

THE
IMPETUS
OF
LOCOMOTION

JACK CANDLER SEARCY IV

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A STUDY INTO THE DYNAMICS OF ARCHITECTURAL MOVEMENT

JACK CANDLER SEARCY IV

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Architecture

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ACADEMIC ABSTRACT

The “Impetus of Locomotion” takes the implication of a force in which movement happens. This thesis takes this connotatively resonant idea in which movement is construed and creates a static definition of it in a building, in this case a high speed rail station - a literal translation of movement. Through design interventions of modes of transportation, wayfinding, and architectural form, the impetus of locomotion is defined.

GENERAL AUDIENCE ABSTRACT

Architectural movement is an abstract concept in which the way certain forms and spaces are shaped and/or arranged in such a way that creates or invokes a feeling of motion in the architecture itself while remaining static. The goal of this thesis is to achieve this principle in a fundamental way using those arrangements and forms. On the technical side of my project scope, I have researched and implemented the literal modes of movement which would culminate in one location. These concepts of both architectural and literal modes of movement come together in the form of an intramodal station in Houston, Texas.

DEDICATION

This master thesis is dedicated to my parents, Jack & Diana. Their constant love and support for my education has been of paramount benefit to my future and career as an architect. I am forever in their debt and will cherish their continued guidance in my life.

I would like to also dedicate this work to my grandfather, Jack. He gave me the inspiration to pursue this specific project after years of conversations about our hopes that one day a bullet train line would be built in our very own backyard. Thank you, Paw paw.

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01 Introduction



Domestic travel in the United States is expensive. Given its vast size, the current preference for getting places quickly is by air travel. America doesn't have an extensive interstate passenger rail system like the one found in Europe. Even conventional passenger rail lines can't match the speed of flying by commercial jet. The northeast is probably the most elaborate system we have at this point. Connecting these cities with faster ground transportation would create competition with airline companies, and drive travel costs down across the country. The most efficient high speed ground transportation technology the world can offer us at this point is a bullet train, capable of reaching cruising speeds of over 200mph. While not nearly as fast as the 564mph Boeing 737, it can certainly close the travel time gap in many cases when accounting for time spent with security. One such project has been in development for a number of years in my home state of Texas, where a high speed rail line connecting Houston and Dallas is soon to become reality. If implemented, it would be the impetus for the future of locomotion in America.

My research began with the Texas Central Railway Company. They have been developing the project for a number of years and have overcome several hurdles during the pursuit. Given their vast amount of existing research and studies, I found the obvious candidate as to where I would be able to gain the bulk of my research information that would aid me in most of my technical decisions. Resources from the city of Houston would also prove beneficial to my cause, as they gave me valuable insight into the existing infrastructure and surrounding context of my site. This predevelopment phase of any design lays a foundation that must be built with the utmost care and due diligence.

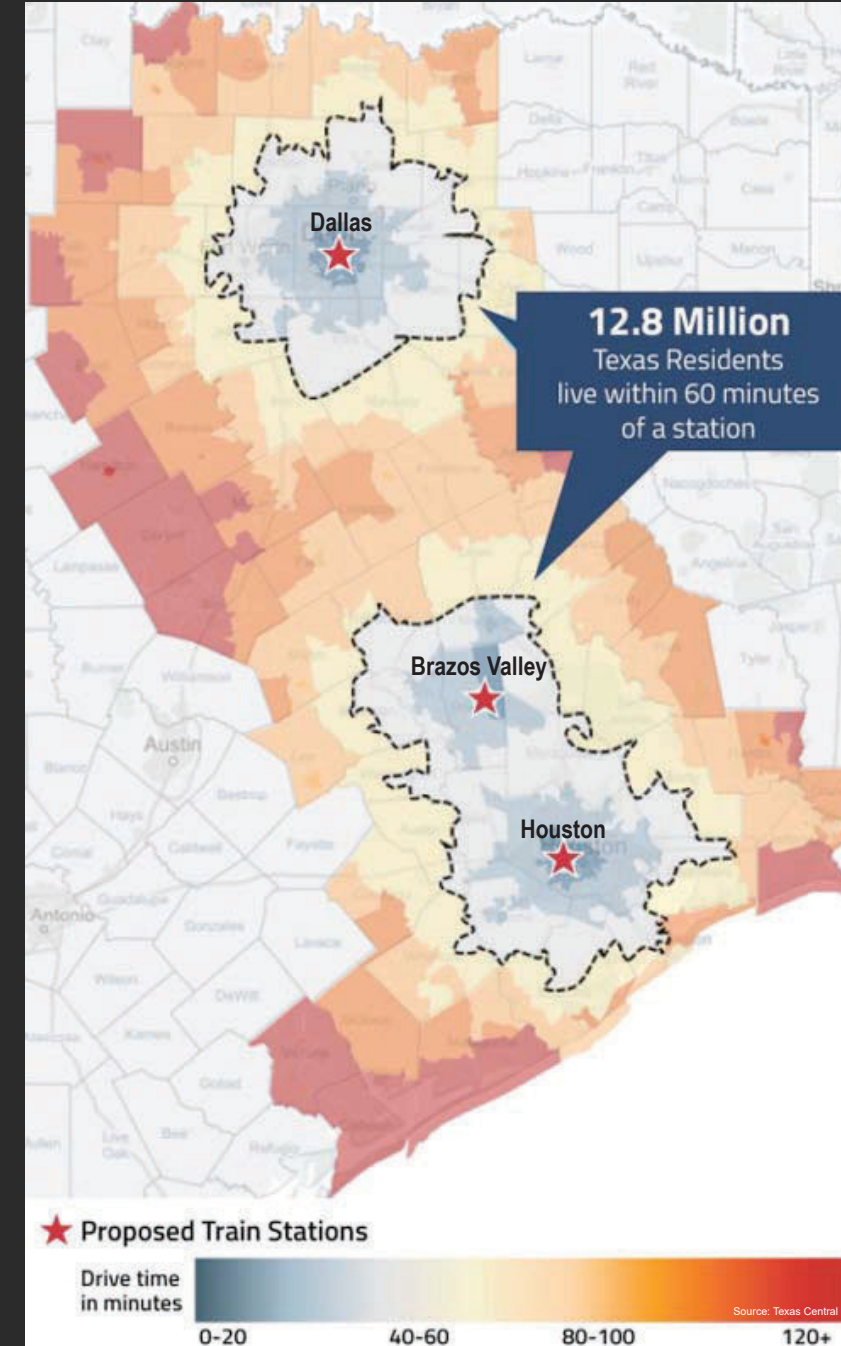
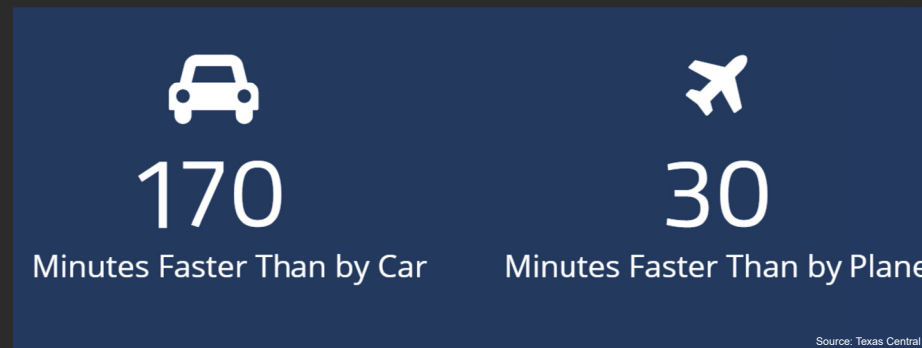
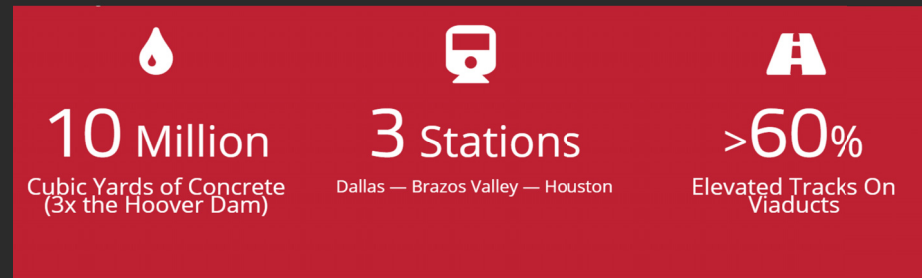
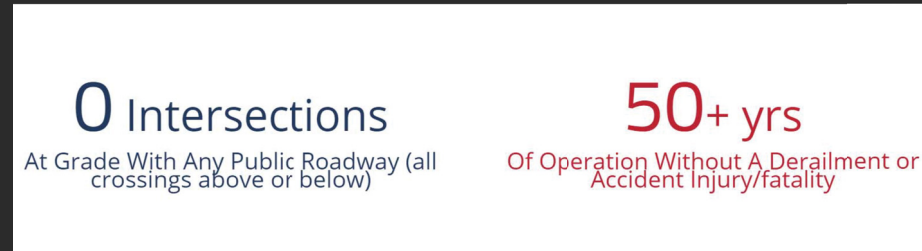
Statistics

Let's look at this objectively - a project of this scale and size would certainly create a spike in an already booming Texas economy, creating 10,000 jobs during each year of construction, \$2.5 billion in taxes for the state, counties, schools, and municipalities, and would bring an estimated \$36 billion to the Lone Star State.

Another important concern to consider is the safety of the project - at no point in the 50+ year history of the Shinkansen N700-I bullet train has there been any injury, fatality, or derailment. The rail line would be elevated on viaducts so there would be no intersections at grade with any public roadway.

Constructing this project would take several years. The sheer amount of concrete required would dwarf the Hoover dam with 10 million cubic yards spread across the roughly 250 miles between Houston and Dallas. Three stops have been proposed, with the two terminal stations in Houston and Dallas, and a third station along the route in the Brazos valley, as to service two major universities in close proximity.

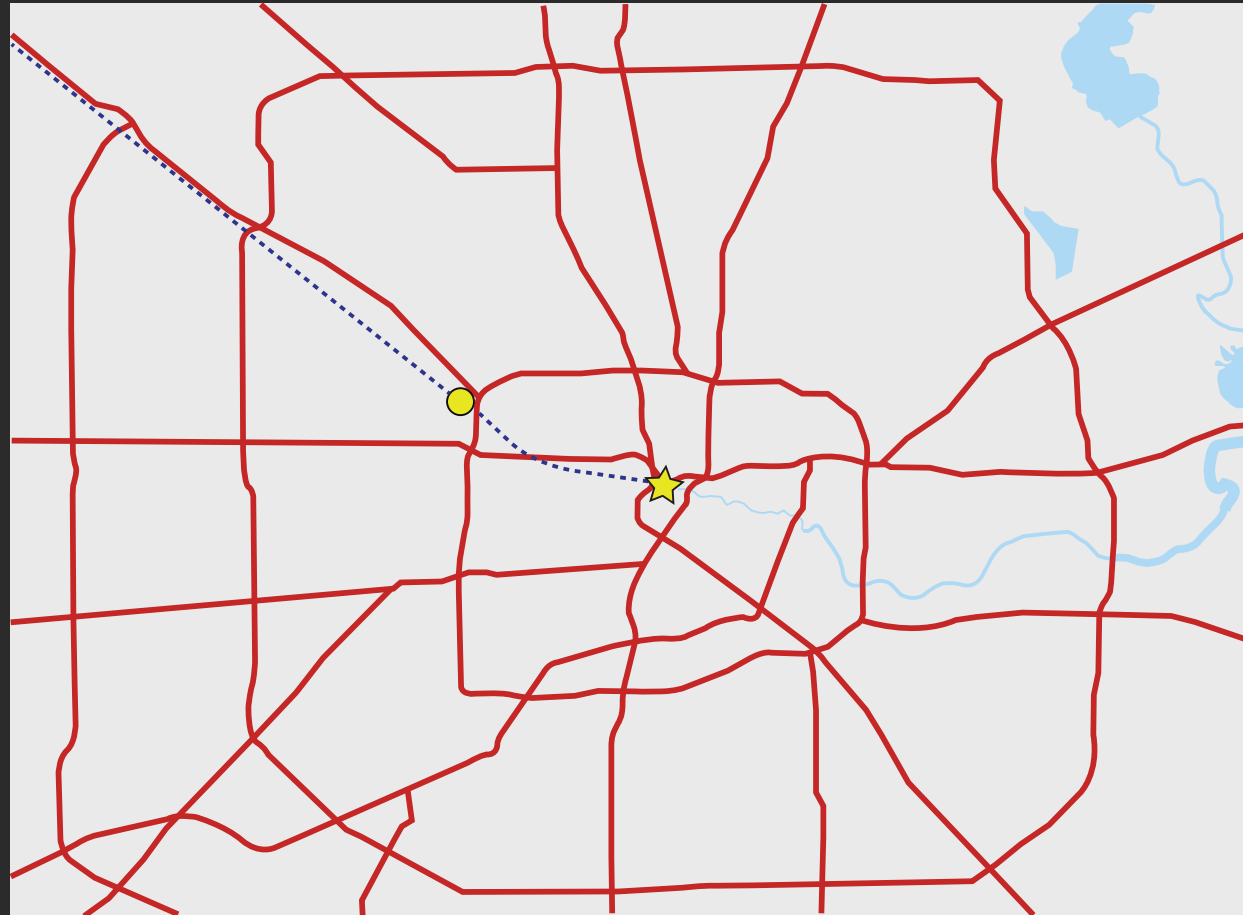
The total travel time between Houston and Dallas would be approximately 90 minutes, a significant decrease from traveling with a personal vehicle that takes 4 to 5 hours, or a 2 to 3 hour flight when accounting for security and boarding.



Ridership

Texas is the largest state in the contiguous United States. Traveling across the state is comparable to travel across western Europe. The state has a very deeply embedded car culture, which is often seen as the best form of transportation when traveling in state. This project gives them another option. Servicing two of the five most populated metropolitan areas in the country, potential ridership is never in short supply. An approximate 12.8 million Texas residents live within an hour of at least one of the three proposed stations.

As a resident of Houston, it truly excites me to think that a trip to Dallas could be done in a fraction of the time it would take me now.



Site Selection

The existing development project has proposed a site on the northwest I-610 loop surrounding Houston 6 miles from downtown. The only means of transportation to and from this site are either by bus or personal vehicle. My proposal is to bring the station to the doorstep of downtown Houston, where in addition to personal vehicle and bus transportation, it also allows the opportunity to safely travel by foot, or use the Houston MetroRail system.

By bringing the station all the way to downtown, riders would

exit the station and greeted by a close up panorama of the Houston skyline, and would serve as a gateway to the city itself. Despite Texas car culture and the vast urban sprawl of the city, downtown Houston is surprisingly pedestrian friendly and would be of great benefit to riders coming to Houston without a means of transportation.



Urban Study

Houston has no zoning laws, meaning parcels of land have no specific requirement as to what kind of building can occupy that space. There are some districts that have emerged in the downtown area, including the theatre, law, and convention districts. Bounded by I-45 to the west, I-10 to the north, and I-69 to the east, downtown Houston is home to a plethora of building types and programs.

The site I have selected is located on the northern edge of downtown, near the intersection of I-45 and I-10. It's location

is strategically placed next to the theatre district, making it very convenient for Dallas residents to see various concerts and performances that would otherwise not be available to them at home. It is also within walking distance of the Buffalo Bayou, which features a walking trail along it, allowing for access to the Houston tunnel system - all while never having to cross a street after detraining.

