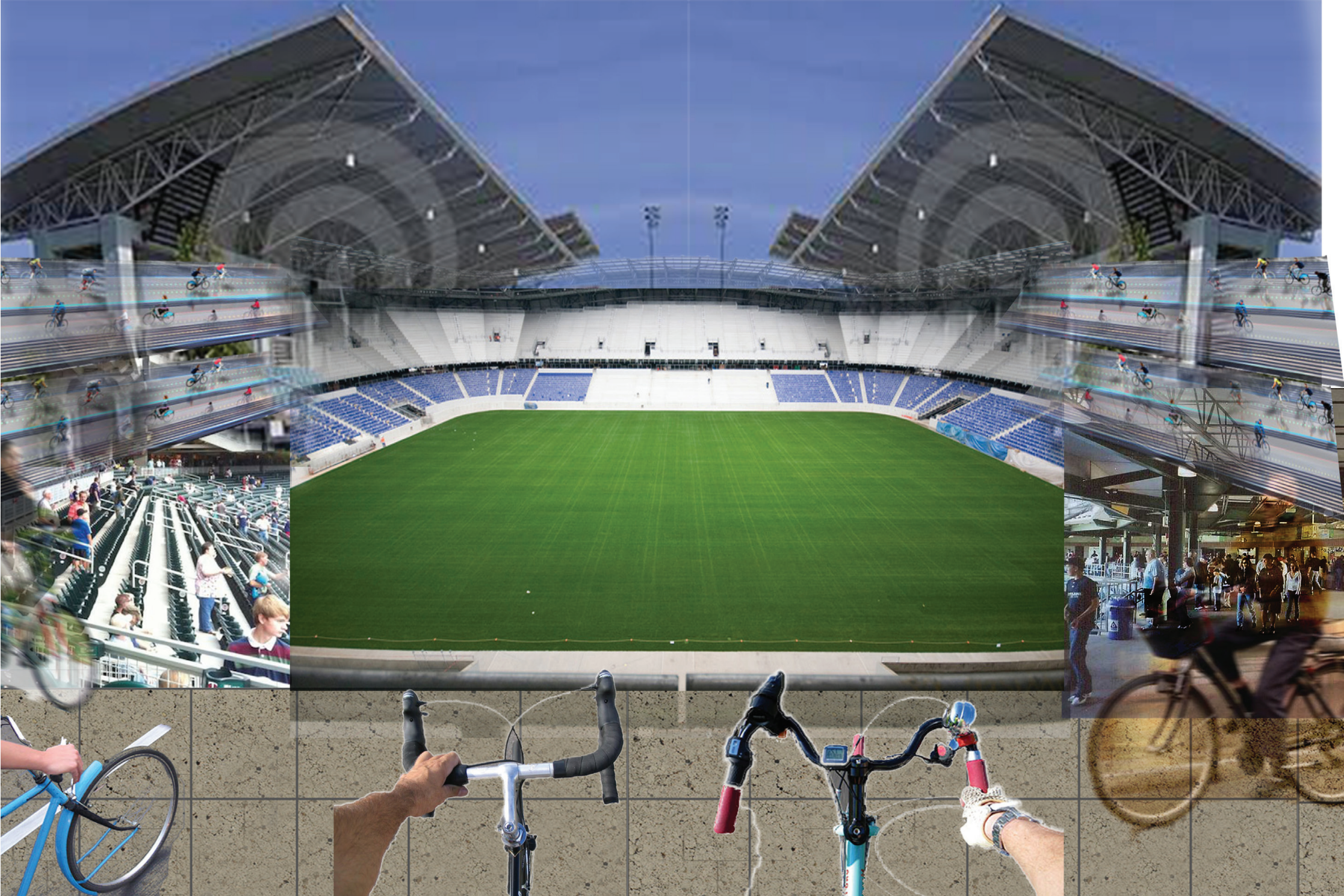
DESIGN DEVELOPMENT

OBJECTIVES

Before preliminary design began, a few objectives were decided based on site and case study research. These objectives were:

- Limit vehicular parking and focus on alternative forms of transportation with special emphasis on bicycles as the main form of transportation to and from the stadium.
- Utilize a horseshoe stadium shape to allow for a visual connection to the future monument and Nationals Park. The horseshoe shape also allows pedestrians on R St to have a view of the field.
- Emphasize bicycle connections to existing and future bicycle infrastructure surrounding the site
- The field level will be at least 20 feet below grade. This will allow lower level seating to be sunken and allow pedestrians and those outside of the stadium to have glimpses of the fan experience inside the stadium.





DESIGN

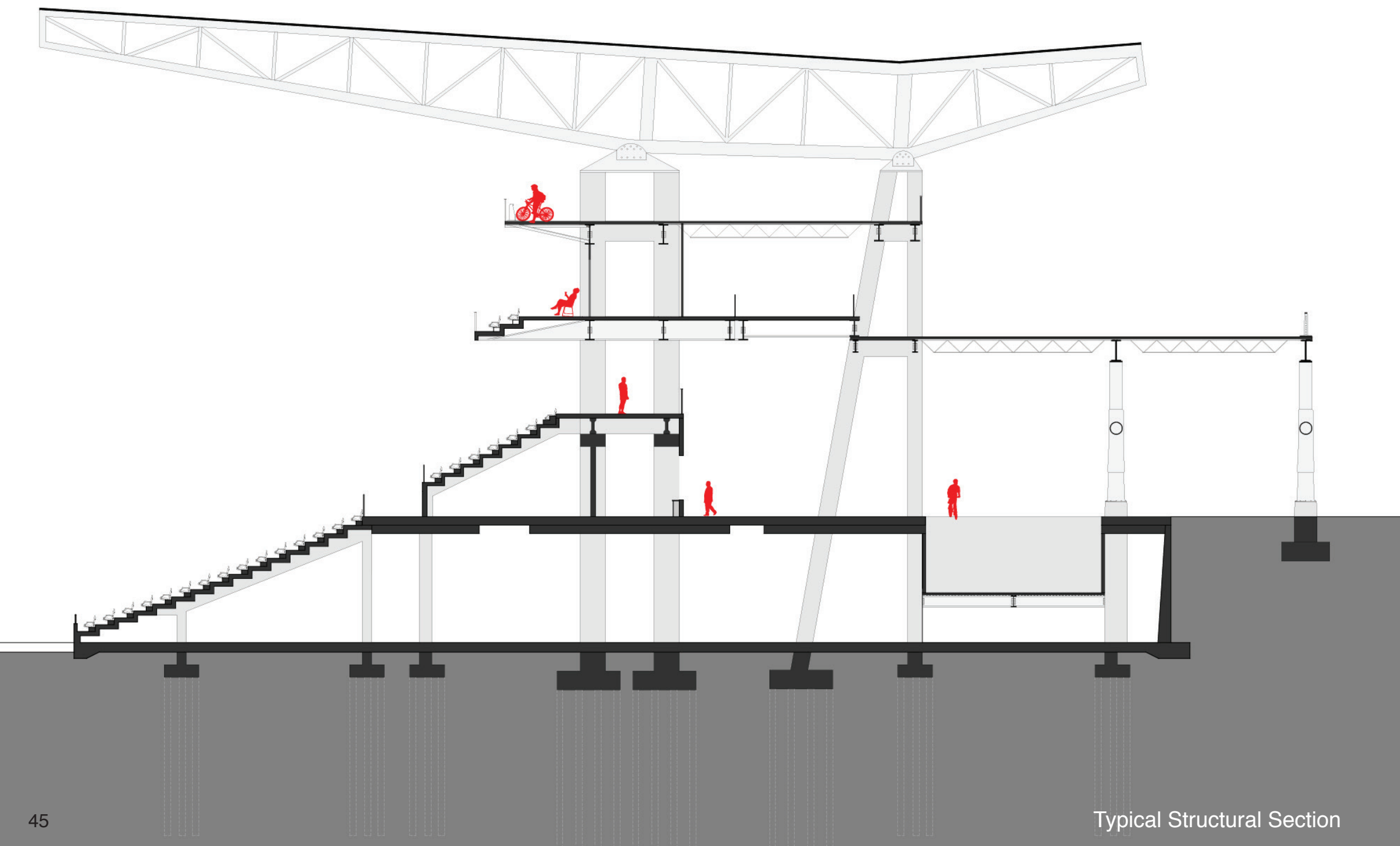
DESIGN DEVELOPMENT

THE SECTION

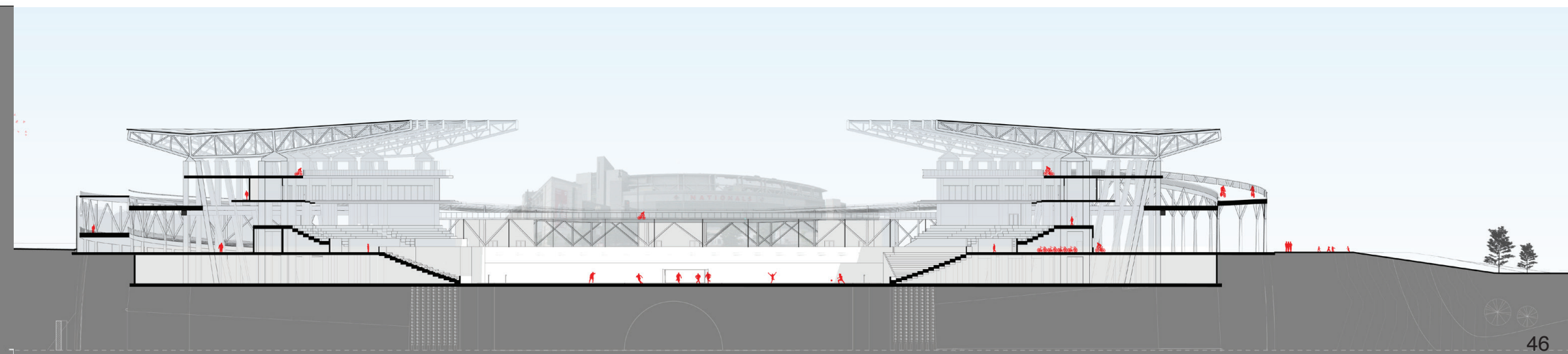
The design of the section is very important to the design of the stadium as a whole. Stadia, especially for soccer or football, are repetitive buildings because they are usually round or elliptical in shape. In this thesis, once the section design is finalized, it can then be replicated around as series of bays around the stadium footprint.