Houston MetroRail

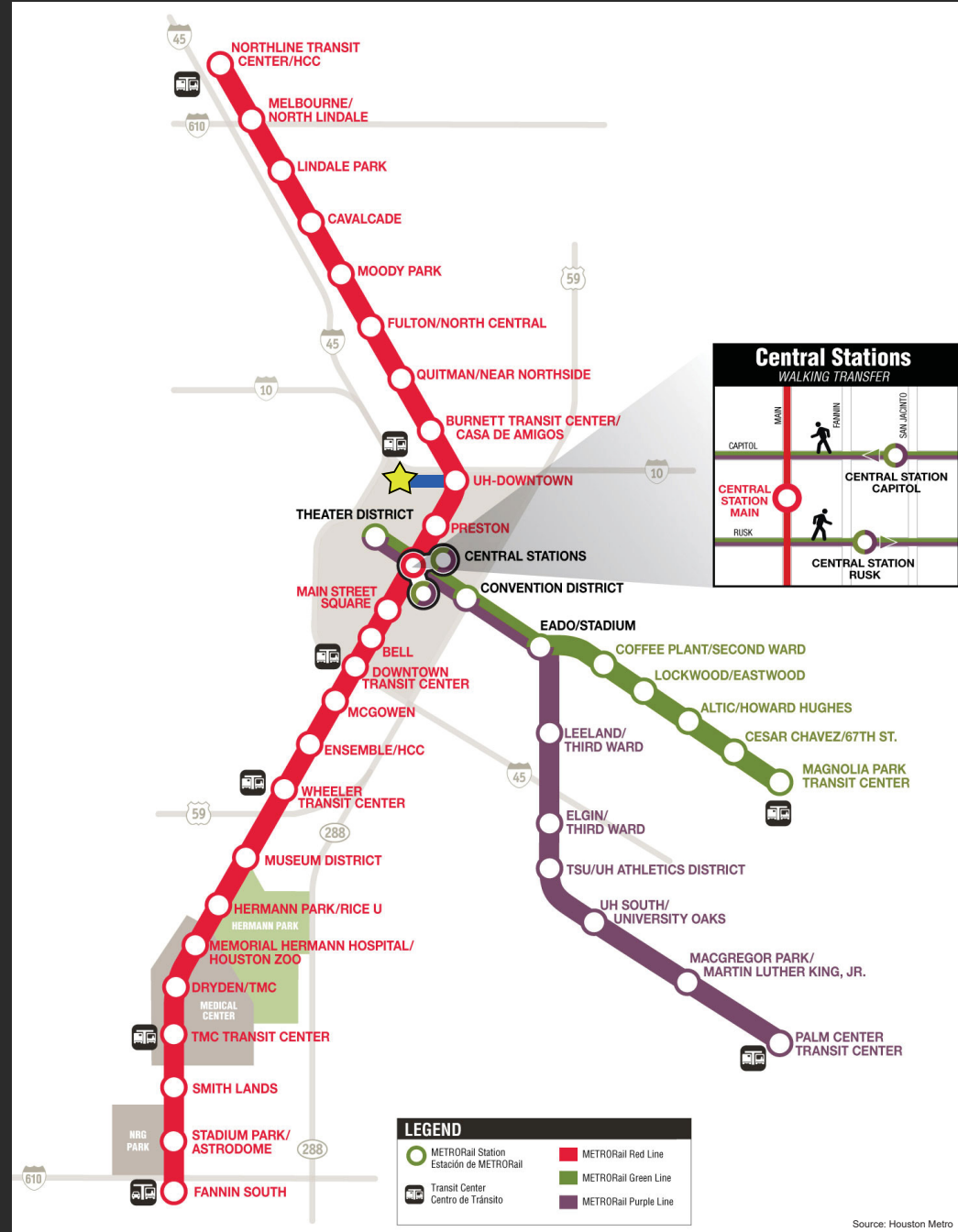
The added benefit to bringing the site closer to downtown is the proximity to the Houston MetroRail system. A direct connection would be designed in order to make an easy transition from the bullet train station to the closest light rail station at the University of Houston - Downtown campus. The station lies along the red line that stretches from the north I-610 loop down to NRG Park - another convenience to riders without a means of transportation, allowing them to attend football games, concerts, and the world's biggest rodeo. Even the Texas medical center lies along this route, home to some of the best hospitals in the world.



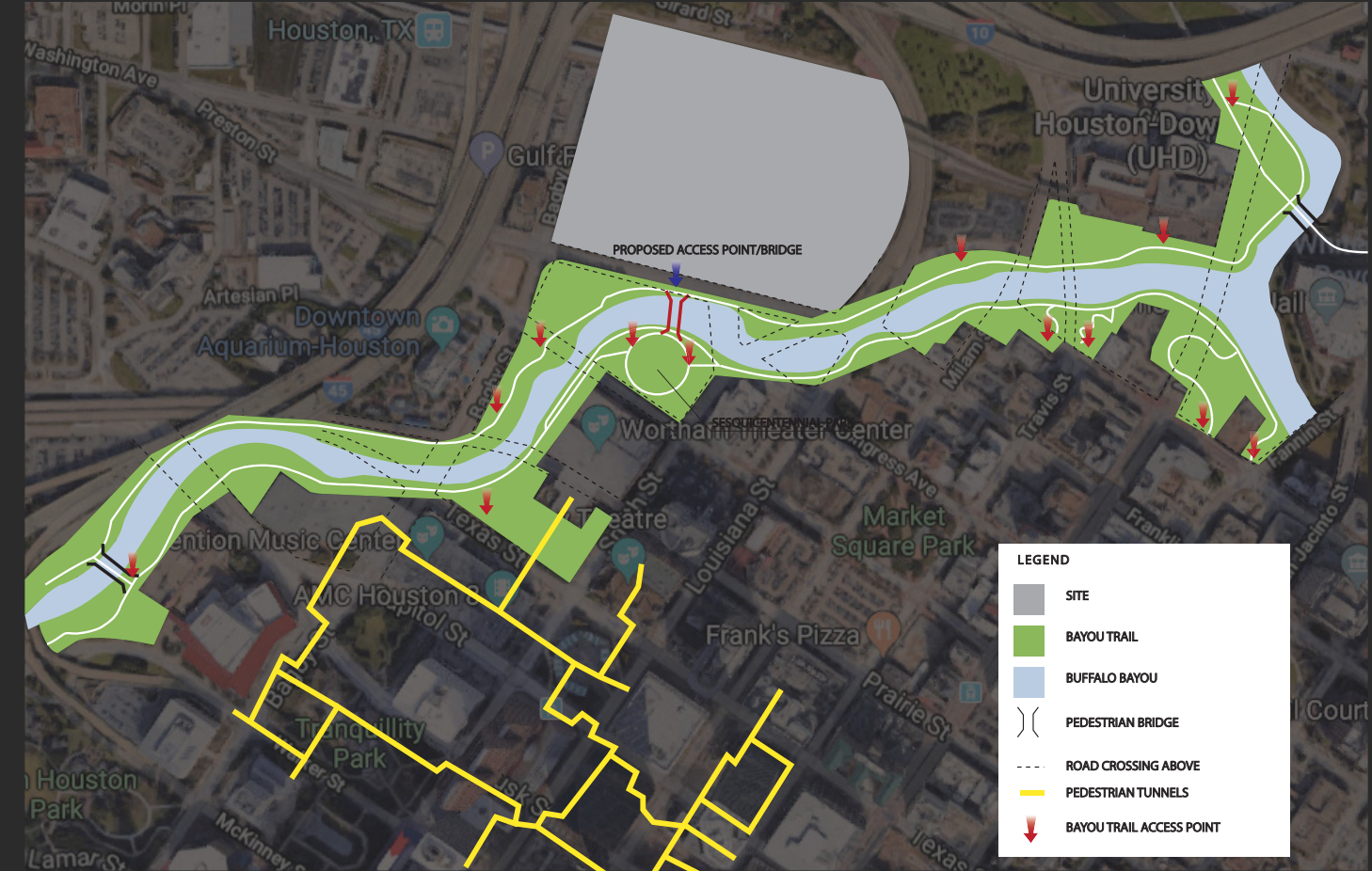
Source: Google Images
Texas Medical Center



Source: Google Images
NRG Park



Source: Houston Metro

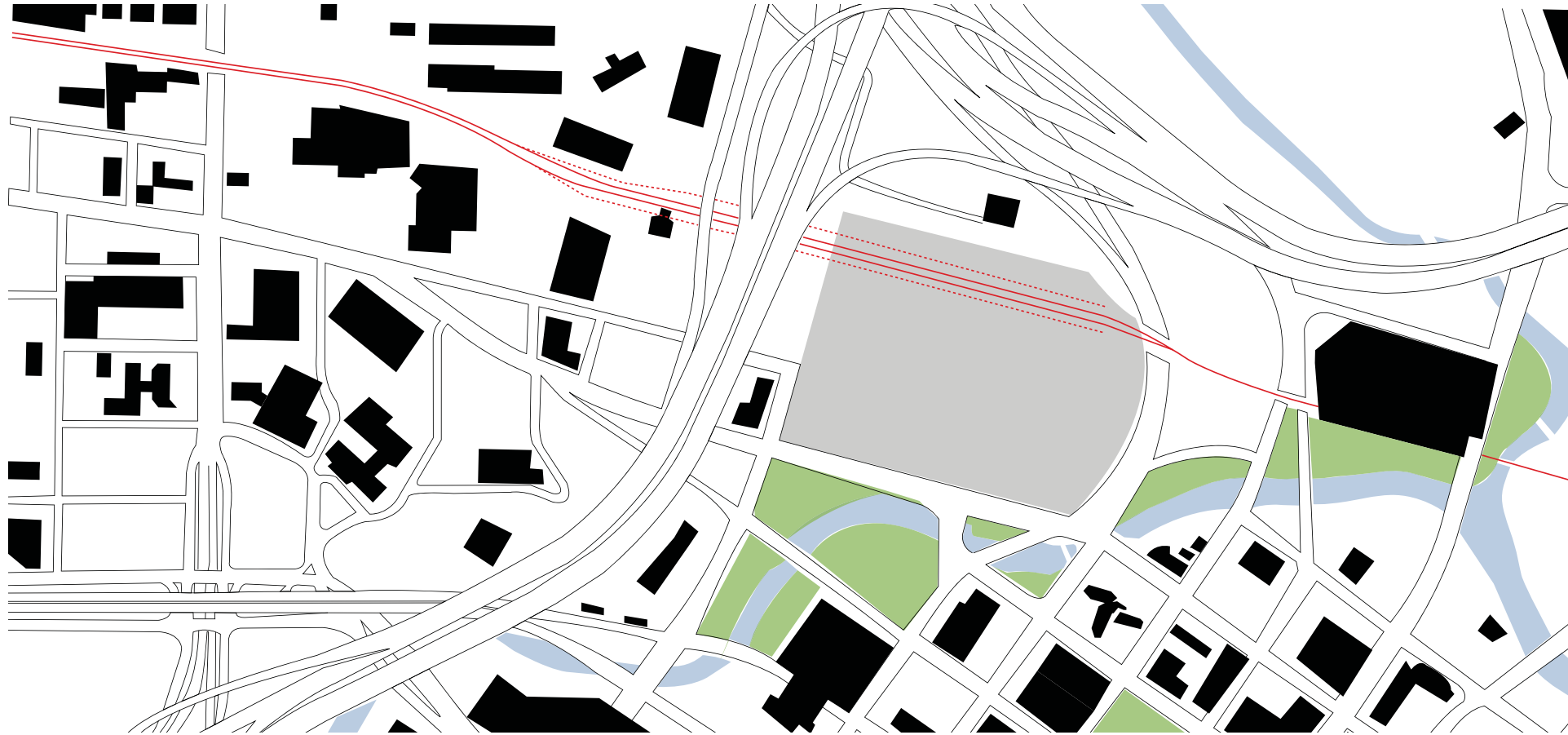


Buffalo Bayou Trail

Pedestrian access to the site is of great importance to establishing the design as an intramodal station. While there is no existing direct connection from the site to the Buffalo Bayou trail, designs would include an access point that would connect them underneath Franklin Street. Currently there are very few pedestrian crossings over the bayou, and would require at least a half mile walk to the nearest bridge. Directly adjacent to the proposed access point would be a new bridge, granting access to Sesquicentennial Park.

Due to its proneness to flooding, there are virtually no business that open directly onto the riverfront. However, by increasing the pedestrian traffic flow, there would be more city incentive to clean up and develop the trail, thus creating a thorough expansion of the Buffalo Bayou Park, just a short distance up river.

Since the Bayou trail has no street crossings at grade, it would allow pedestrians to safely move about the city and access the pedestrian tunnel network.



Development Area

Bringing the site so close to downtown will certainly have its challenges. Conveniently enough, active rail lines have been passing through it for over a century. The tracks are currently used by Amtrak, whose station is located adjacent to the site chosen. Of course there will be no need for two stations, so my proposal would absorb the services of the Amtrak station, as to avoid congestion of two trains using the same tracks stopping at different locations.

Additional lines would be required to increase the number of

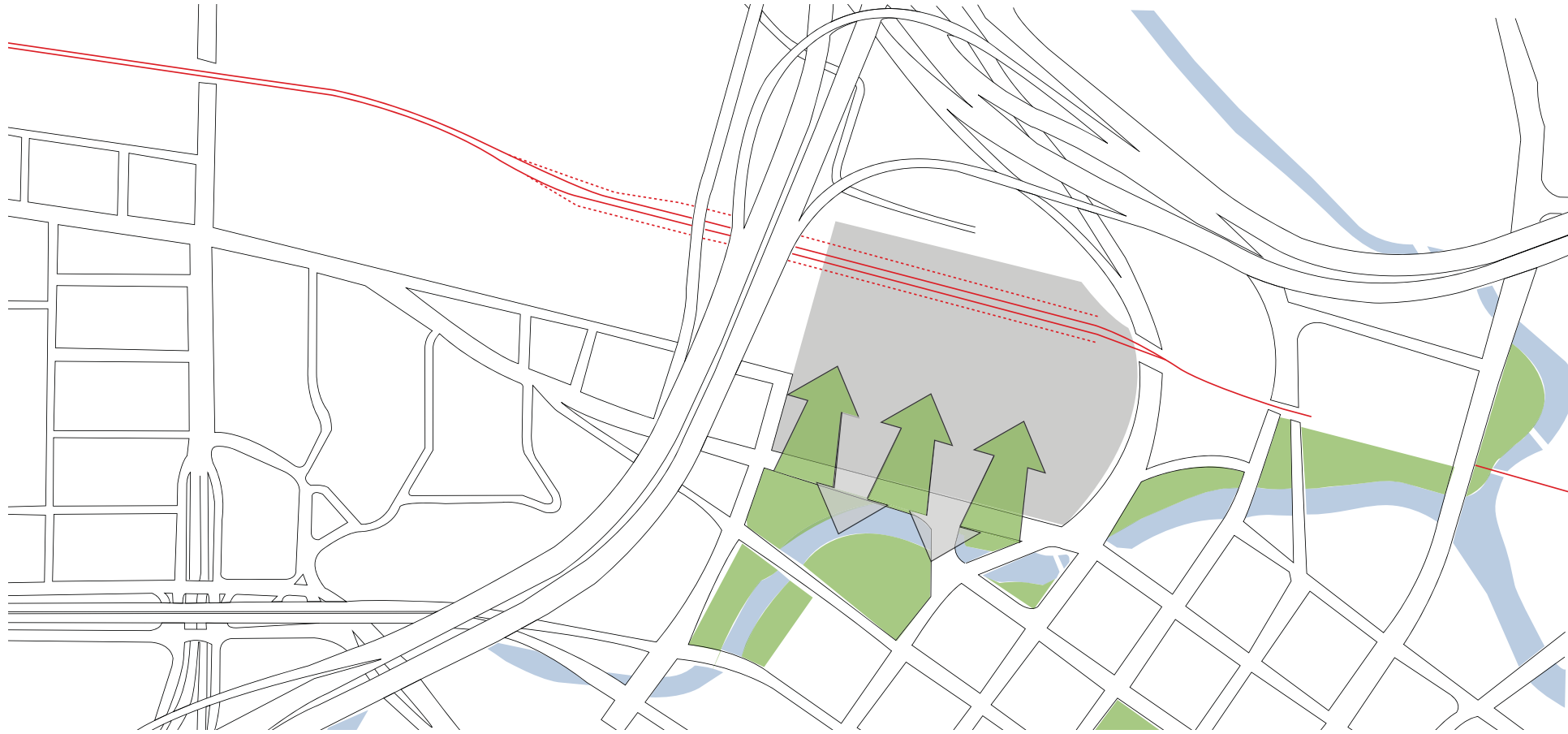
trains in the station at any given time. Since this would be a terminal station, the trains would not be able to pass through the station, but would simply be driven out in the reverse direction. The unused tracks beyond the stopping point would be repurposed for other means of transportation.

The scope of significant design work will not extend beyond the parcel at 401 Franklin Street, Houston, TX.



Tie into the Urban Fabric

A common occurrence amongst architects is a failure to address their buildings in the urban context. Design often ignores its surroundings and becomes only of the site. In an attempt to break this pattern, I am using this thesis as a way to connect the design to the community, or “tie into the urban fabric”. Exploring the surrounding areas and addressing how riders experience not only the site, but the city at large will become a major theme, especially in the modes of movement.