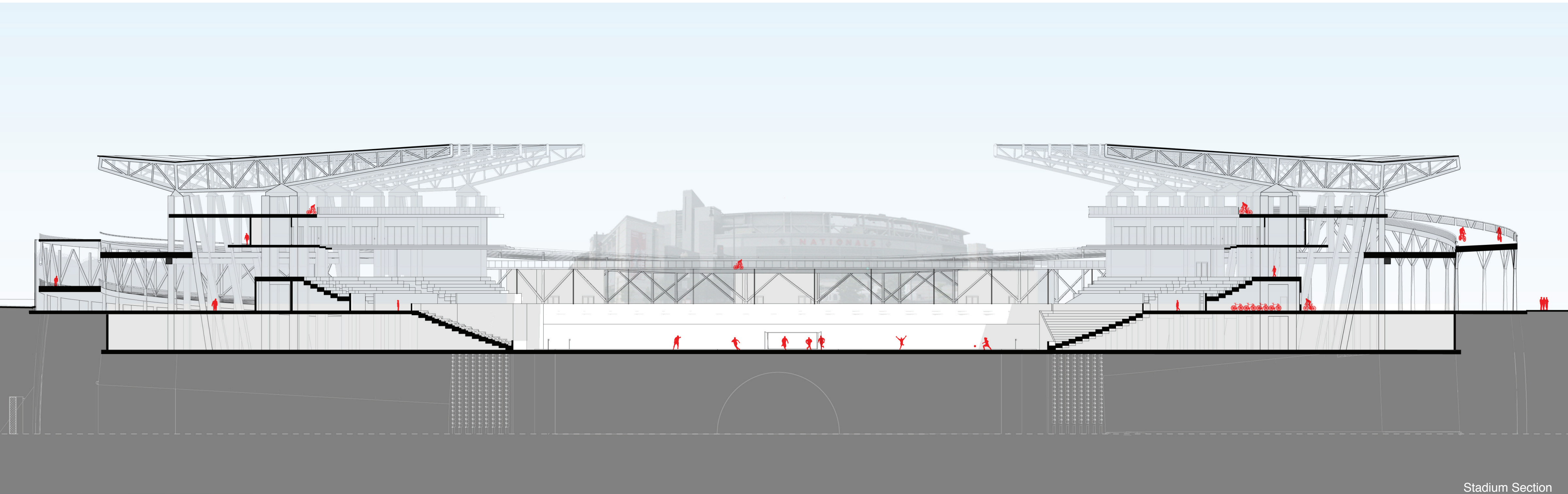
Emphasizing bicycles as the main form of transportation to and from D.C.'s new urban soccer stadium provides for interesting design questions relating to pedestrians, bicycles, and how the two interact with each other. This separation of the pedestrian creates numerous design opportunities and chances to explore the question of: when does a bicyclist become a pedestrian?

The size of the stadium section will need to be doubled to accommodate the number of bicyclists riding into the stadium. Normal sport's stadia concourses only have to be wide enough to accommodate a sell out crowd. To accommodate a sell out crowd of bicyclists and non-bicyclists, the design will need to allow for large crowds of bicyclists and non-bicyclists.



Typical Structural Section





Stadium Section

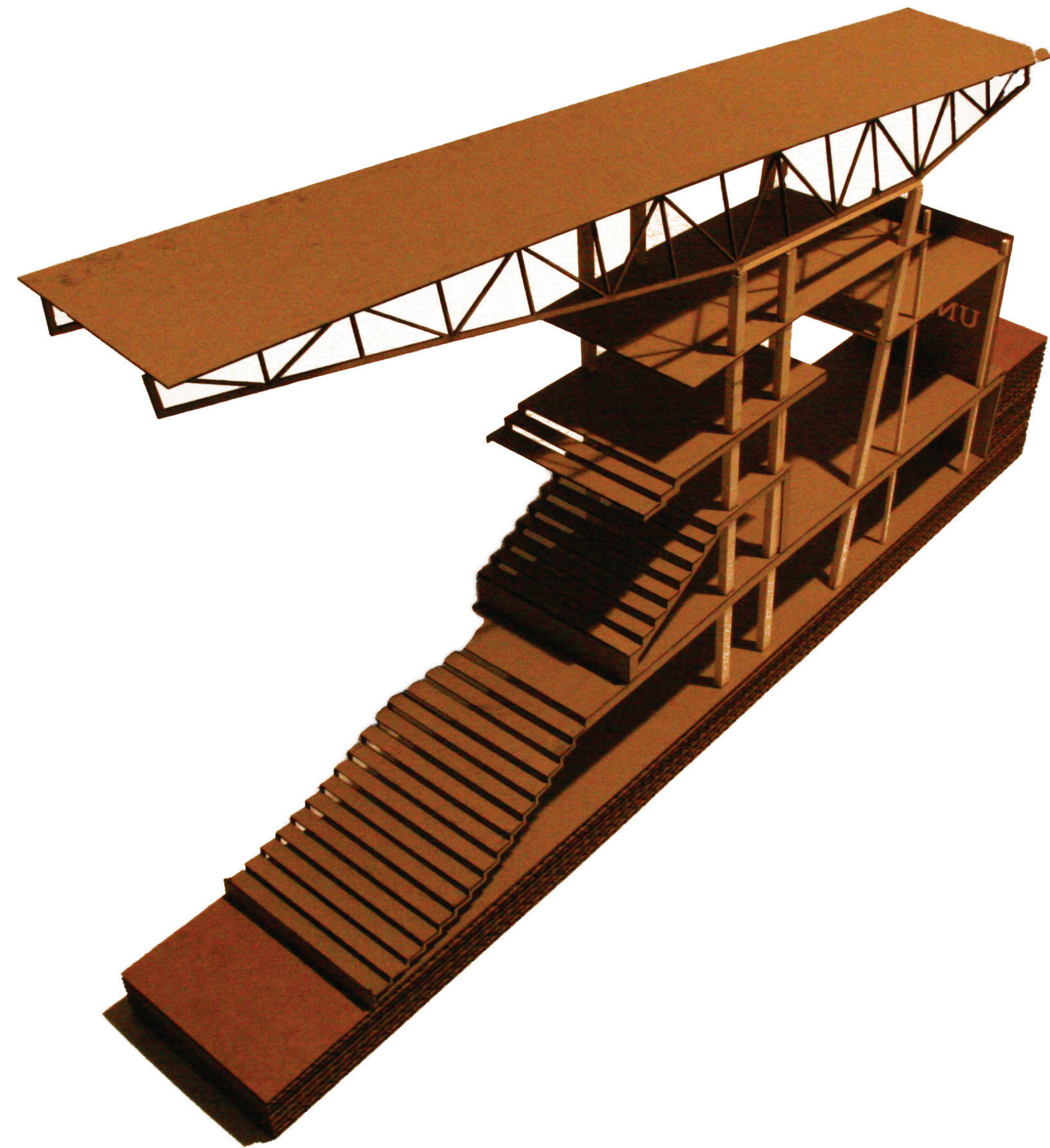
DESIGN

THE STRUCTURE

In creating the structure system of the stadium, it was important to delineate between the 'heavy' structure of the stadium and the 'lighter' structure of the surrounding ramps. This delineation serves to separate the heaviness of the game experience and the lightness of the bicycle.

The structure system of the stadium is concrete columns and steel roof trusses. Each structural section of the stadium consists of two 4x4 concrete columns. These columns act as the main structure system holding up the roof trusses and seating levels. The columns are spaced 12 feet on center in each section and would be poured together to create a "Wall-umn". The 8 foot spacing in between the two columns would be used for concessions, bathrooms, and bicycle storage. These "Wall-umns" are spaced 30 feet on center to create 26 foot bay. Each bay alternates uses between concession stands, bathrooms, and bicycle storage.

The structure of the bicycle ramps wrapping around the stadium is lighter, both physically and visually. The bicycle ramps are made of concrete and metal decking and are supported by branched steel HSS columns with large concrete footings. The columns form a Y shape that go through the decking and concrete to form the ramp railings.