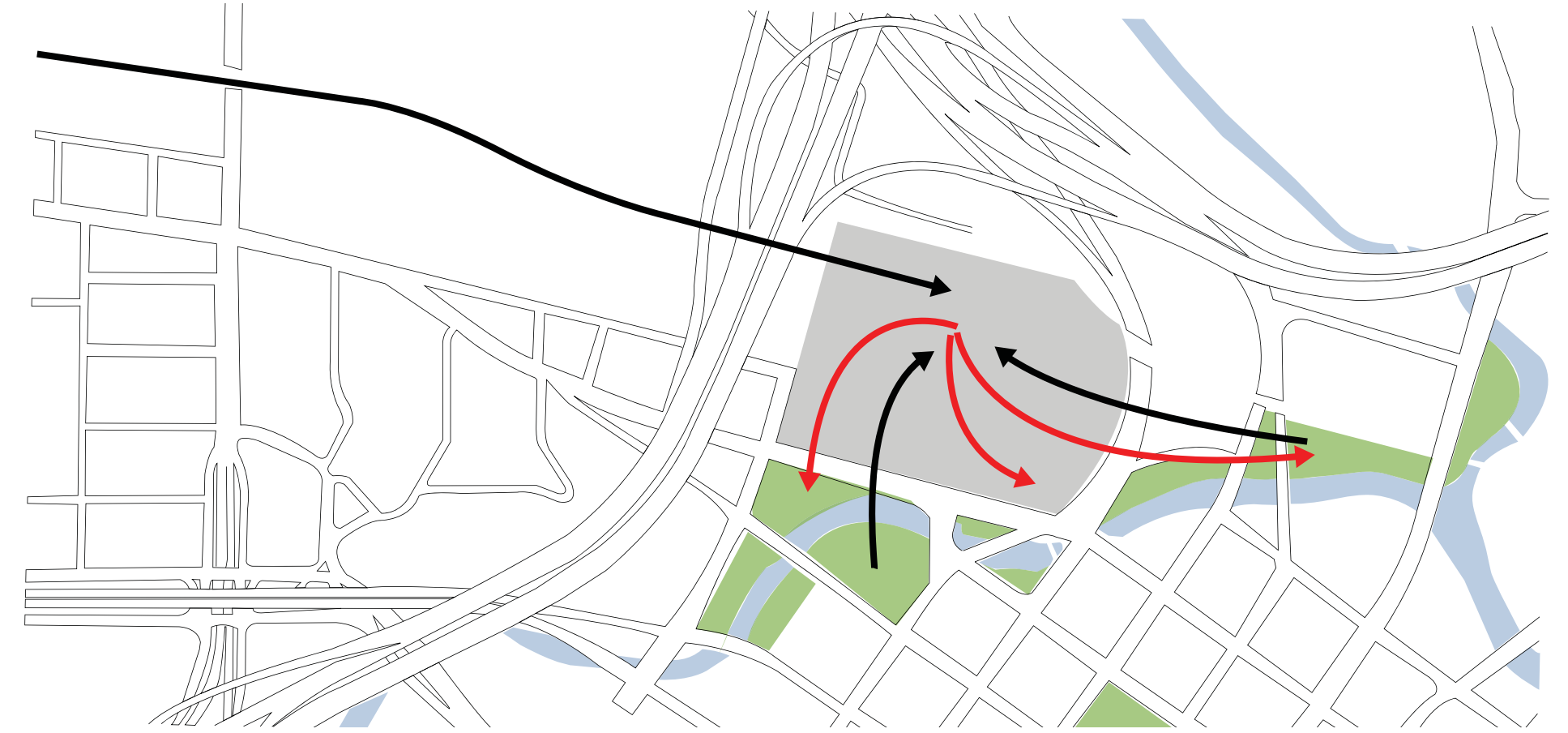
Extend/Blend Pedestrian Flows

The car culture in the United States, especially in Texas, often leaves pedestrians behind when it comes to safety and walkability in cities. Connecting the site to the existing pedestrian networks will allow riders to move freely throughout the city and experience Houston with their own eyes, and not through a windshield.

Buffalo Bayou is the most direct and logical way to establish this connection. It grants safe movement up and down the Houston Theatre District, all without having to cross a street. Pedestrian

safety is a large priority when it comes to any design, especially in a busy city like Houston.

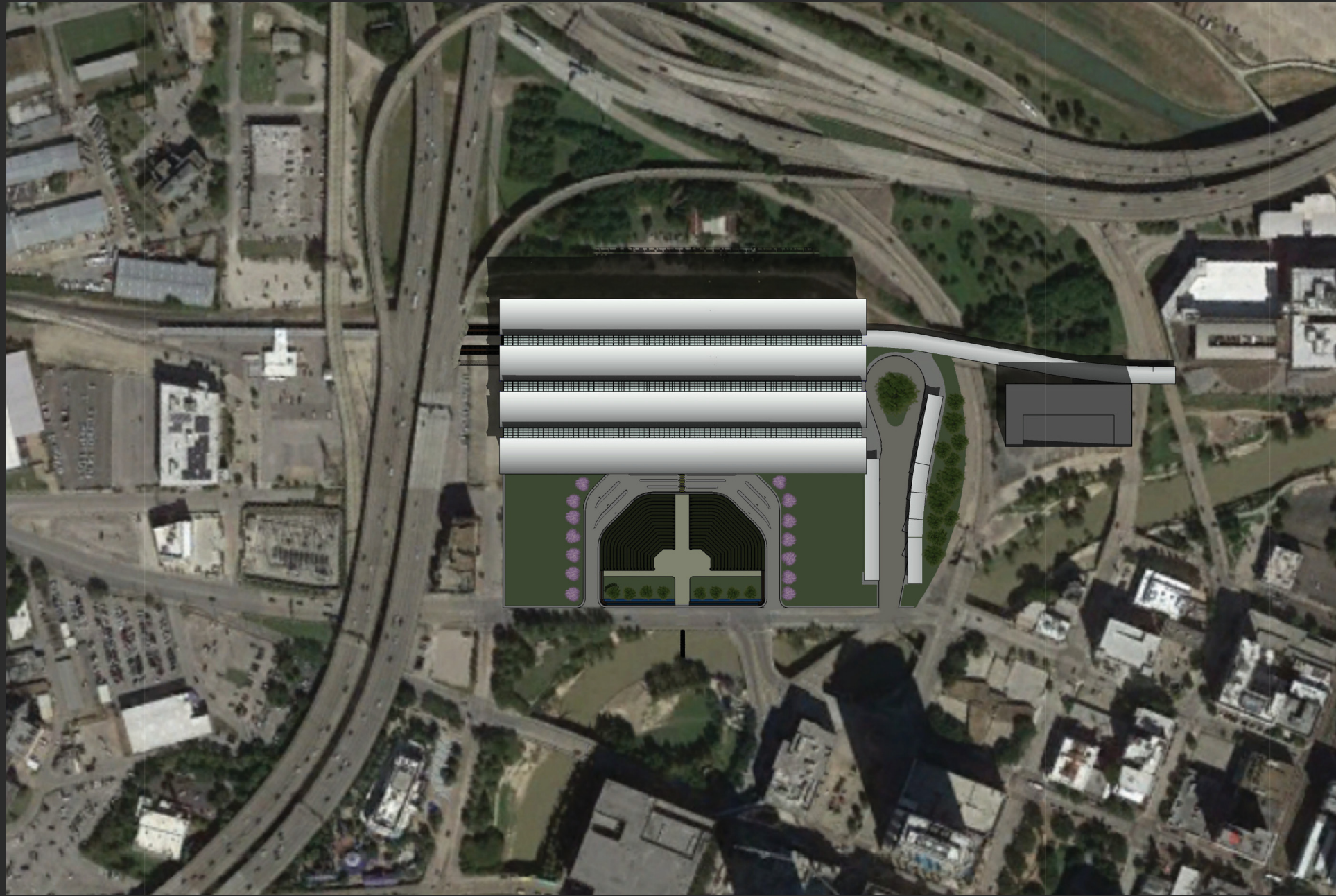
But just establishing a connection to pedestrian network is not enough. The goal here is to extend and blend it into my site. In essence, the site becomes part of the bayou.



Impetus of Locomotion

Movement. The way people are moving to and from the site is the primary goal of this project. This “catch and release” concept of architecture plays into not only the modes of movement, but also the changing experiences of individuals at any time of day whether they are stepping off the train into Houston for the first time, or the hundredth. The phrase “impetus of locomotion” serves not only as a means to describe the groundbreaking change this project would bring to America, but also refers to the abstract concept that

establishes the station as a static definition of movement - both vehicular and architectural.



The northern edge of downtown Houston will be home to the Houston Grand Central Terminal. Nestled between the Buffalo Bayou and I-10, the station would be immediately noticed by passersby along the interstate. As the first point of interaction with riders and Houston, the station serves as the gateway to the city. Surrounding buildings include mostly theatre/entertainment, commercial and civic occupancies. The University of Houston - Downtown campus is also only a few short steps from the site. With almost no tall structures in it's immediate surroundings, the site placement allows for wide panoramic views of the city skyline, and in turn gives passersby an uninterrupted view of the architecture. In this section, we can address the history and characteristics of the site.



Allen's Landing, early 20th century

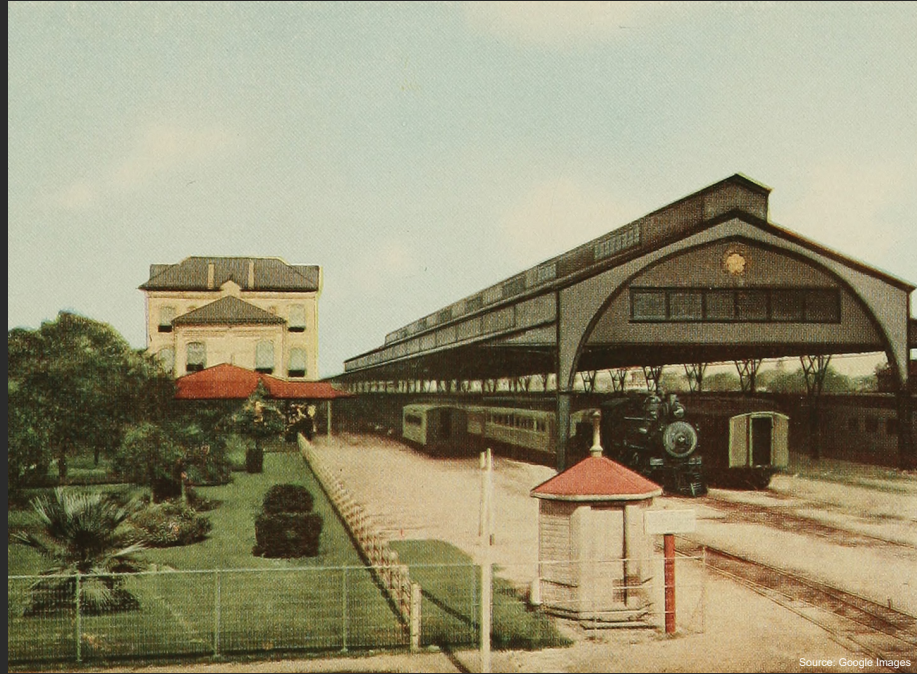
Allen's Landing

The city of Houston was founded in 1836, within months after the historic Battle of San Jacinto, which subsequently granted Texas its independence from Mexico. Only fifteen miles from the battlefield, two developers, John & Augustus Allen, purchased 6,642 acres of land in the area and settled the small town of Houston, which would one day grow to be the fourth largest city in the United States by population. The head of navigation for the river, located at the fork of Buffalo Bayou and White Oak Bayou served as the city's first wharf. Known as Allen's Landing, the original port of Houston is considered the birthplace of Houston.

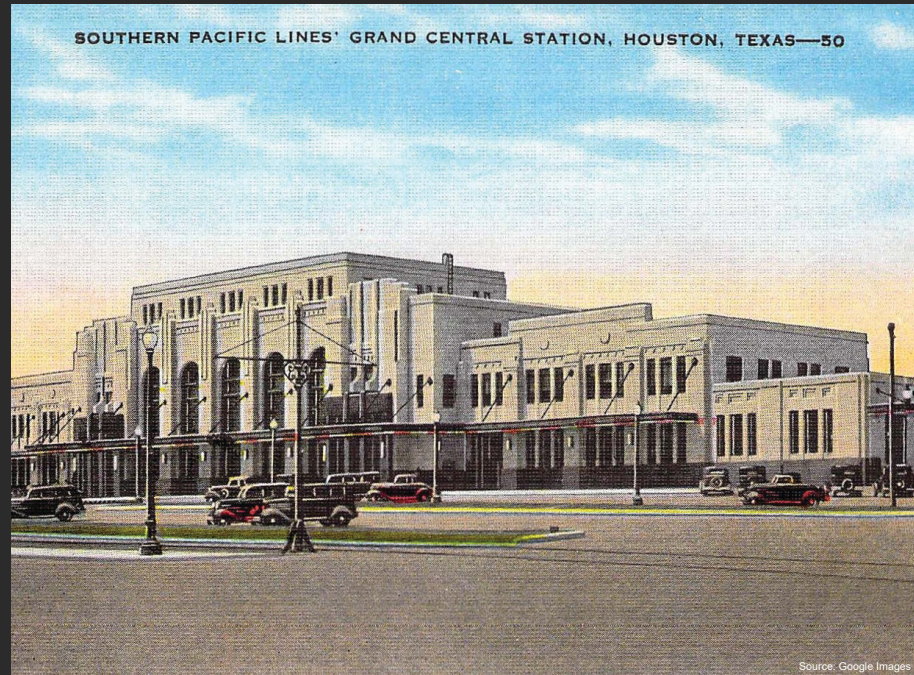
In 1910, the dredging of a ship channel further downriver consequentially moved the port of Houston from Allen's Landing to its current location, stretching across 25 miles of riverbank, and is now the second-busiest port in the United States. Today, Allen's landing is home to a small historical park to commemorate the city's founding.

The site for the Grand Central Terminal is located less than a thousand feet from this historic landmark and only further legitimizes its role as the gateway to the city.





Grand Central Depot, 1887



Grand Central Station, 1934

Houston Grand Central Station

Not to be confused with the famous station in New York City, Houston once had its own Grand Central Station, which actually preceded Manhattan's most recognizable station house by at least thirty years. This station was located on the very site that I have proposed for my own design. The original station was built on the Buffalo Bayou in the 1870s by the Texas Central Railroad and the city of Houston. The Southern Pacific Company later acquired the railroad and erected a three-story brick station in 1887 designed by George E. Dickey, and replaced it with a much larger Art Deco station made of Texas Cordova limestone and pink granite in 1934 by Wyatt C. Hedrick. The newer station was much shorter lived than its predecessor, as it was demolished in 1959 only to be replaced by a postal facility. Passenger rail had been in decline after World War II, and the need for larger stations was not as necessary. A significantly smaller station was opened shortly after the demolition of Grand Central Station, which still exists to this day. Use of Houston Union Station managed to survive for maybe fifteen more years before all Amtrak traffic in Houston was routed to the new Southern Pacific station in 1974.

“Where seventeen railroads meet the sea”, a phrase often used to describe the station that saw over one hundred passenger trains operate in and out on a daily basis. While my design pales in comparison to the scale of its predecessors in terms of locomotive traffic, I will do my best to pay tribute to the site's original function, which was destroyed sixty years ago.





Barbara Jordan Post Office, 1961

Barbara Jordan Post Office

Three years after the demolition of the Houston Grand Central Station, a postal facility opened on the site in 1962, designed by Wilson, Morris, Crain and Anderson - who would later go on to design the Houston Astrodome. Named after the civil rights activist, the Barbara Jordan Post Office remained in operation until 2015, when federal budget cuts forced its closure. Lovett Commercial obtained the property after its closure, with plans for future development, but remains abandoned to this day.

Plans for my design do not incorporate the existing structure, and would be demolished to return the site to its original function.



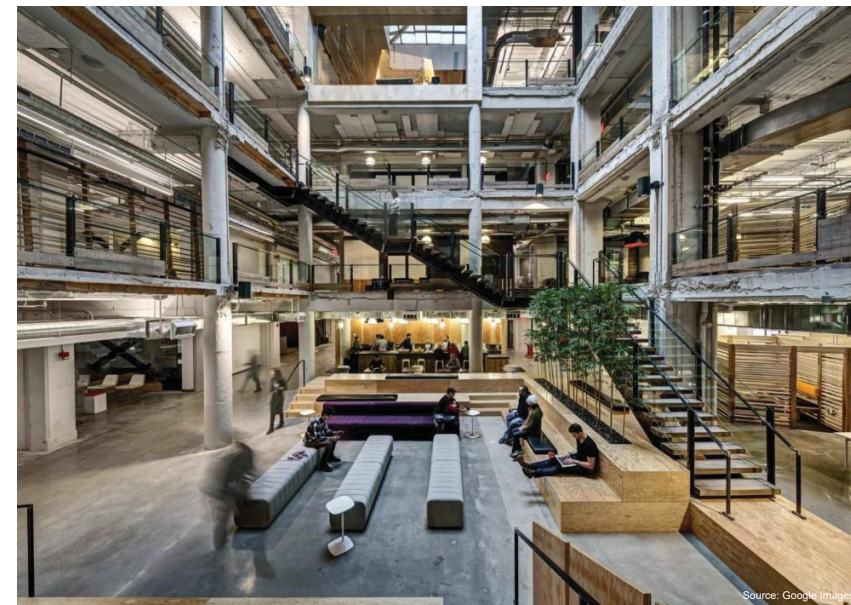


Post HTX, TBD

Post HTX

After the acquisition of the property, Lovett Commercial used the site as an event venue for a few years, hosting large scale parties and music events until recently. They have since been planning to redevelop the former Barbara Jordan Post Office into a massive mixed-use complex. Rem Koolhaus has been chosen for the design, which carves the existing structure into a series of pavilions. Featuring the world's largest urban rooftop farming operation and gardens, park areas, and even an auditorium.