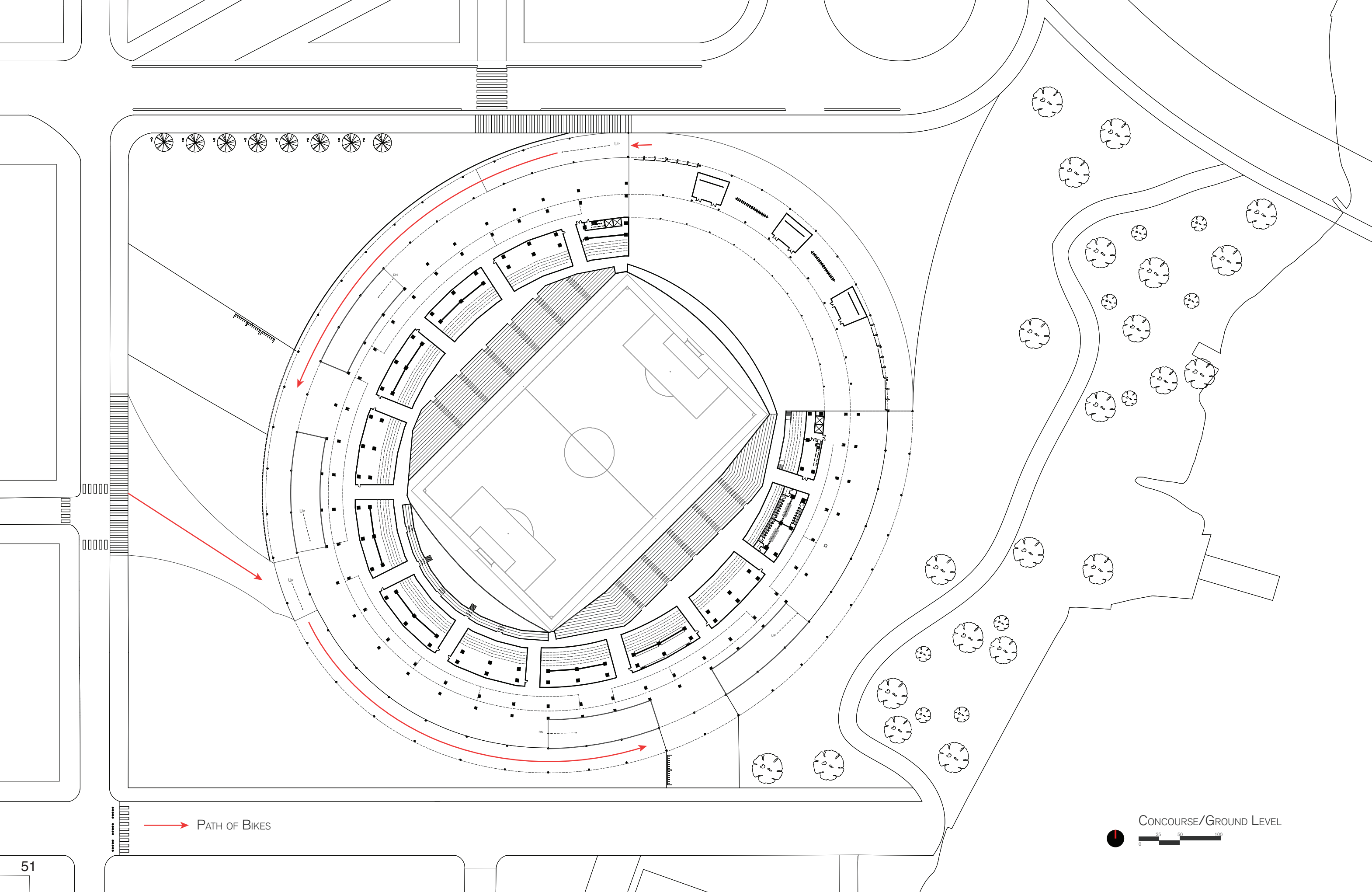


STADIUM

THE GROUND LEVEL

The stadium footprint is an elliptical shape surrounding the field. This elliptical shape is the best shape to efficiently add bicycle ramps at a safe slope. A large elliptical footprint allows for large gently sloped ramps to fit around the stadium site. The elliptical shape is also best for repeating the section.

The seating elements stop and the stadium opens up to face the new traffic oval, future monument site, and Nationals Stadium. This creates a relationship between the two stadiums and helps foster the idea of a 'stadium district'.

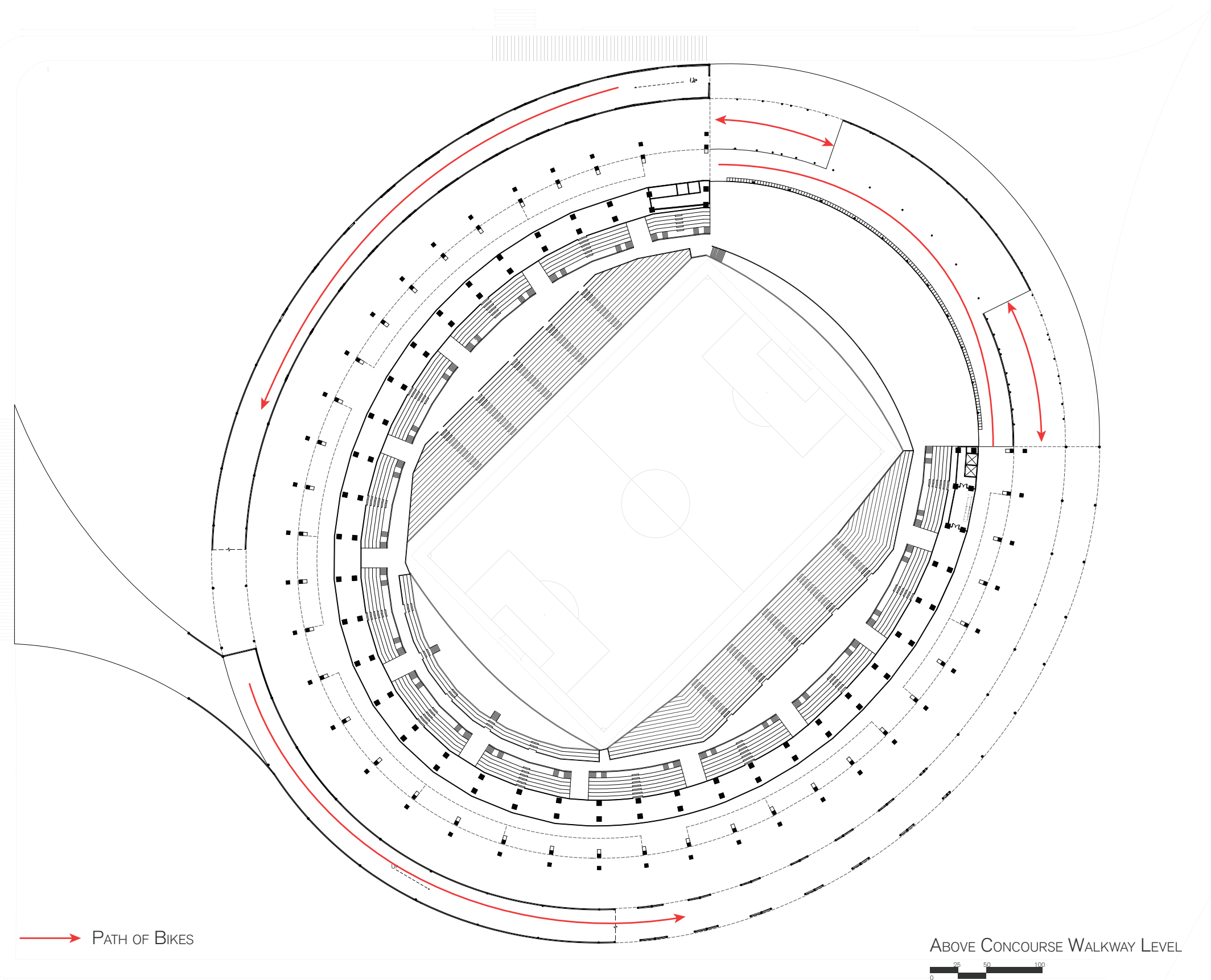


STADIUM

THE ABOVE CONCOURSE LEVEL

The stadium footprint is an elliptical shape surrounding the field. This elliptical shape is the best shape to efficiently add bicycle ramps at a safe slope. A large elliptical footprint allows for large gently sloped ramps to fit around the stadium site. The elliptical shape is also best for repeating the section.

The seating elements stop and the stadium opens up to face the new traffic oval, future monument site, and Nationals Stadium. This creates a relationship between the two stadiums and helps foster the idea of a 'stadium district'.