Planning is still in its early stages, and while it has not been officially announced, there is a significant amount of public support behind the project. Even though my current design has no public support or funding, I would fully support the development.





Grand Central Terminal, 2019

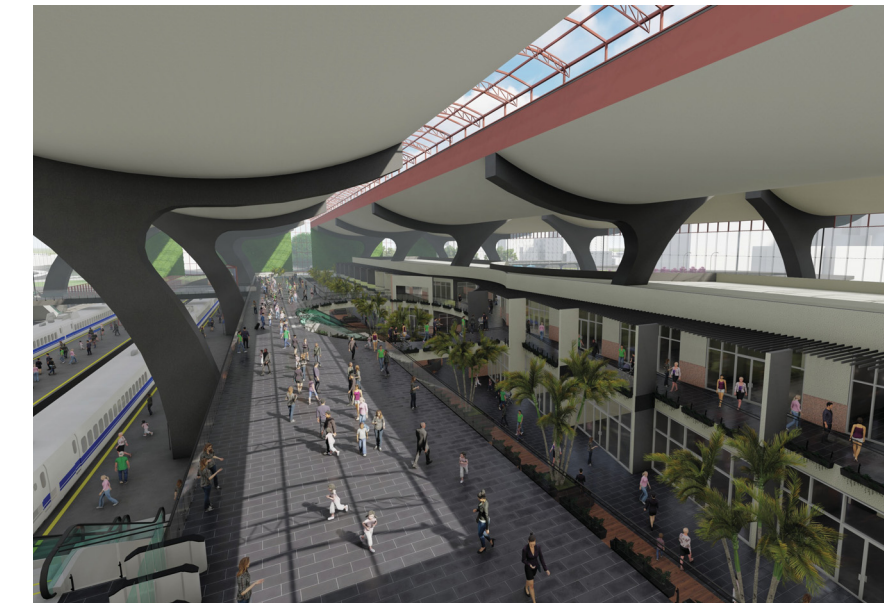
Houston Grand Central Terminal

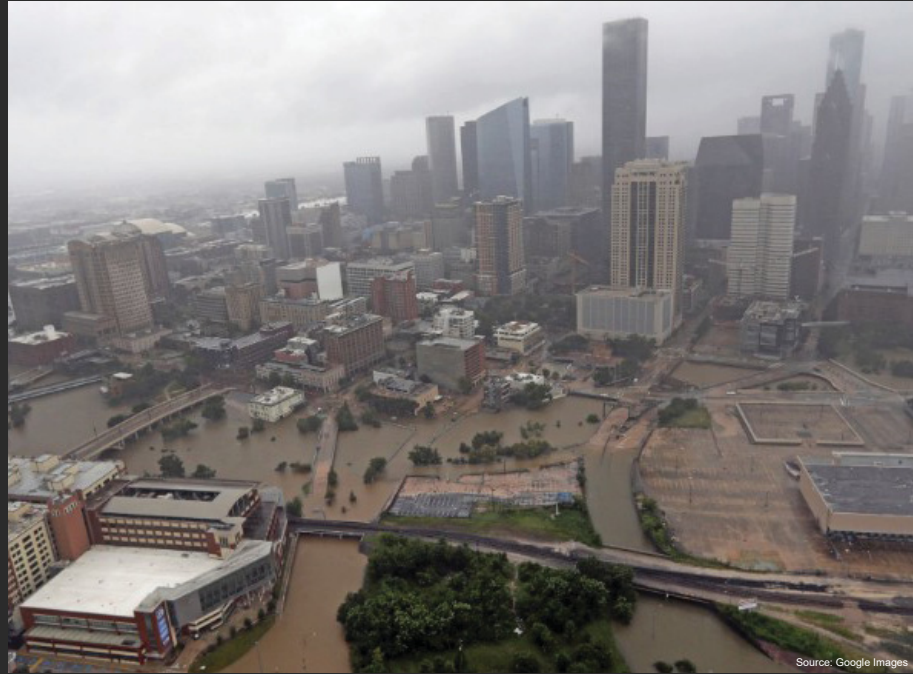
Coming full circle, my design would return the site to its roots as Houston Grand Central. Larger than before, it will become more than just a station house - it would become a hub of transportation, dining, and retail services unlike anything else in the Houston area. This terminal would be a trailblazing project for this advanced means of travel in the United States.

Competing with the amenities of airports, services within would be available to all, without having to go through a security checkpoint first. This added convenience could potentially draw a larger number of users, without the necessity to have a boarding pass to utilize those services.

The vast open spaces give users great awe and fascination in a way that rival the great train terminals of Europe. Massive pillars to support a shallow, inverted barrel vaults that stretch the entire length of the terminal dwarf the human scale and give pause to occupants for deep reflection and bewilderment.

With four platforms, trains would be leaving every half hour, connecting Houston and Dallas in 90 minutes. Like most train stations, boarding passes would be required to get onto the platforms.





Hurricane Harvey, 2017

In August 2017, Hurricane Harvey devastated the city of Houston with flooding on an unprecedented scale. The Buffalo Bayou crested at nearly 42 feet, submerging homes and businesses all over downtown and its surrounding areas. Costing a staggering \$125 billion in damages, the Harvey is tied with Hurricane Katrina as the costliest Atlantic hurricane in recorded history.

The site lies on the edge of the 100-year flood plain, and subsequently had minor damage as a result of the disaster. As lucky as the abandoned building was, it still is not 100% protected from potential flood damage, and must be provided with additional flood prevention design interventions to protect the building and businesses within.



Redfern Park, Minto, Australia

Design intervention strategies to combat flooding have many precedents. Redfern Park in Minto, Australia utilizes a detention basin in the western portion of the park that doubles as an amphitheater. Recognizing the practicality and multi-purpose aspect of the project, I immediately grasped on this idea and incorporated a similar storm management technique into my design.

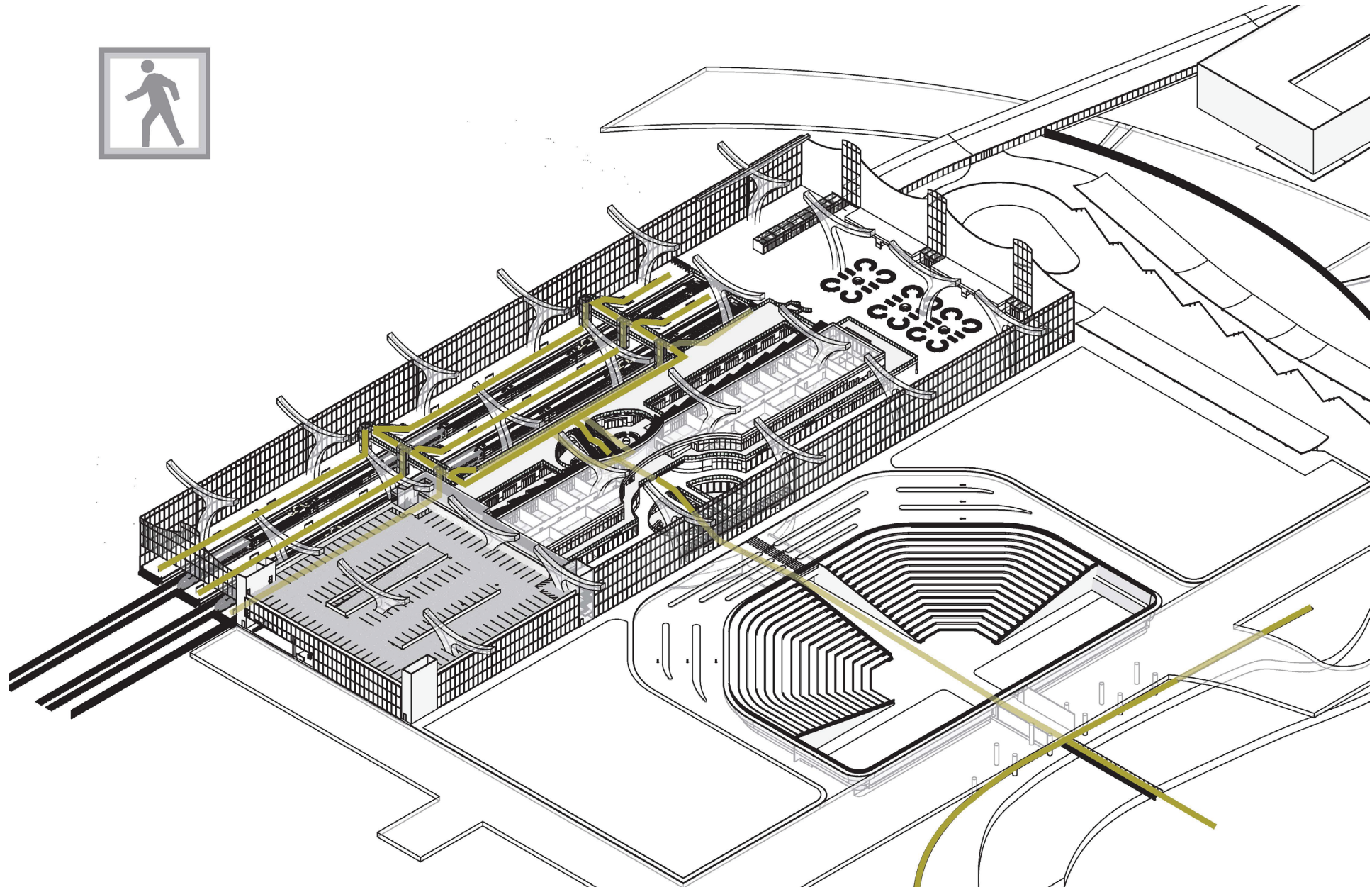


Grand Central Outdoor Theatre

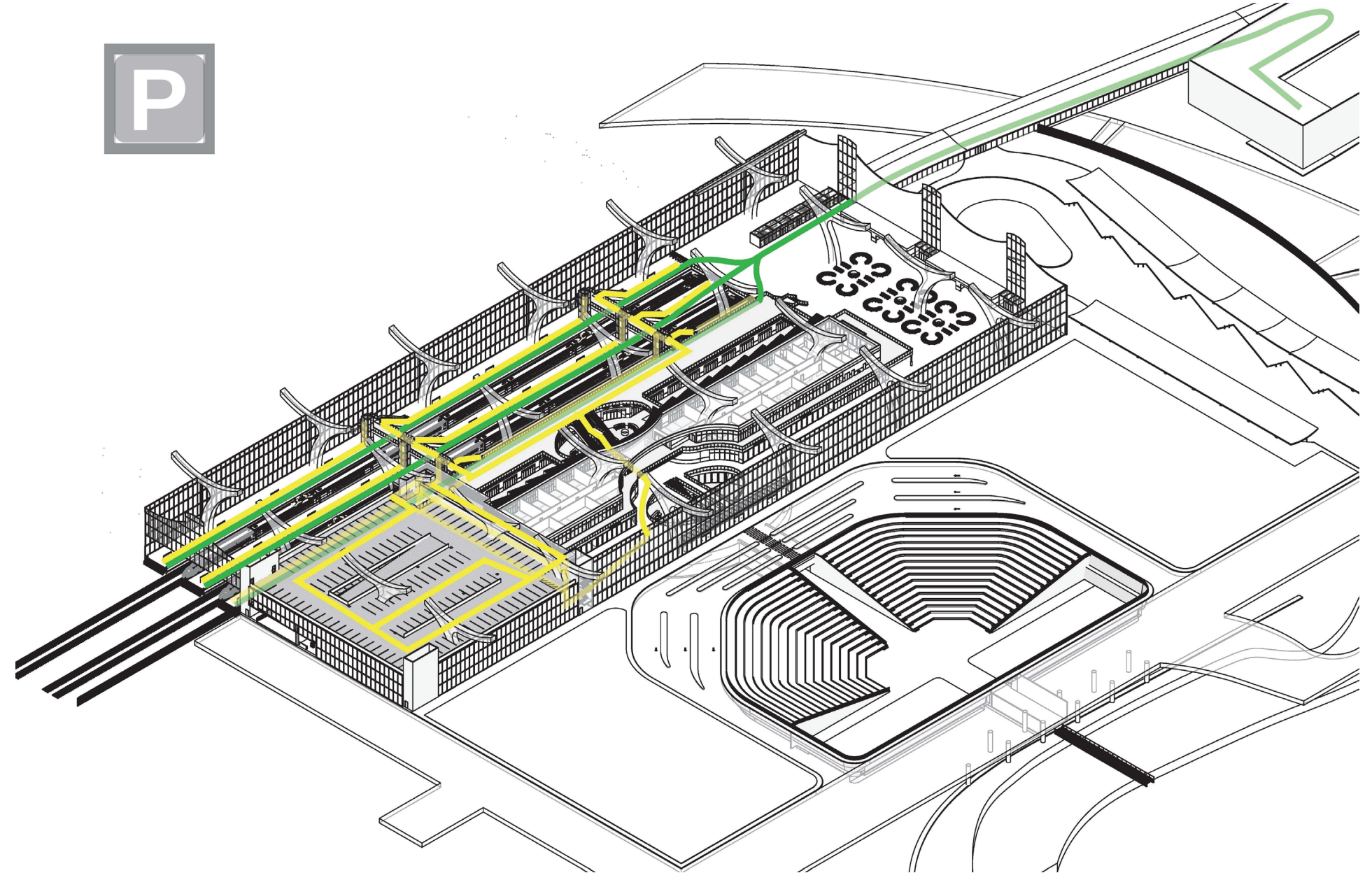
Directly in front of the Houston Grand Central Terminal lies the Grand Central Outdoor Theatre. Opening up to the Buffalo Bayou, the amphitheater provides a panoramic view of the Houston skyline. Going back to the notion of tying this design into the urban fabric, the theatre becomes an extension of both the Buffalo Bayou trail and the Houston Theatre District.

04 Modes of Movement

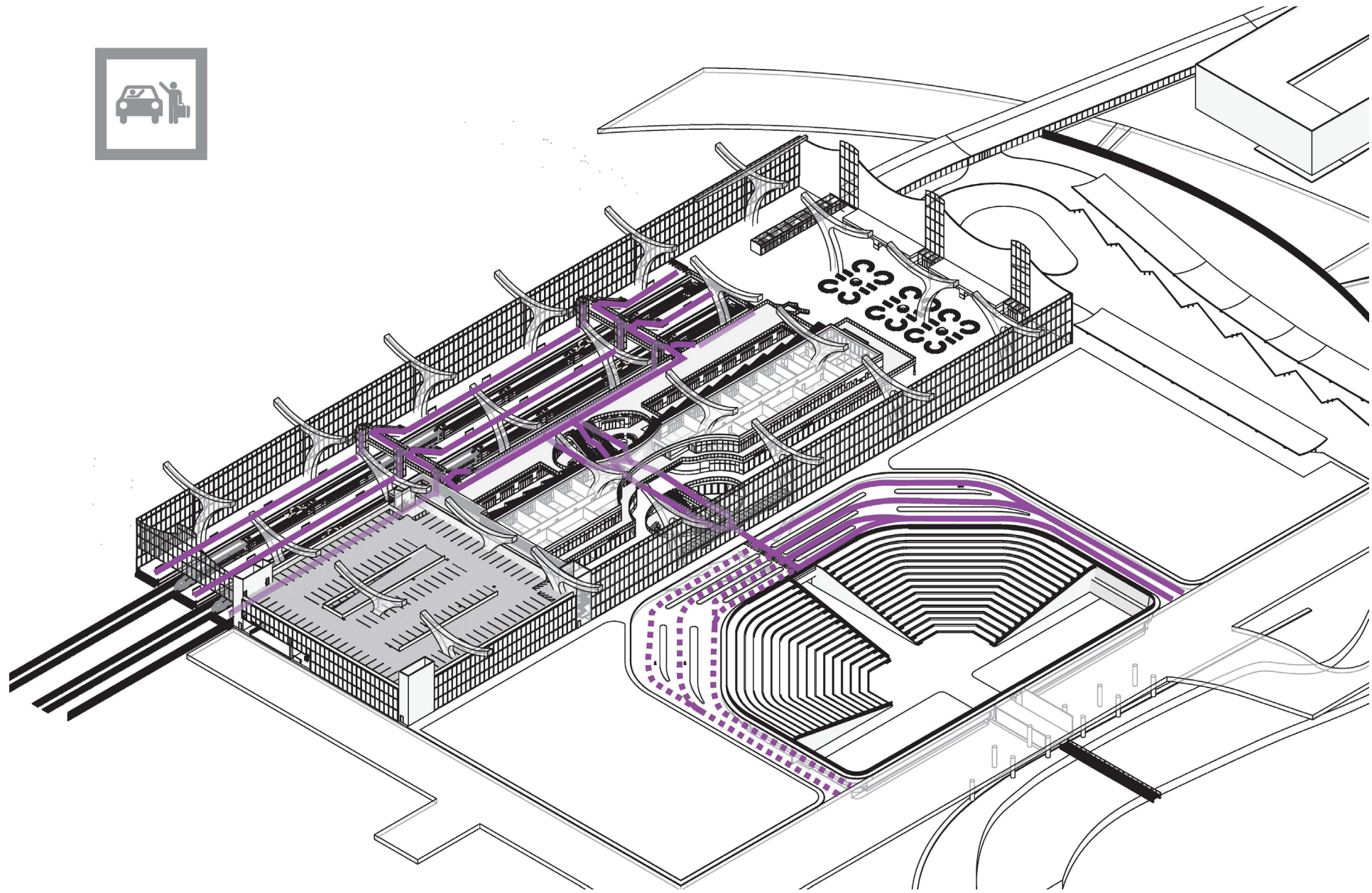
The whole point to bringing the station to the edge of downtown Houston was to allow for more variety and ease of transportation access. Access for pedestrians, personal vehicles, and public transportation became a key factor for defining the impetus of locomotion. Through a series of entraining diagrams, I have laid out idealized footpaths for riders as they disembark their mode of transportation, so that they may embark the train, and vice versa. It is important to note, however, that on the case of light rail rider access, riders will have the opportunity to transition from the Houston Metro Rail station at the University of Houston - Downtown campus to a people mover, which will carry them non-stop directly into the Houston Grand Central Terminal itself, only steps away from the platforms.



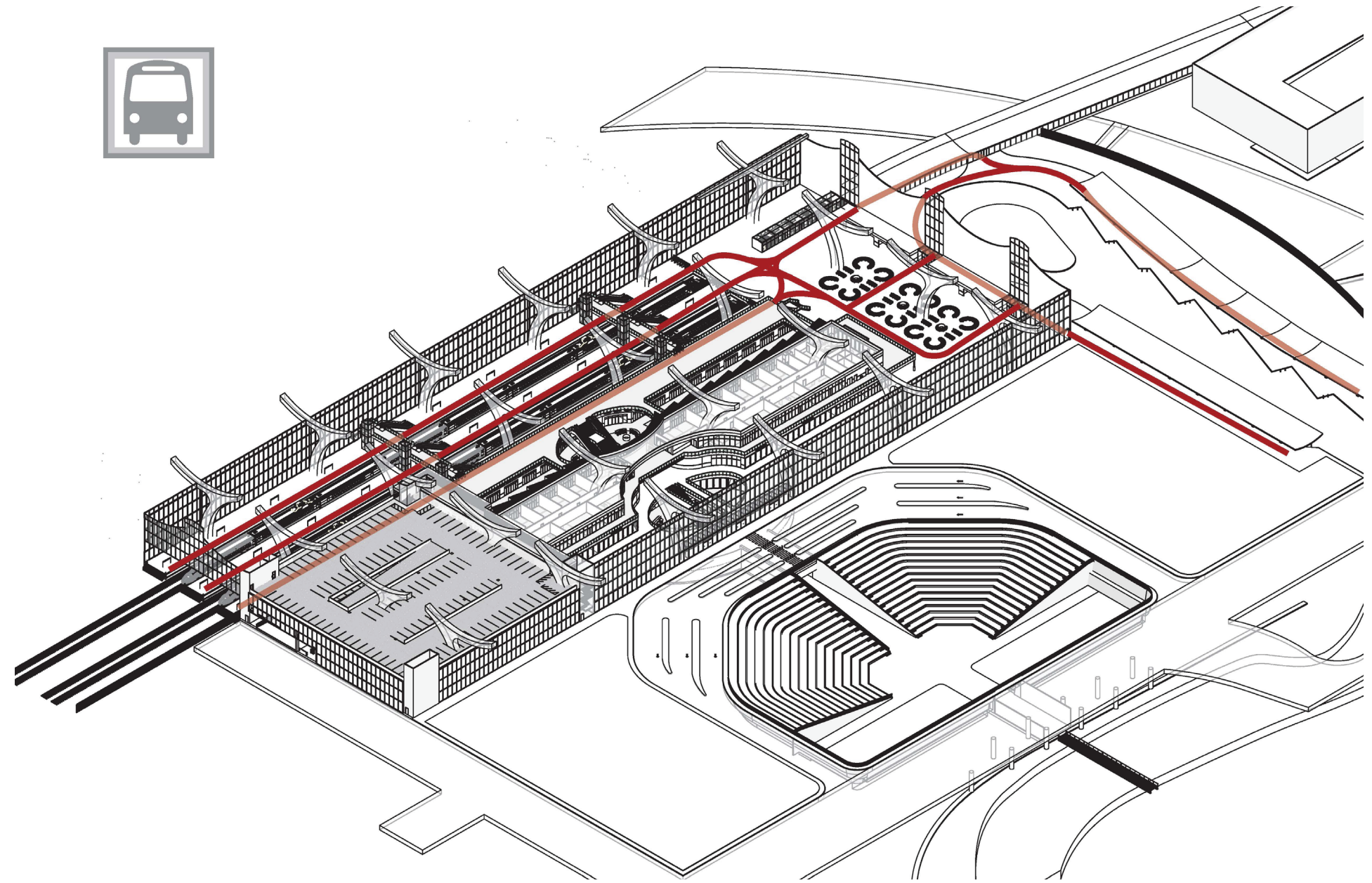
Entraining - Pedestrian



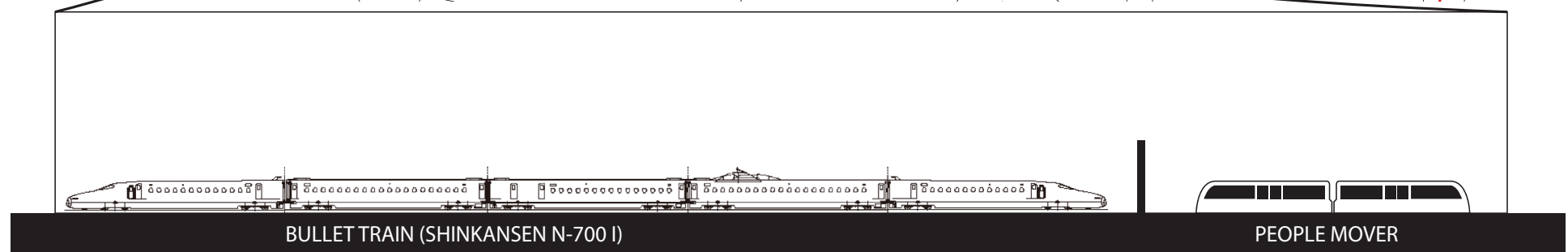
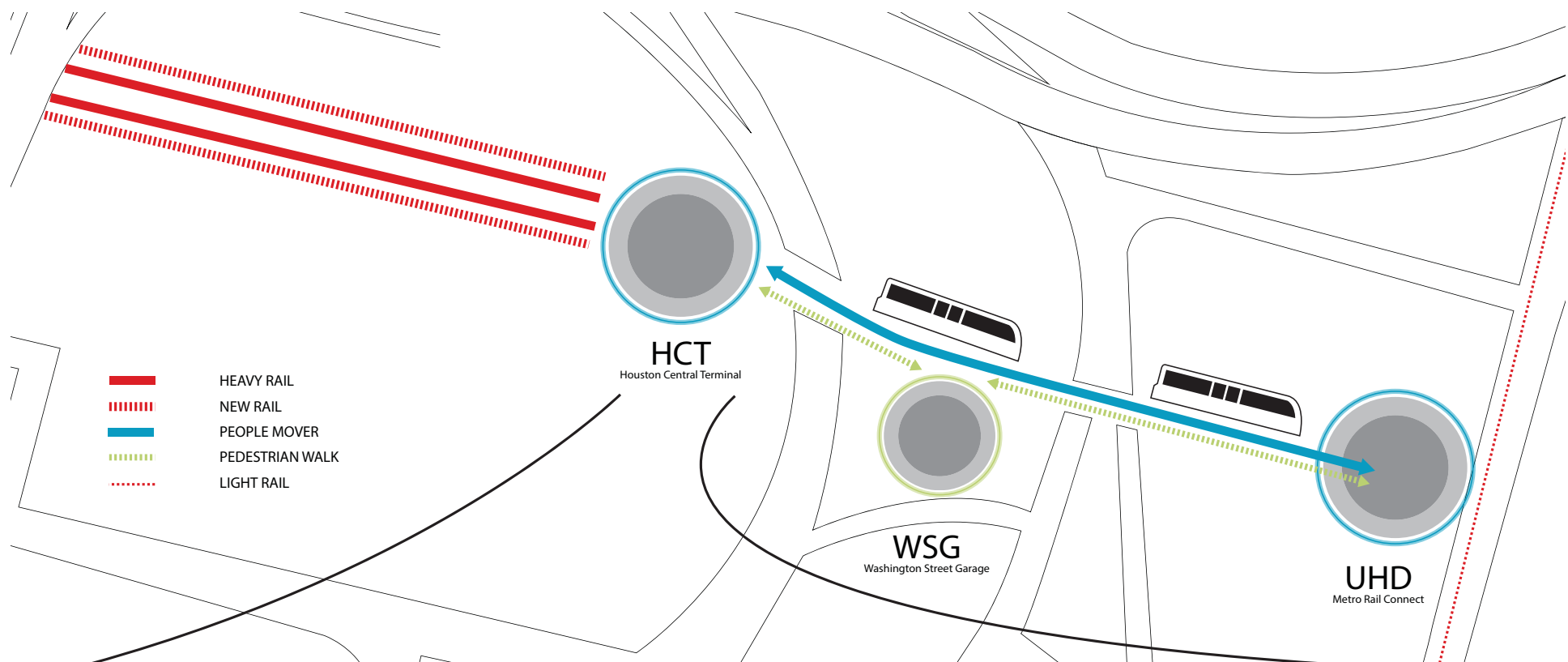
Entraining - Parking



Entraining - Drop Off



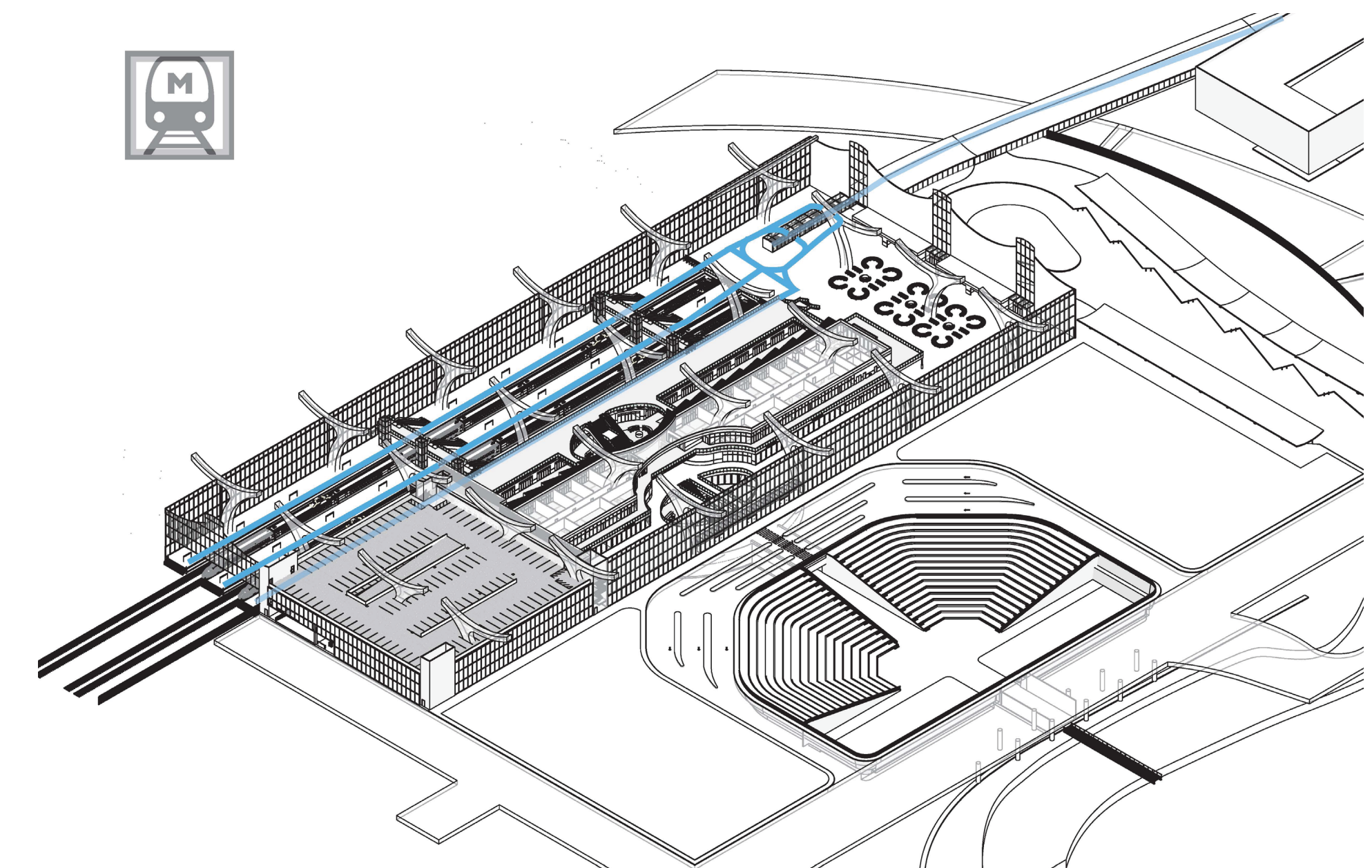
Entraining - Bus



← TO DALLAS

TO HOUSTON METRO RAIL →

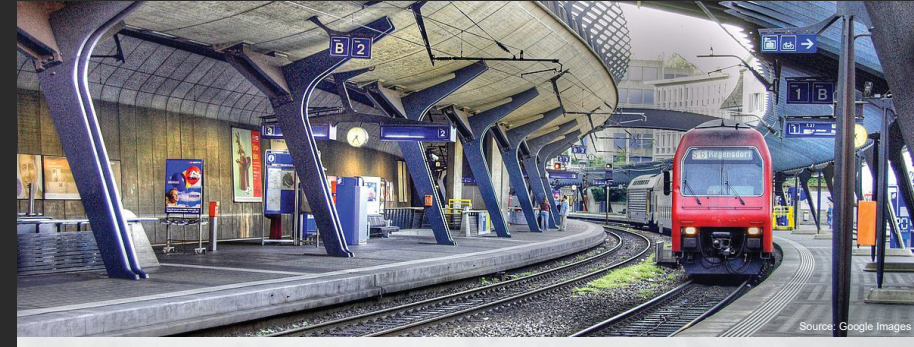
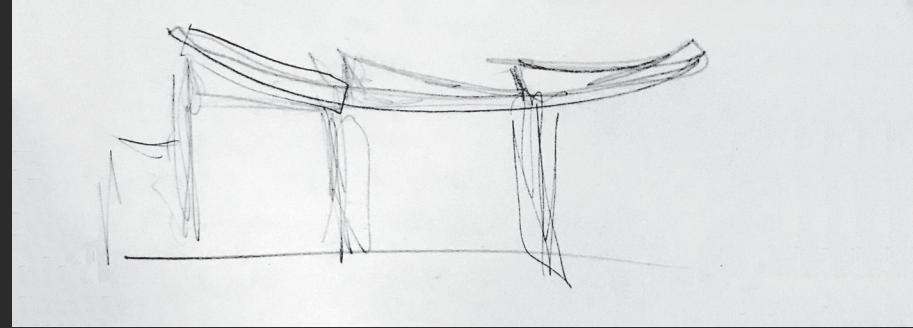
Light Rail Transitions



Entraining - Light Rail

05 Architectural Movement

The other key point to this thesis is how the architecture itself invokes that movement in a static way. Architectural form is a powerful tool to trigger an emotive response in occupants, often in their subconscious minds. My design interventions are often inspired by specific precedents that I have observed and admired throughout my architectural career. This can be easily achieved through certain styles of architecture that use the “amorphous blob” approach, using an excessive amount of parametricism to give the illusion that their architecture is alive. The challenge that I wanted to tackle however, was to accomplish a similar illusion in a more subtle way.



Dulles International Airport

Eero Saarinen is widely recognized for some of his monumental works including the now abandoned terminal at John F. Kennedy Airport in New York and the Gateway Arch in St. Louis. My favorite design of his, however, is another airport terminal he designed at Dulles International Airport just outside of Washington, D.C. Using the simplest of forms, he managed to create architectural movement with a single catenary curve, suspended from massive pillars along the length of the terminal.

This design is what inspired me to pursue a similar approach to architectural movement in a simple, yet beautiful way. The gentle curve and monumental pillars serve to become a great theme in my own design, influenced by the precedent found in Saarinen's modern architecture.