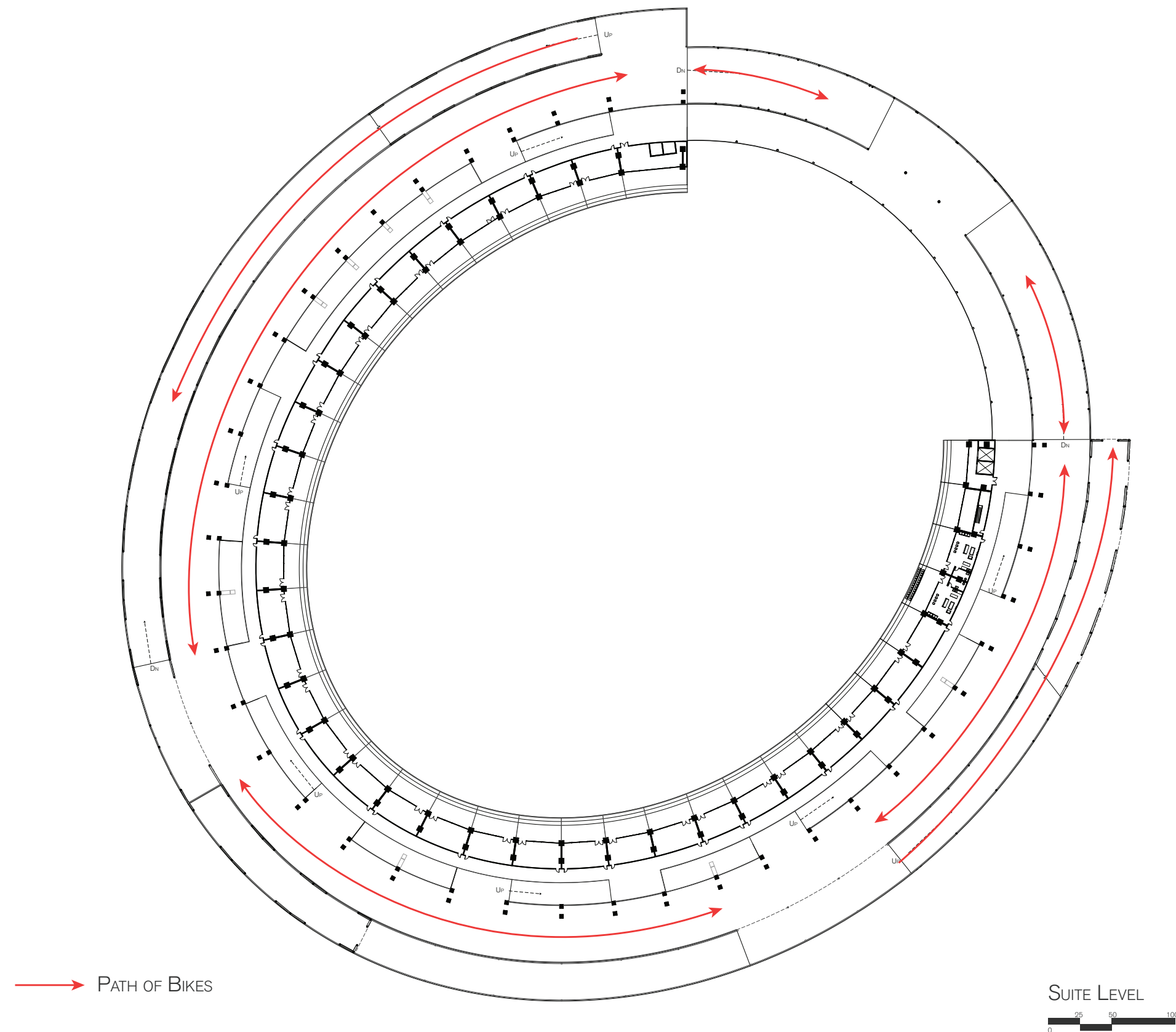


STADIUM

THE SUITE LEVEL

The stadium footprint is an elliptical shape surrounding the field. This elliptical shape is the best shape to efficiently add bicycle ramps at a safe slope. A large elliptical footprint allows for large gently sloped ramps to fit around the stadium site. The elliptical shape is also best for repeating the section.

The seating elements stop and the stadium opens up to face the new traffic oval, future monument site, and Nationals Stadium. This creates a relationship between the two stadiums and helps foster the idea of a 'stadium district'.

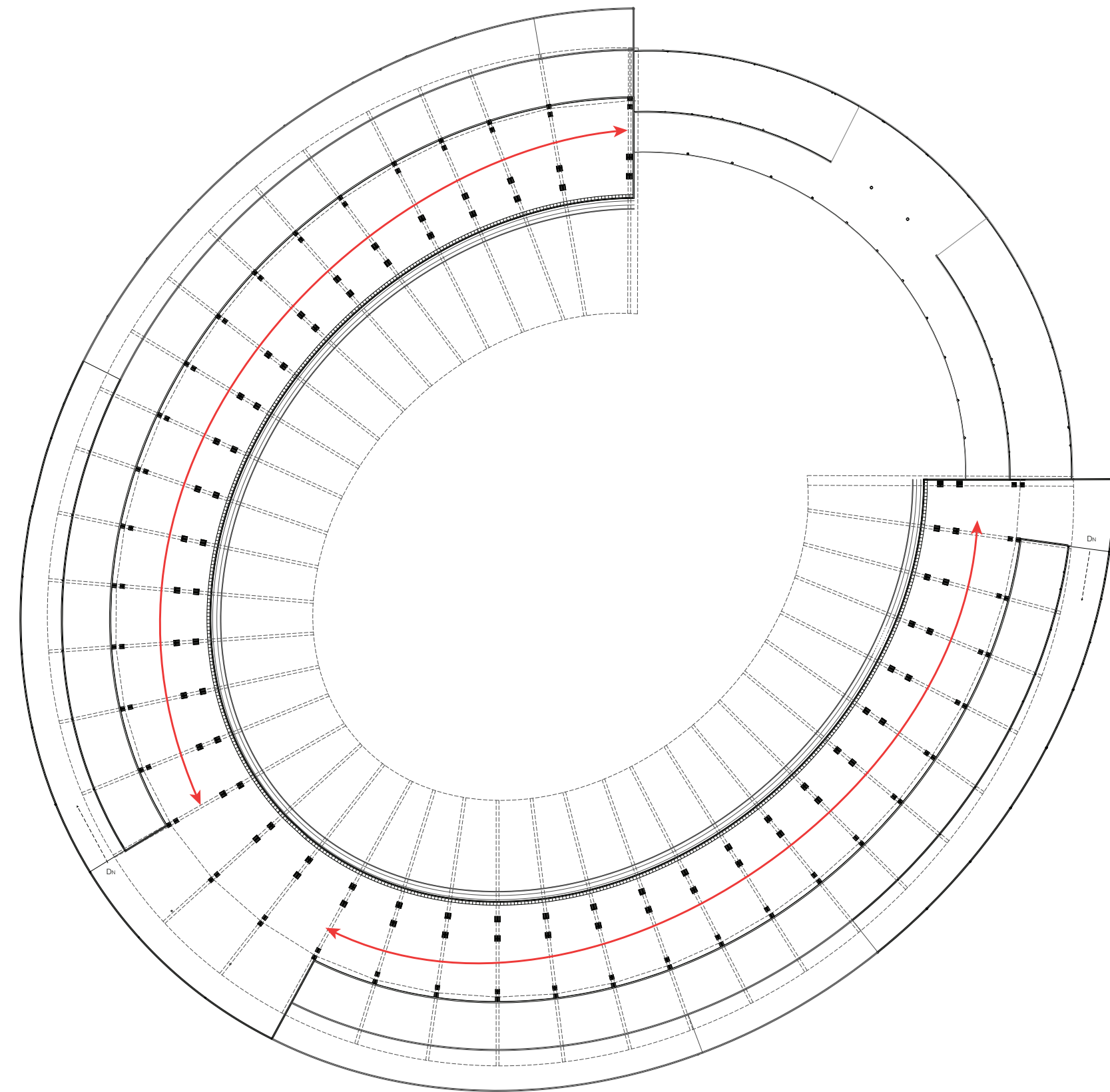


STADIUM

THE UPPER DECK BIKE LEVEL

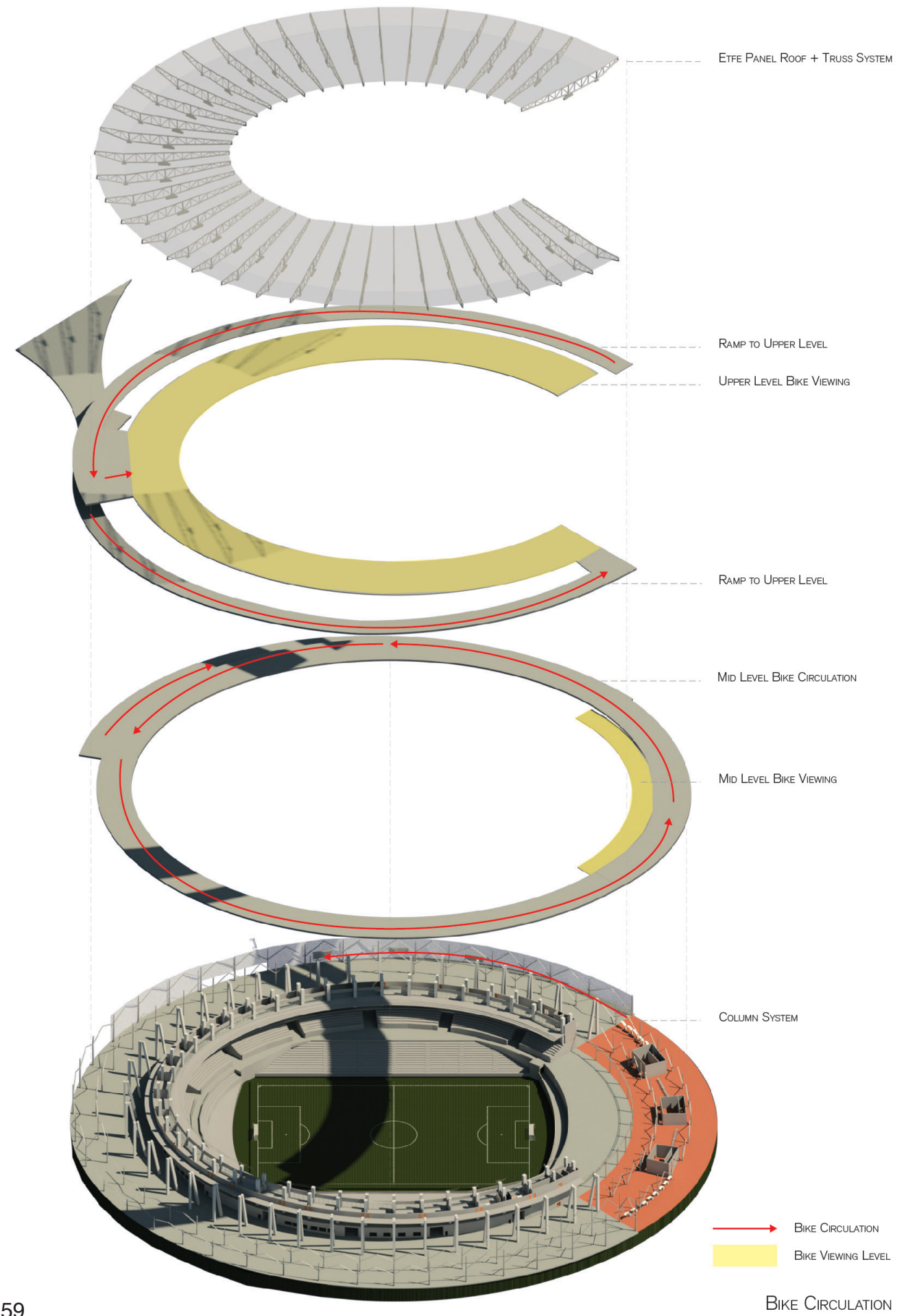
The stadium footprint is an elliptical shape surrounding the field. This elliptical shape is the best shape to efficiently add bicycle ramps at a safe slope. A large elliptical footprint allows for large gently sloped ramps to fit around the stadium site. The elliptical shape is also best for repeating the section.

The seating elements stop and the stadium opens up to face the new traffic oval, future monument site, and Nationals Stadium. This creates a relationship between the two stadiums and helps foster the idea of a 'stadium district'.



→ PATH OF BIKES

UPPER DECK BIKE LEVEL
0 25 50 100



DESIGN

THE BICYCLE

The bicycle becomes the most important feature of the new urban soccer stadium. D.C.'s bicycle culture is growing, and a stadium designed primarily with bicycles in mind becomes a uniquely D.C. experience.

Without a major car parking lot on site, alternative forms of transportation, especially bicycling, become important when traveling to a game. The stadium's site in Buzzard Point is a perfect location to receive bicycle traffic from across the Anacostia over the new Frederick Douglass Memorial Bridge as well as bicycle traffic along the extended Anacostia River walk trail and the new bike lanes that will be built in Buzzard Point.

Bicycling to and from the stadium will be an entirely different experience than riding the metro or streetcar and walking. The bicycling experience consists of:

- The Entrances
- The Ramps
- The Game
- The Storage

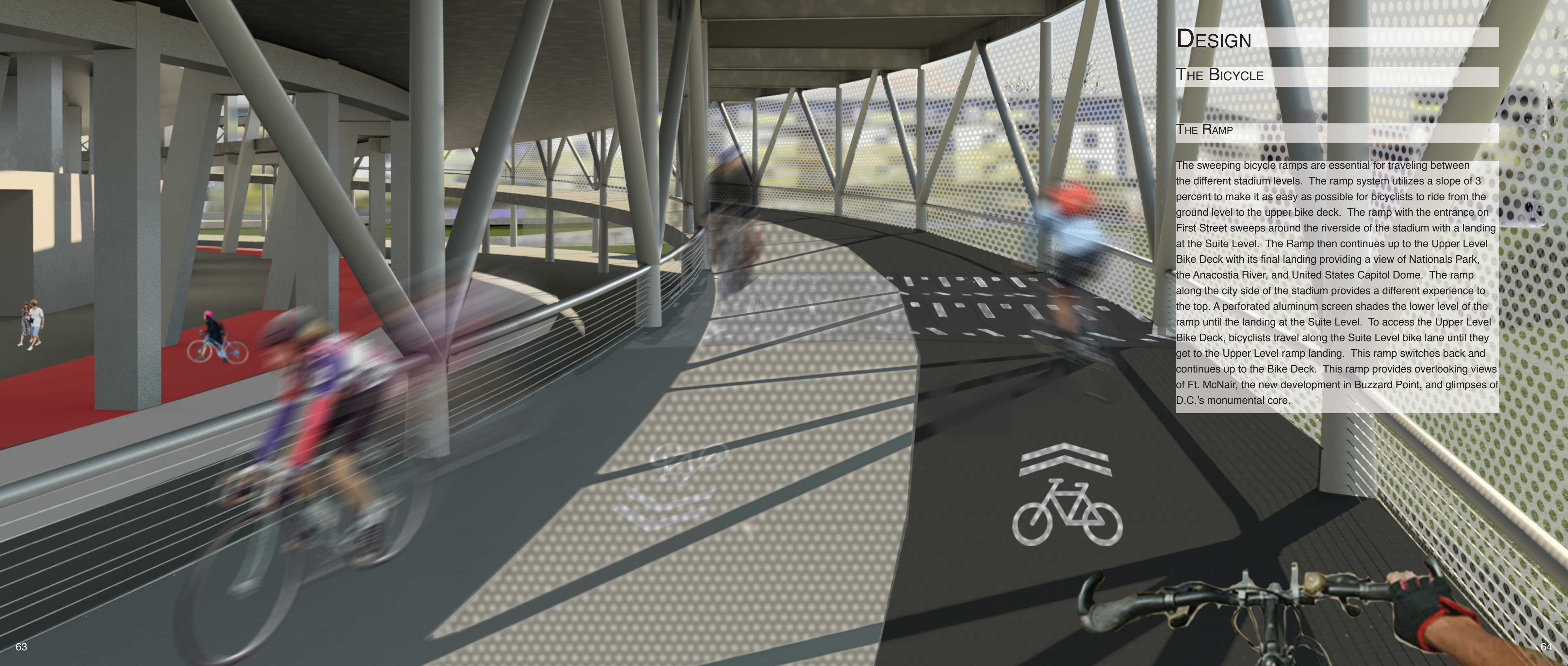
DESIGN

THE BICYCLE

THE ENTRANCE

There are two ground level ramp entrances and each entrance provides a different route to the suite level and upper bicycle level. The ground entrance on First Street is best for bicyclists who would like to ride seamlessly from the street bike lane into the stadium. This entrance ramp is at ground level and widens to connect to the street. Where the ramp meets the street it cuts through the sidewalk like a driveway entrance sloping to meet the road. The entrance closest to R Street is next to the main stadium entrance and mixes pedestrians and bicyclists, which forces bicyclists to slow down and dismount from their bike. Because bicyclists use the bike levels to watch the game there is no need to check for tickets at these entrances.