Rotherham Central Station

While Saarinen's work brought my initial inspiration, I sought to bring more precedent into my design to create a truly unique piece of architecture. I discovered that another train station in England also used a convex ceiling much like that of Dulles. However, it is broken up into segments, where the separations between are filled with skylights and give the roof profile the impression of waves in the ocean. Always moving, yet always static. These separations would give my design a similar feeling, and also be used as a visual separation of each concourse of my station design.

Zürich Stadelhofen

During my travels in Europe, I came across this station in Zürich, Switzerland, where I was immediately captivated by the forms of its structure. If implemented on a larger scale, it would completely baffle myself and others. The design of the pillars in my own design drew inspiration from Stadelhofen, but take it a step further in terms of scale and captivation.

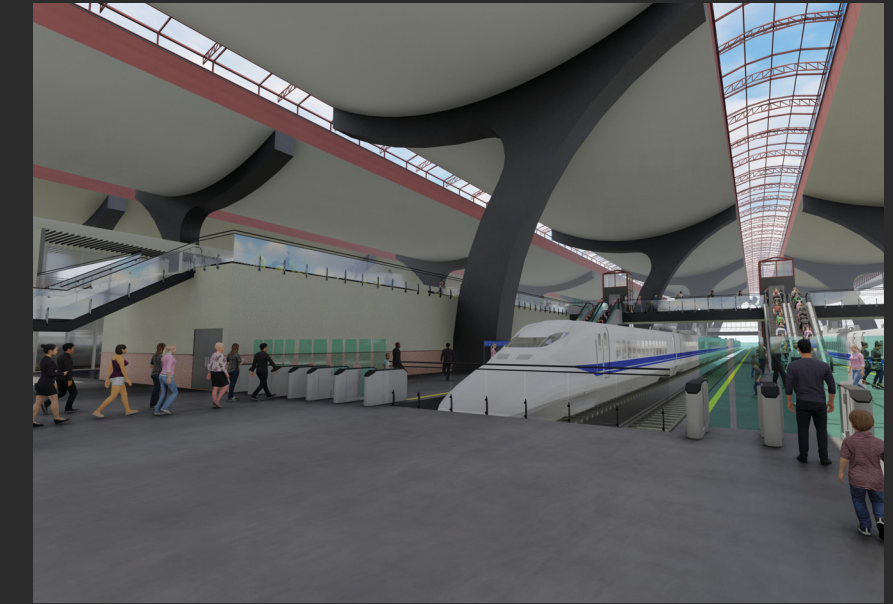
Shinkansen N-700 I Bullet Train

Even the train behind the project provides architectural inspiration to form. The very form lines in the body of the locomotive have their own special quality to them. Almost as if there is a "peeling away" aspect to the way in which the form lines separate from each other to create the most aerodynamic train possible. This peeling effect makes it way into the design of the station in the most subtle of ways, both literal and abstract.

Dynamism in a Static Environment

The design eventually became a crucible of my precedents. The swooping convex ceilings inspired by Eero Saarinen's Dulles Terminal demonstrate subtle architectural movement with shallow curves that direct the eye across the surface. Breaking up the convex curves of the ceiling are a series of concave skylights, which in profile, create a wave illusion similar to that of Aedas' Rotherham Central Station - a more literal representation of movement. While this separation was necessary for structural feasibility, it also allows light to flood the vast spaces below. The columns at Santiago Calatrava's Stadelhofen station are reinterpreted on a colossal scale in this much larger train station and draw the eye upward with awe and bewilderment - wondering how such a structural feat is even possible. The bullet train "peeling effect" was implemented in the mall concourse - by angling the storefronts, the wall seems to shed away from an otherwise straight row of retail businesses. The intervention creates an emphasized shadow line, adds a considerable degree of contrast to the eye, and even encourages occupant movement to gain a full visual of each storefront.

Dynamism in the architecture is captured by these design interventions, subtle moves creating powerful responses in the social and behavioral factors of design.



06 Program

Almost every building serves some sort of purpose in terms of architectural program. Occupancies and user intent often plays a key role into the inception of design decisions. By establishing the wants and needs of our clients, we can design the best possible building that will satisfy those requests. With such a massive building, it is likely that multiple programs will be required for a fully functional design. After observing other stations across the nation and other mass transit facilities, I have established program criteria that will contribute to the overall performance to the building at large. Also due to the massive size of this project and the time frame given, it is important to note that while broad program specifications have been set, it will not be part of the thesis scope to individually design each individual programmed space.



Train Platforms

The hallmark of the project, platforms will be required to accommodate heavy rail lines for the bullet trains. The train will be in an 8-car configuration, at over 670 ft long.



Waiting Spaces

To relax and unwind, riders will have plenty of space to get off their feet before their trip.



People Mover Platform

In order to transport riders from the light rail station at the UHD campus, a people mover will be required to transition them from one station to the other.



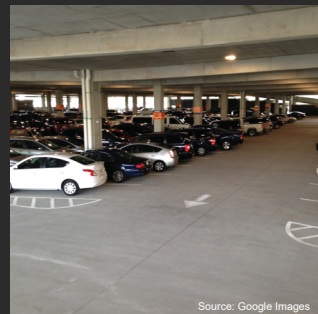
Office Spaces

Station administration will require spaces to work, including places for security, luggage storage, car rentals, and information - with extra space for private firm office leases.



Retail Spaces

Either while waiting for trains to arrive or for personal pleasure, occupants will have the opportunity to shop, similar to any airport.



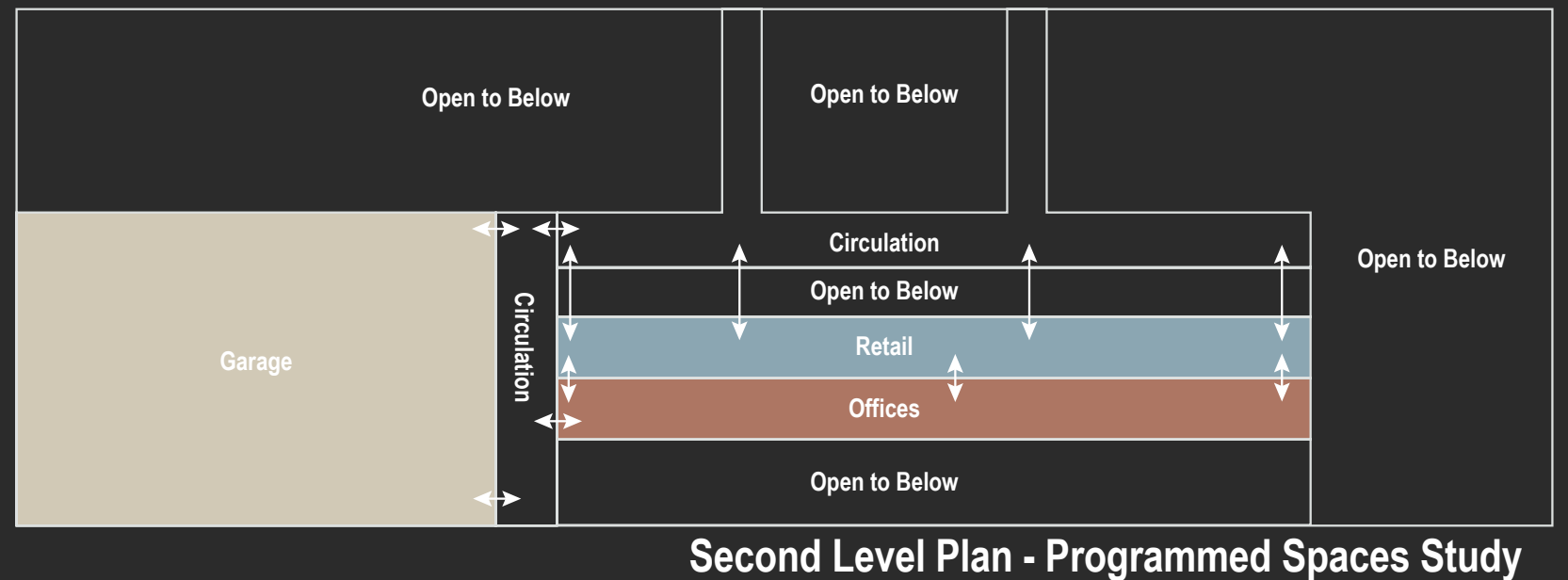
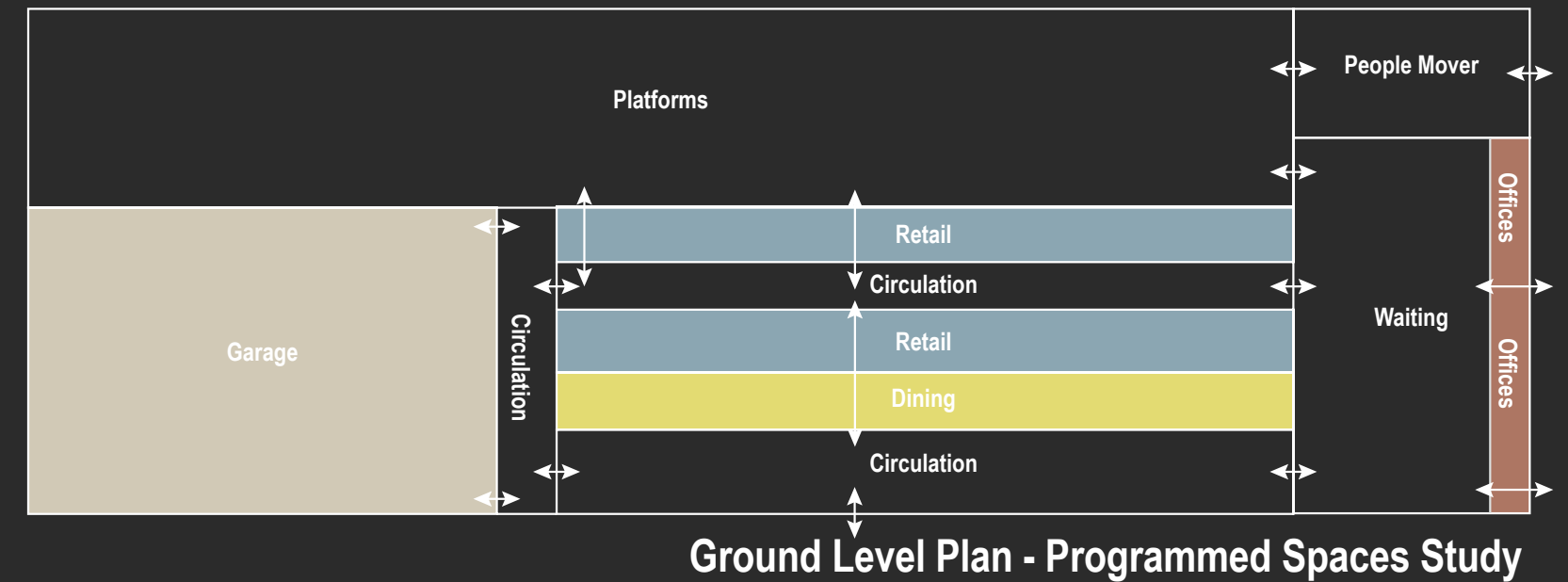
Parking Garage

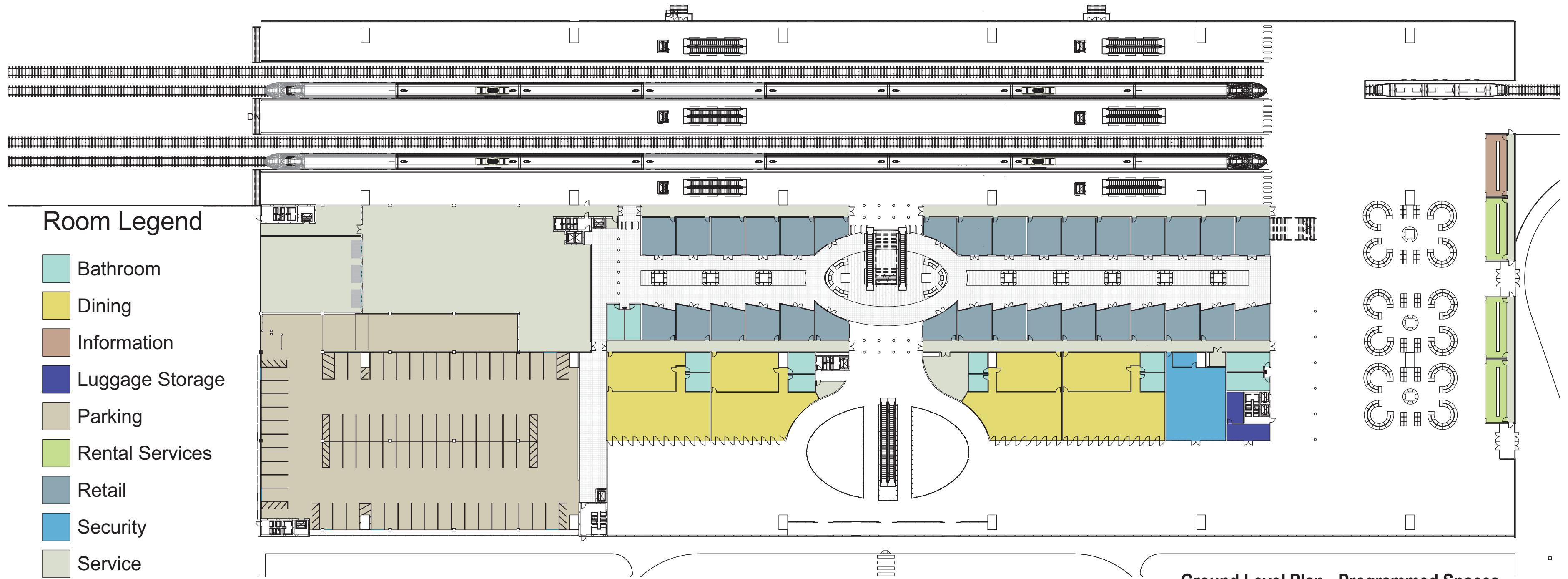
Texas car culture will never go away overnight, and thus must include parking space for personal vehicles for employees and riders.



Dining Spaces

Occupants will have several dining opportunities, both quick service and restaurant sit-down style.






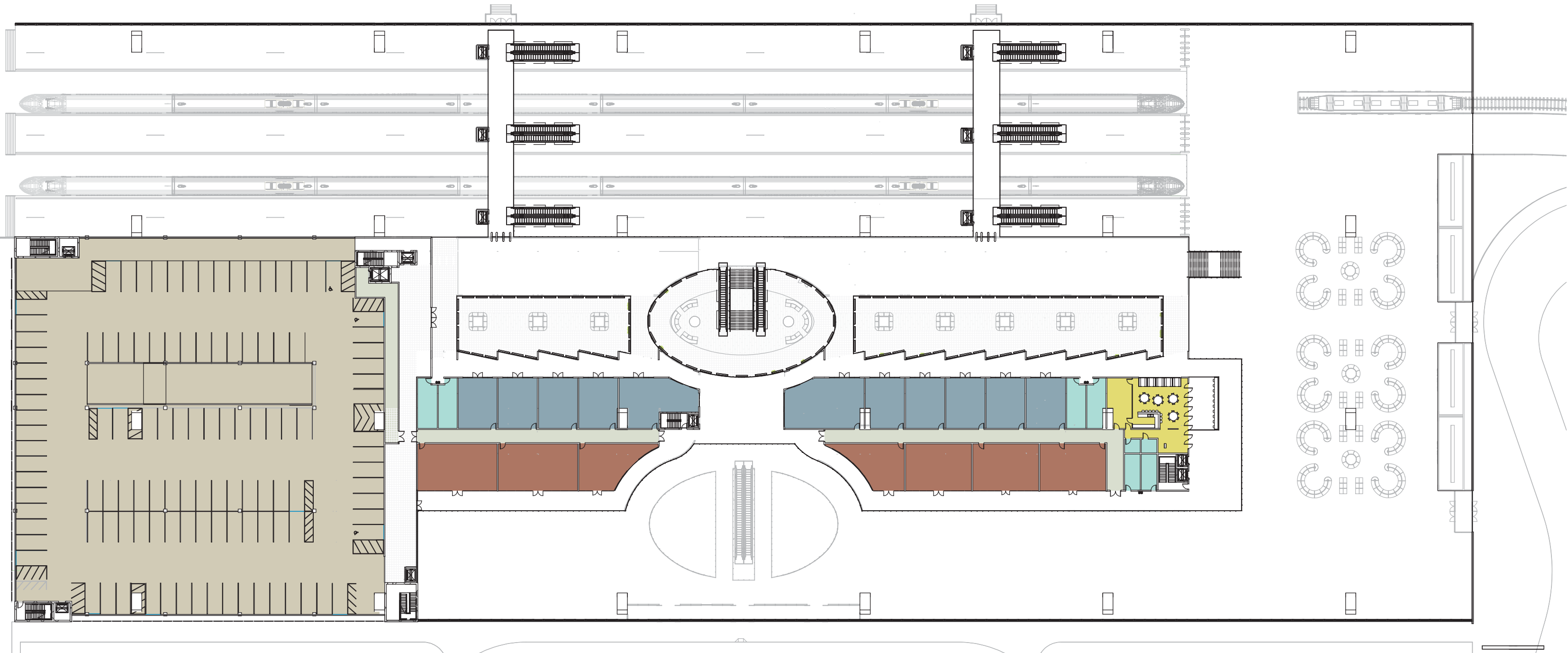
Room Legend

- Bathroom
- Dining
- Information
- Luggage Storage
- Parking
- Rental Services
- Retail
- Security
- Service