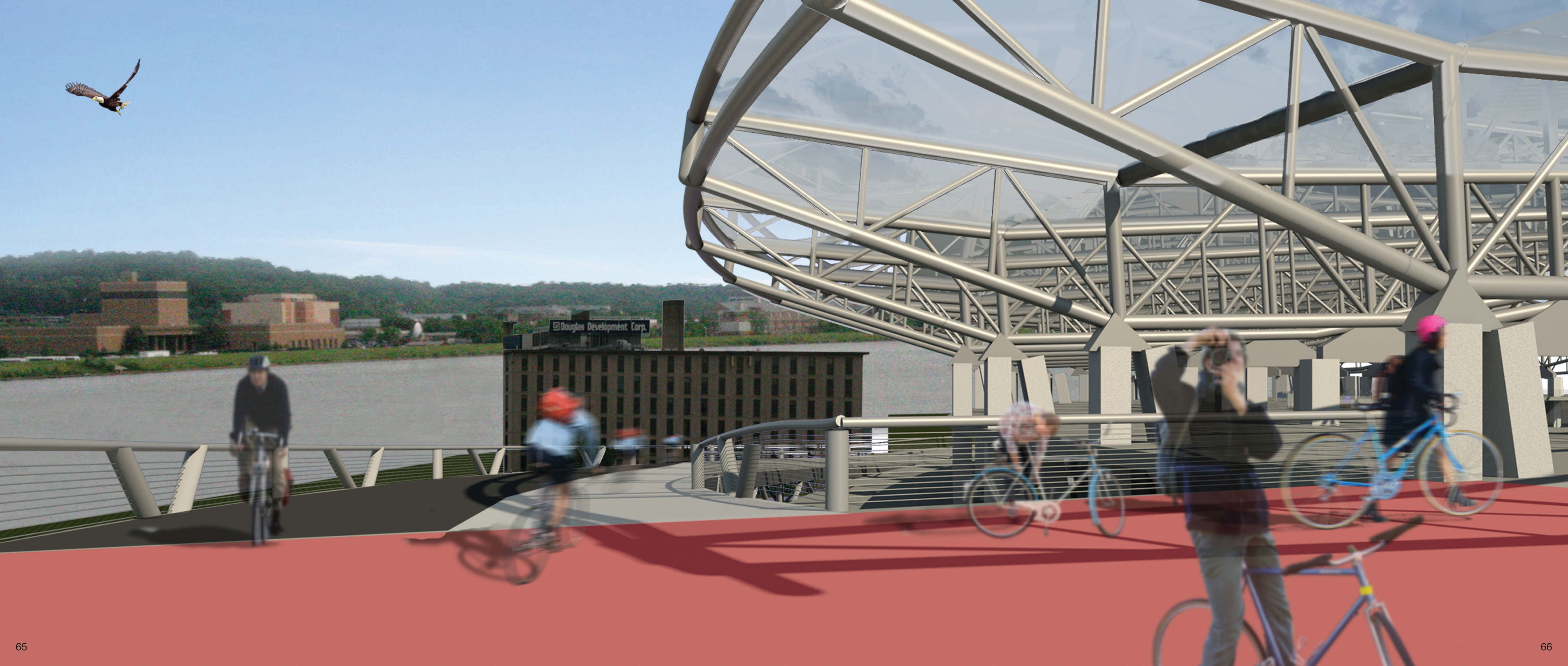


DESIGN

THE BICYCLE

THE RAMP

The sweeping bicycle ramps are essential for traveling between the different stadium levels. The ramp system utilizes a slope of 3 percent to make it as easy as possible for bicyclists to ride from the ground level to the upper bike deck. The ramp with the entrance on First Street sweeps around the riverside of the stadium with a landing at the Suite Level. The Ramp then continues up to the Upper Level Bike Deck with its final landing providing a view of Nationals Park, the Anacostia River, and United States Capitol Dome. The ramp along the city side of the stadium provides a different experience to the top. A perforated aluminum screen shades the lower level of the ramp until the landing at the Suite Level. To access the Upper Level Bike Deck, bicyclists travel along the Suite Level bike lane until they get to the Upper Level ramp landing. This ramp switches back and continues up to the Bike Deck. This ramp provides overlooking views of Ft. McNair, the new development in Buzzard Point, and glimpses of D.C.'s monumental core.





DESIGN

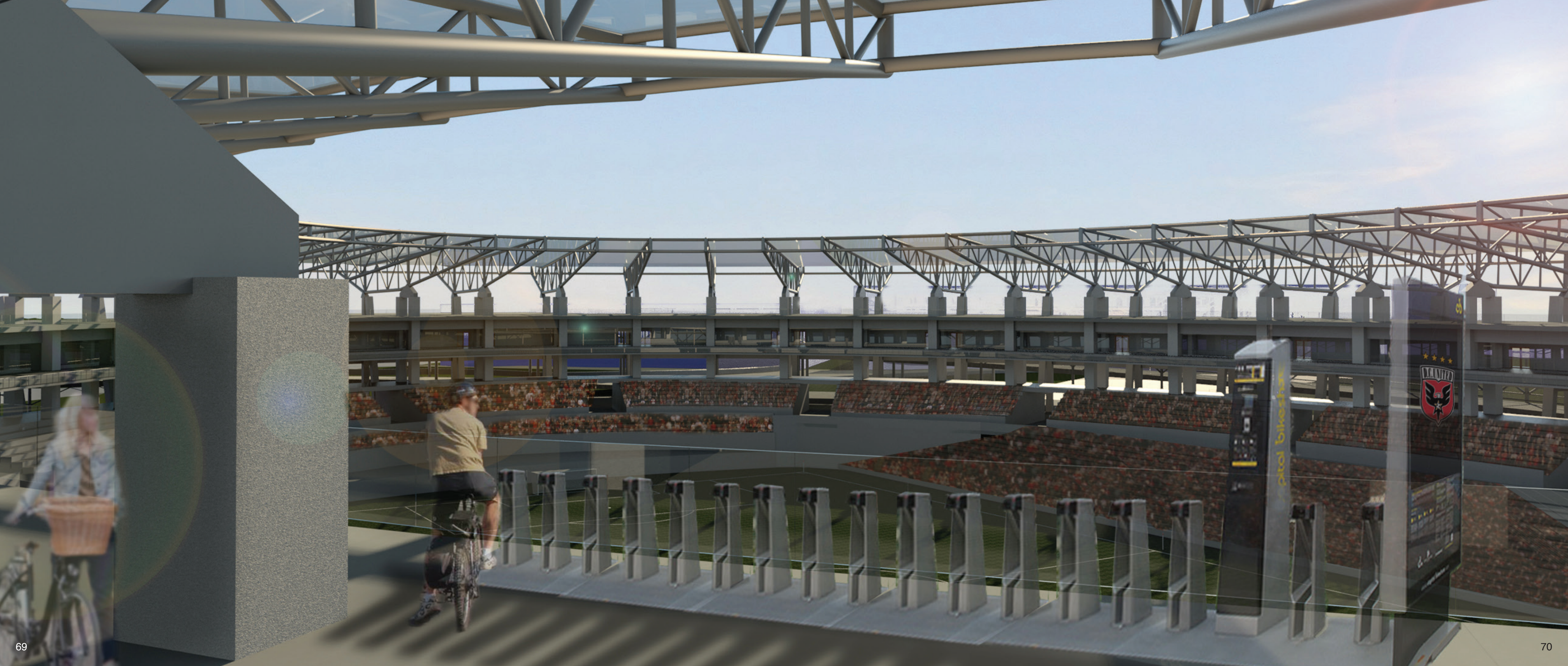
THE BICYCLE

THE GAME

The in-game experience for someone bicycling to the stadium will be very different than for someone who uses another form of transportation. Bicyclists have the option to not purchase a game ticket, but instead renting bike-parking slots to sit and watch the game. This special bicycle only level is the entire upper deck of the stadium. There is also a mid level bike deck located above the main stadium entrance. These "Bike Decks" will hold special parking slots very similar to the Capital Bikeshare system. Users can use their credit cards to pay at designated stations and then park their bike for however long they want to watch the game.

Since most of the stadium seating is on the lower level, bicyclists who do purchase a game ticket do not have to use the bike decks to park their bike. Unless they are sitting on the suite level, these bicyclists do not enter the stadium through the bicycle ramp entrances. They become pedestrians when they enter the stadium and walk their bike to the bicycle parking concession stand.

These parking stands, located underneath the seating area, are modeled after the Bikestation Washington, D.C. at Union Station. At the Bikestation, bikes are 'stacked' in a system of slots allowing for a large number of bikes in a small-contained space. D.C.'s new urban stadium takes advantage of this storage system and expands on it by stacking bikes three slots high.



DESIGN

THE SITE

THE STADIUM GROUNDS

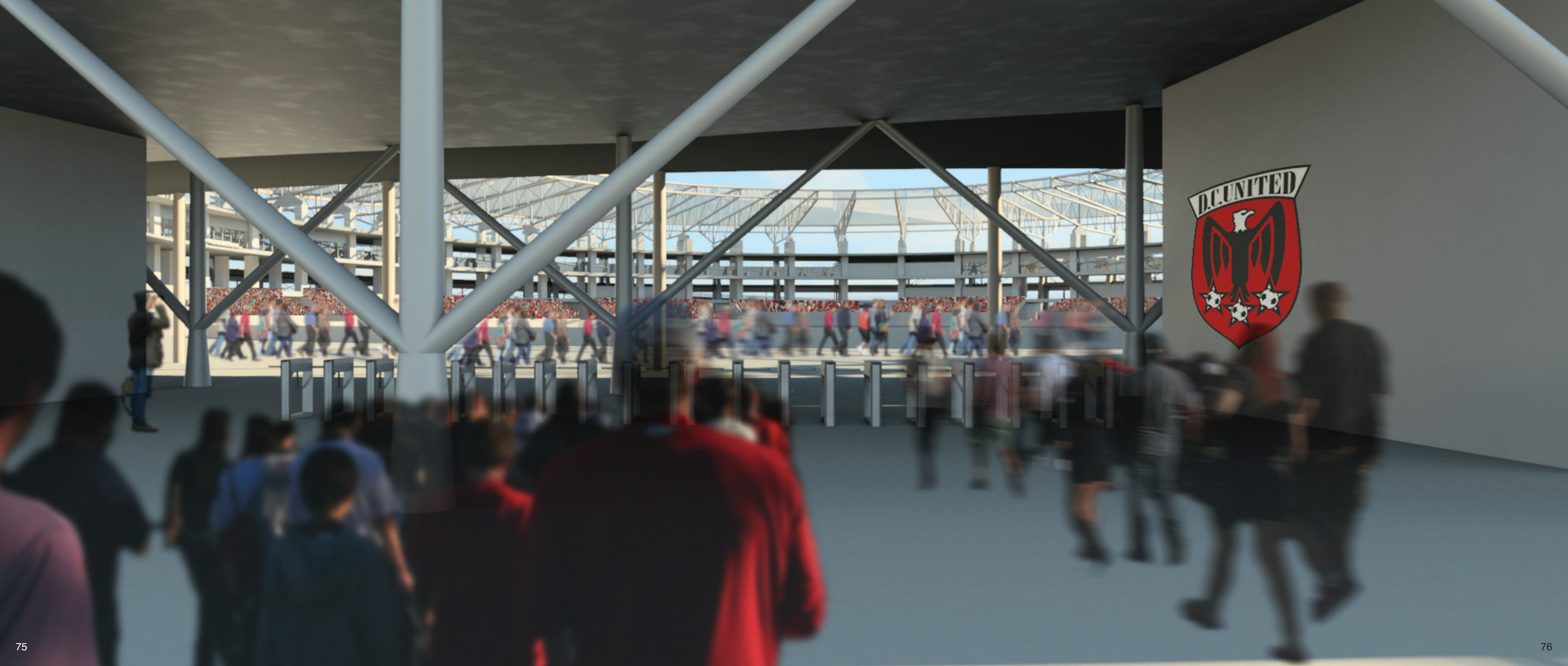
At an urban stadium, what is the function of the surrounding area of the complex?

The area immediately surrounding D.C.'s new urban stadium will become a park for soccer. Underneath the sweeping ramp system, a series of soccer goals ranging from youth to adult are integrated within the structure of the stadium. By integrating these goals into the stadium, it strengthens the connection to the site and keeps some aspects of the RFK tailgating experience alive. The goals allow young fans and adults alike to play pick up soccer games before going into the stadium to watch the game.

The Anacostia Riverwalk Trail has been extended to continue underneath the new Frederick Douglass Memorial Bridge and its new path follows the one hundred year flood plan. The trail is built up in elevation and now acts as a flood mitigation technique. While the area to the west of the trail is for more organized activities, the area to the east of the trail is used for passive recreation. These passive recreation activities can include fishing and wildlife viewing.





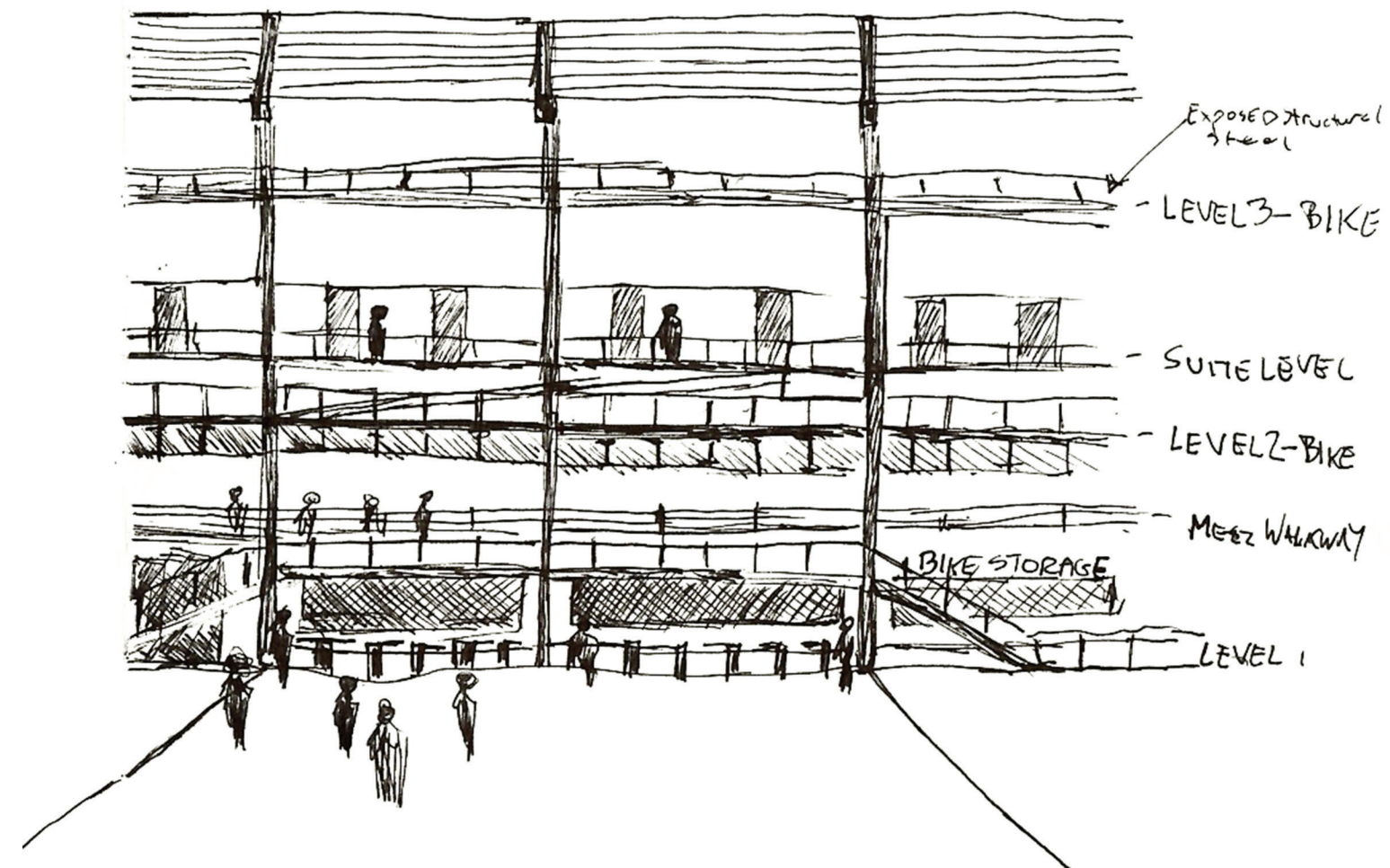


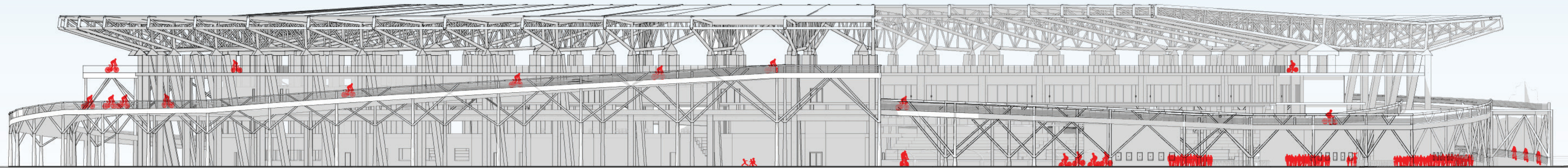
DESIGN

THE ELEVATION

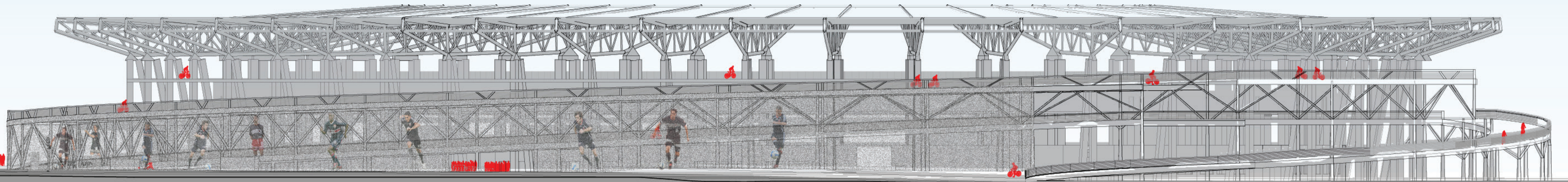
CITY VS. RIVER

Despite being a round stadium, the river elevation and the city elevation are distinctly different. The Anacostia River is a vital element to the design proposal. On the eastern side, the structure becomes more exposed towards the river allowing for views of the new Frederick Douglass Memorial Bridge, the Anacostia River, and Nationals Ballpark. Between the columns supporting the overhead bicycle ramp, there is space for a full size soccer goal. These goals are placed at every other column bay and further the connection between the stadium and its surrounding landscape. On the western side or city side of the stadium, the structure is covered up with a perforated aluminum panel system. Primarily, this panel system is in place to shade the bicycle ramps and concourse walkways from the harsh Washington summer afternoon sun. Secondly, the panel system allows for large images of members of D.C. United's Hall of Tradition to be displayed. Currently D.C. United's Hall of Tradition is located inside RFK Stadium with banners of the players' names and numbers hung along a concrete wall facing the playing field. By bringing the Hall of Tradition to the exterior of the stadium, it further acknowledges the great players that have made D.C. United one of the most prestigious teams in the MLS.