Ground Level Plan - Programmed Spaces

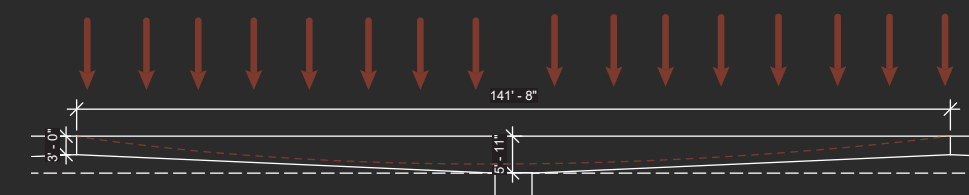
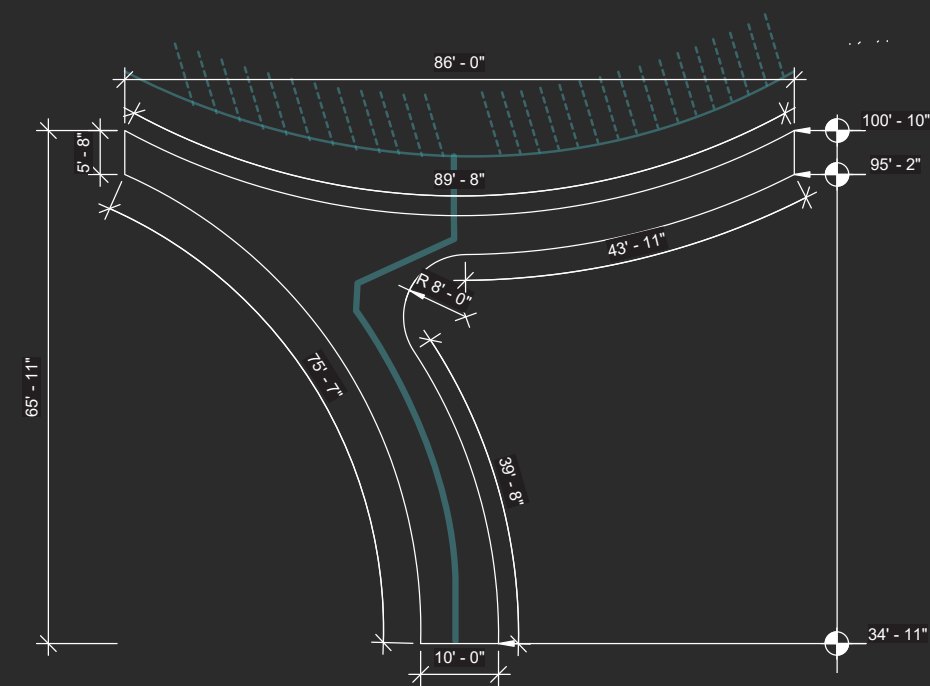
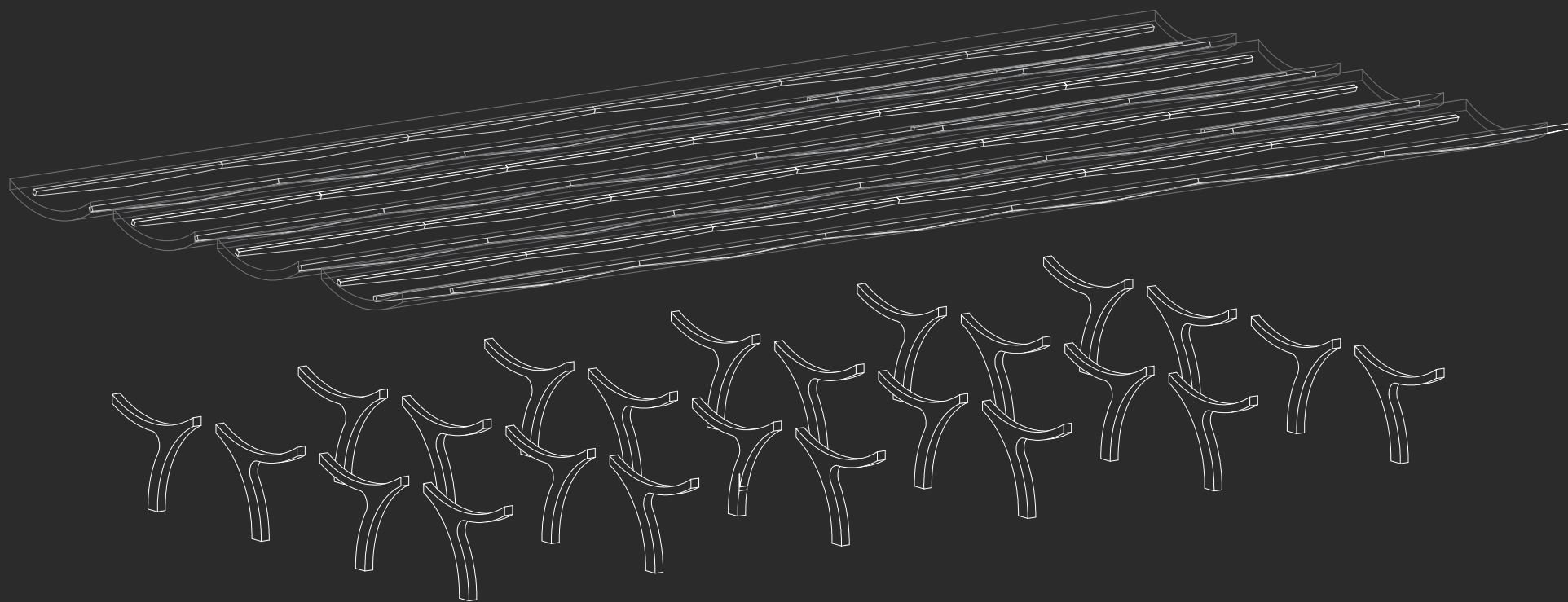
Room Legend

-  Bathroom
-  Dining
-  Office
-  Parking
-  Retail
-  Service



Second Level Plan - Programmed Spaces

Probably the most important aspect of architecture is structural integrity. Occupant safety should be the number one priority of any designer, and must be able to accommodate to that standard. My structural system became a central theme of architectural form in addition to its feasibility. After consulting with a structural engineer, I have been assured that my structure will function as intended, without sacrificing design intent.

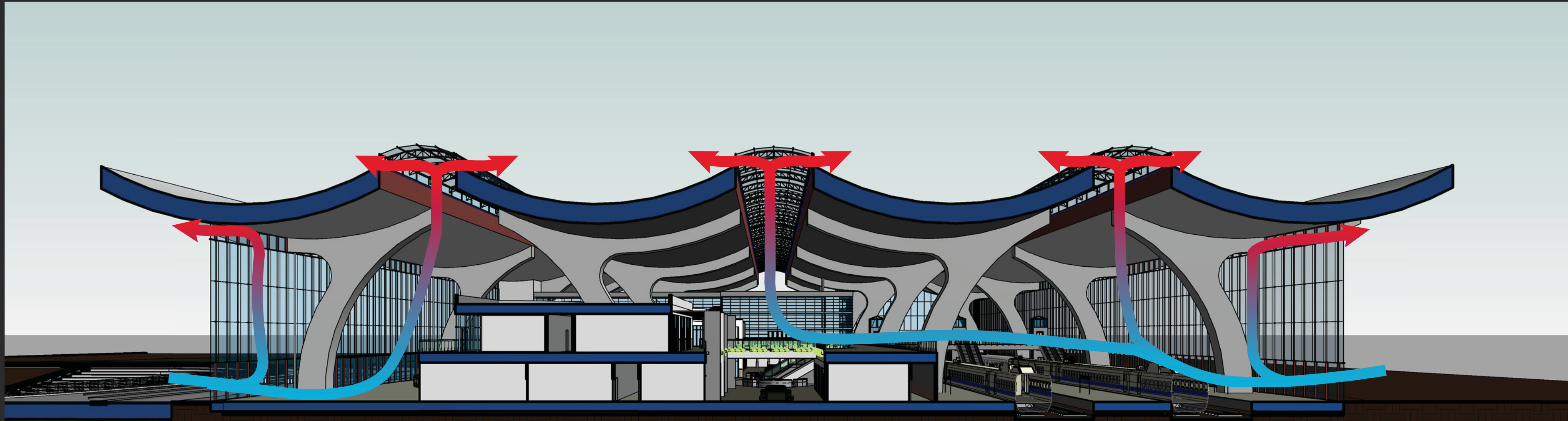


The most eye-catching piece of the entire design lies in the massive concrete pillars that support the vast convex ceiling. The first thing to notice is that the main vertical element does not meet the horizontal in the middle, where the loading forces are at their strongest. To counteract this, the vertical member is placed at an angle, redirecting the load tracing to establish equilibrium. In addition, moment forces at the point where the vertical and horizontal members meet would be staggering, and has thus been accounted for with a substantial amount of material to stabilize that moment connection. Another functional point to note is that with a roof curving down the way that its is, rain will pool on the roof and

needs somewhere to go. These columns were the obvious place to embed a drainage system that expels storm water from the roof out to the Buffalo Bayou.

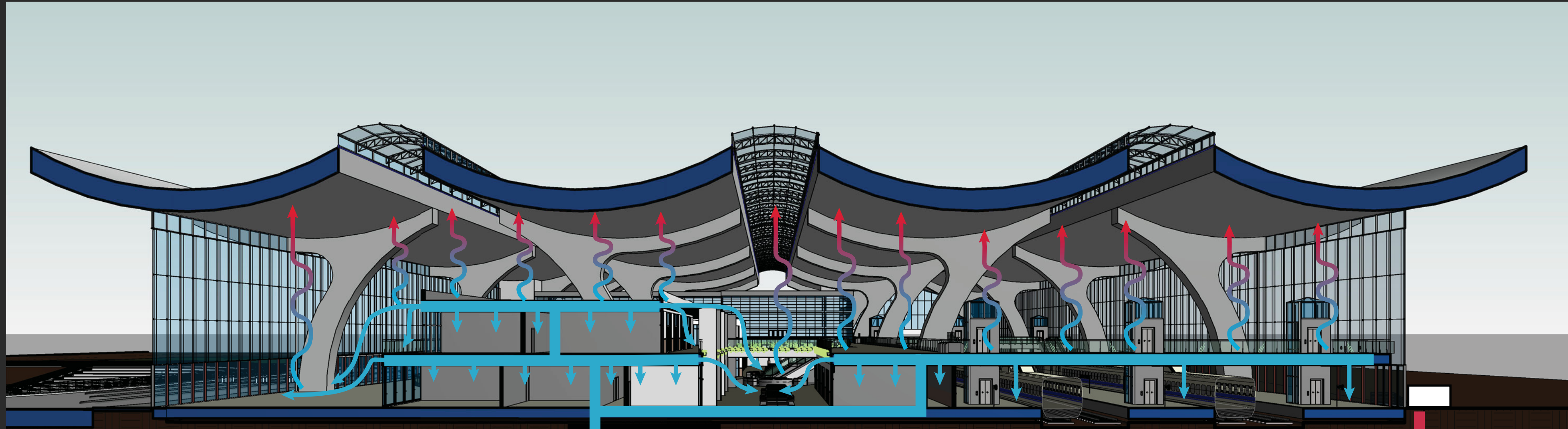
The second primary structural element is the beam system that makes the massive span between pillars possible. Post-tensioned concrete beams that cantilever to half the distance of the overall span, to meet another identical beam supported by the next pillar in the structural grid. Loading forces are strongest in the middle, where it will be placed on top of the concrete pillars. Material has also been trimmed away from the bottom of the beam, as allowed by bending forces.

With such high ceilings, there is a lot of unoccupied volume in the station. This is problematic from a heating & cooling perspective due to the amount of area that would be required to air condition, especially in the hot and humid Houston climate. Tackling the issues of how to circulate the sheer amount of air and keep occupants comfortable became a challenge in of itself.



Natural Ventilation

Since the building is not air tight, natural ventilation will help expel stale air from the building and ensure that fresh air is always being circulated. Fresh air can penetrate the buildings through openings at the lowest levels and eventually work its way up the space as it is expelled through operable windows and louvers at the top of the exterior curtain walls and skylights, respectively.



Mechanical Systems

Houston often reaches temperatures in the triple digits, especially in the summer. Air conditioned spaces are the standard if you don't want a sweaty, angry mob out for your blood. Air will be mechanically brought in through air intakes along the north exterior, where it will be pumped through a geothermal system underneath the station into a underground mechanical room. Air can then be brought up and distributed to the programmed spaces, and also out into the open air concourses. The conditioned air will settle at the ground plane, and warm air will rise above the occupied levels, and later expelled.



Materials are often one of the last things that architects think about when it comes to design. Sometimes their decisions are simply aesthetic, sometimes there's more reason behind them. I'd like to share a few of my material accents and the reason why I chose them.



Texas Pink Granite

Texas Pink Granite is a material that has found its way into Texas architecture for a number of years. It can be commonly found throughout the state, and even composes the entire exterior of the Texas State Capitol in Austin. More specifically, the original station that was designed in 1934 by Wyatt C. Hedrick was built on a base of pink granite.

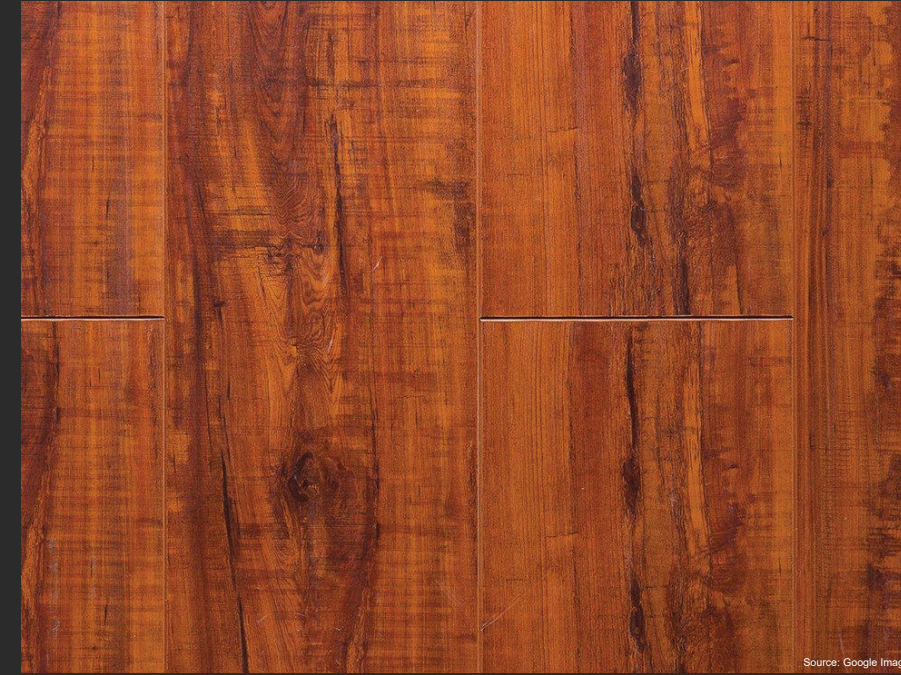
In an effort to pay tribute to the state of Texas and the preceding station, I incorporated pink granite as a base material for interior spaces.



Cherokee Red Paint

The color Cherokee Red is a paint that is commonly found in designs by the notoriously famous American architect, Frank Lloyd Wright. I have always admired works by Wright, studied his life and career, and even visited a few of his buildings, including his most recognizable design, Fallingwater.

At Fallingwater, Cherokee Red was most commonly used in the mullions of his windows. I wanted to continue this theme by using the same palette for my own mullions and in the fascia of the roof as well.



Bald Cypress

The Bayou City is littered with Bald Cypress trees. A tree that can grow submerged in water, it was never out of its element when Hurricane Harvey devastated Houston, signifying the resilience of the city and its citizens.

Bald Cypress lumber is used as a flooring accent in the mall concourse and as a wall cladding material in the Bayou level food court.