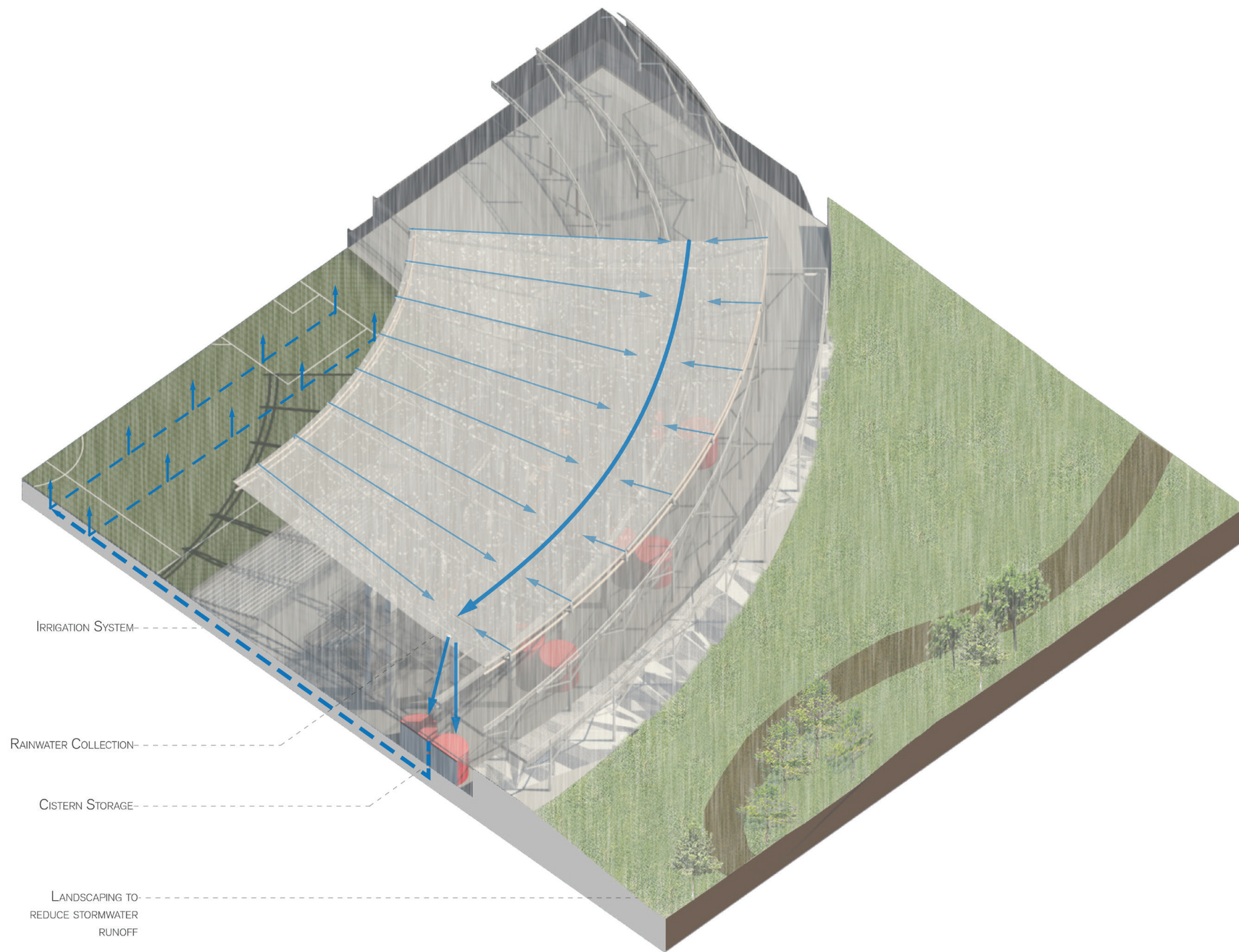




RIVER ELEVATION
0 10 20 40



CITY ELEVATION
0 10 20 40



WATER COLLECTION DIAGRAM

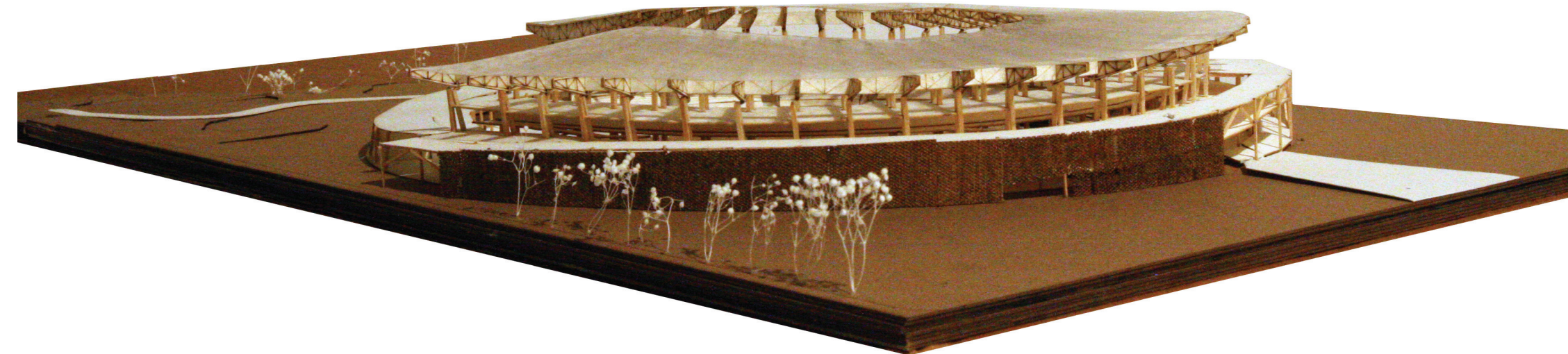
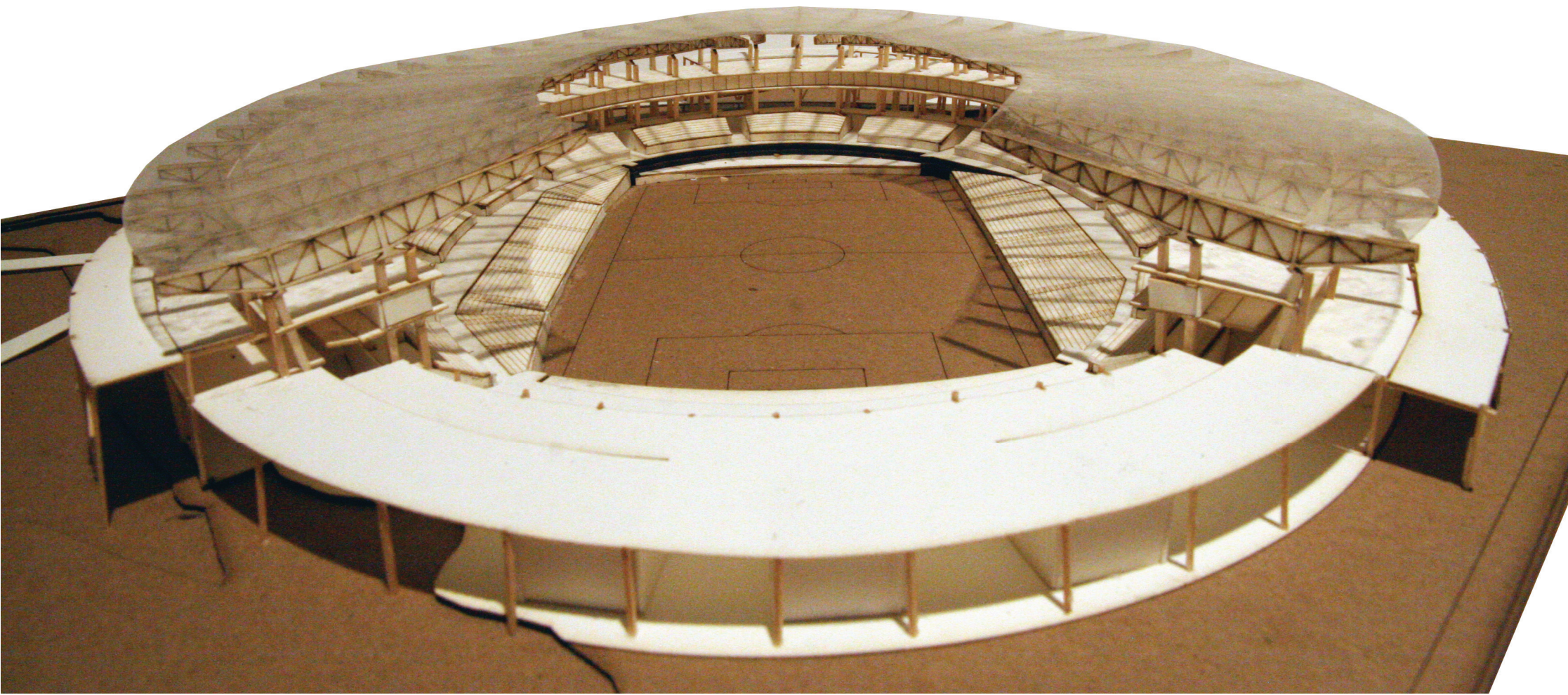
DESIGN

THE ROOF

WATER COLLECTION SYSTEM

The roof of the stadium is made of ETFE panels or Ethylene Tetrafluoroethylene. ETFE is a superior product to glass panels because it is lighter (1/100th of the weight of glass), it is non-stick and thus requires no cleaning, and has a greater span than glass paneling.

The roof is also a very important element in the sustainability of the stadium. The structure of the roof allows water to flow into collection channels and flow down pipes along the columns into collection cisterns located underneath the stadium. This water collected in cisterns can then be used for gray water purposes around the stadium such a irrigation of the field or the cleaning the seating areas after games.



AFTERWORD

A stadium does not have to become a suburban monument. It does not have to be separated from the city, the culture, or the site. Not allowing on site parking allowed me to have a deeper conversation about interactions between buildings and alternative forms of transportation. It allowed me to investigate a new type of building and change my thoughts on what a stadium can become.

Stadia are large civic monuments and they become monuments of the city. It is important for stadia of the future to address the city, site, and culture. Addressing these issues creates a unique stadium experience different from anywhere else. The integration of bicycles creates a uniquely Washington, D.C. experience.

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