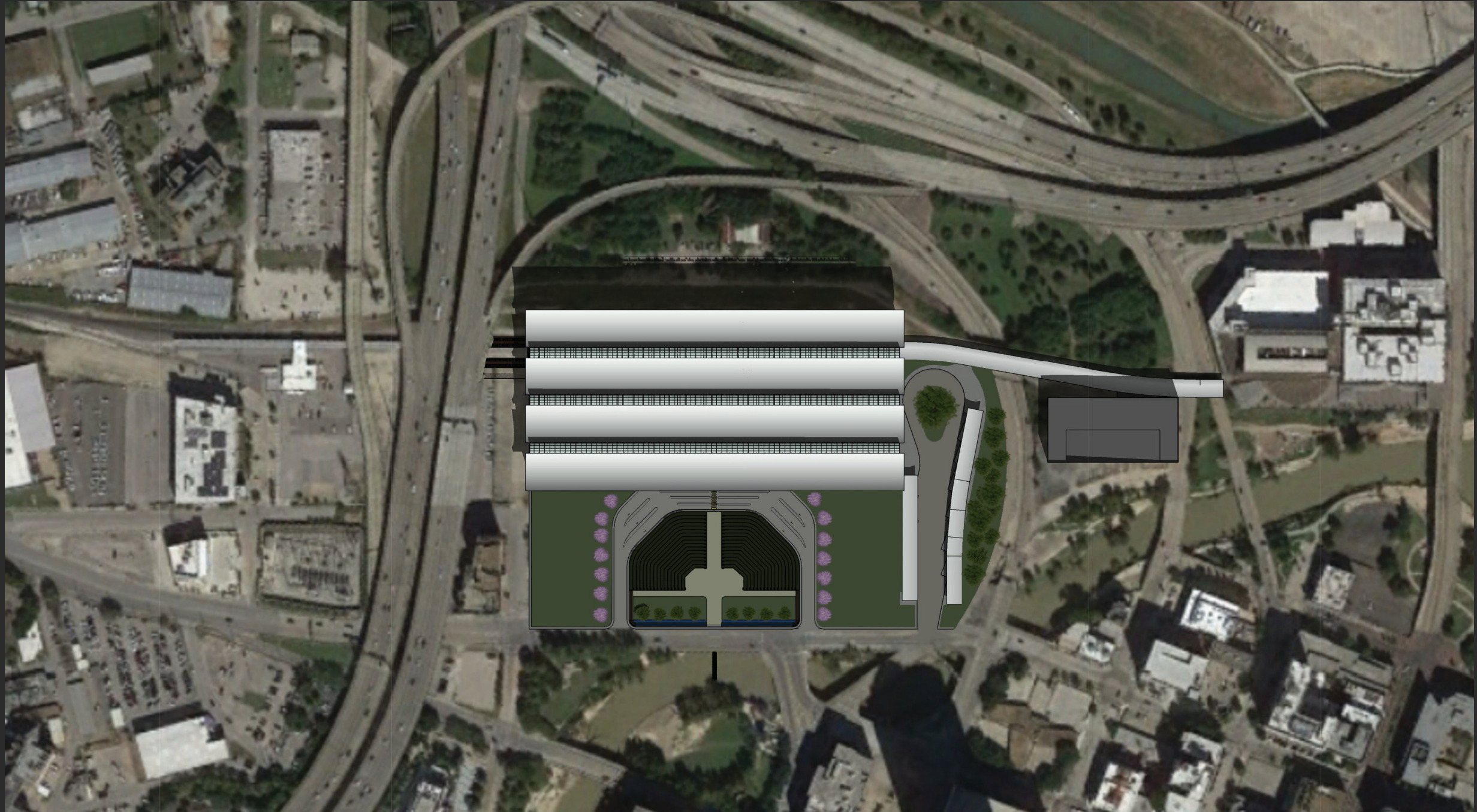


Black Slate Tile

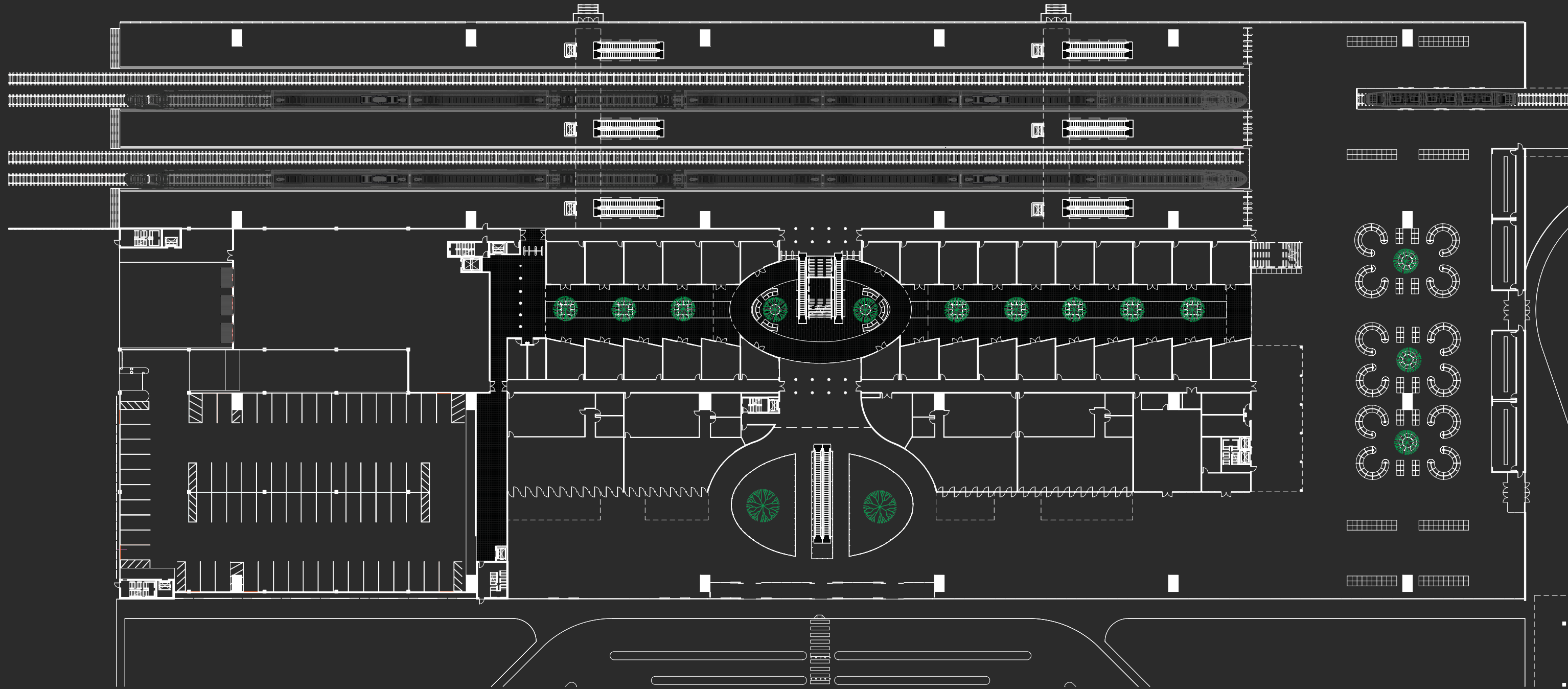
In a more aesthetic approach to how to contrast the Bald Cypress flooring, I decided to use black slate tile to surround the wood in the mall concourse.

10 Drawings

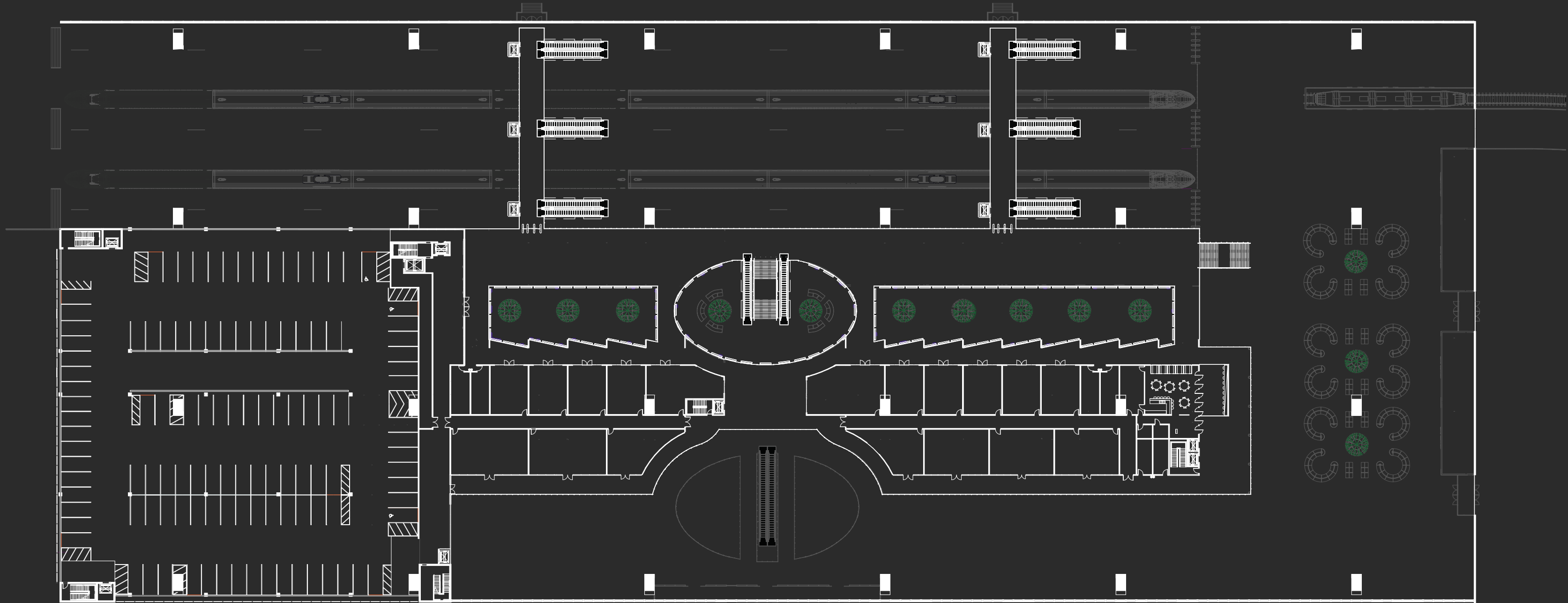
Every great building requires drawings to convey the architect's vision. They provide the blue prints to construct the design as intended. While a normal construction document set for a building of this size would be in the hundreds, if not thousands, I have decided to only present the key drawings that will hopefully allow readers to get a better grasp of my vision. Included are a series of floor plans, elevations, sections, and a few small details.



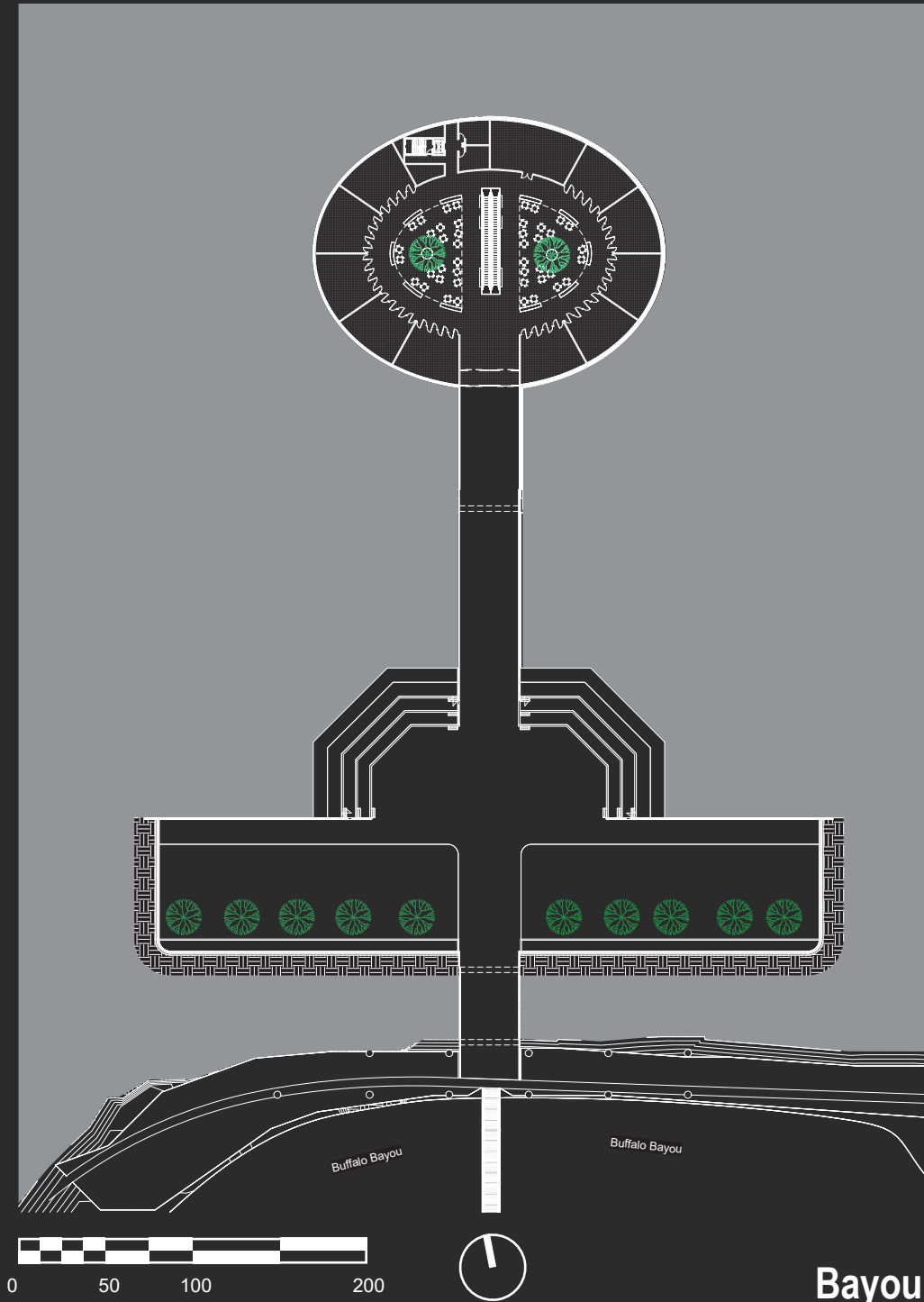
Site Plan



Ground Level Plan

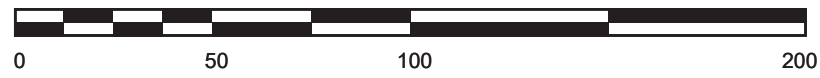
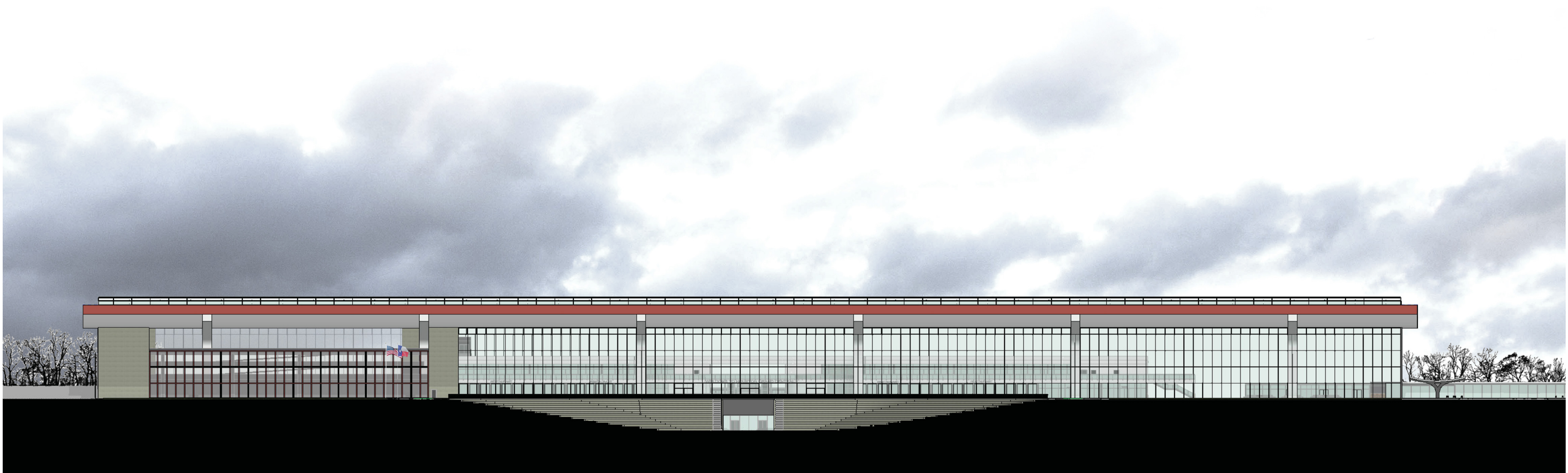


Second Level Plan

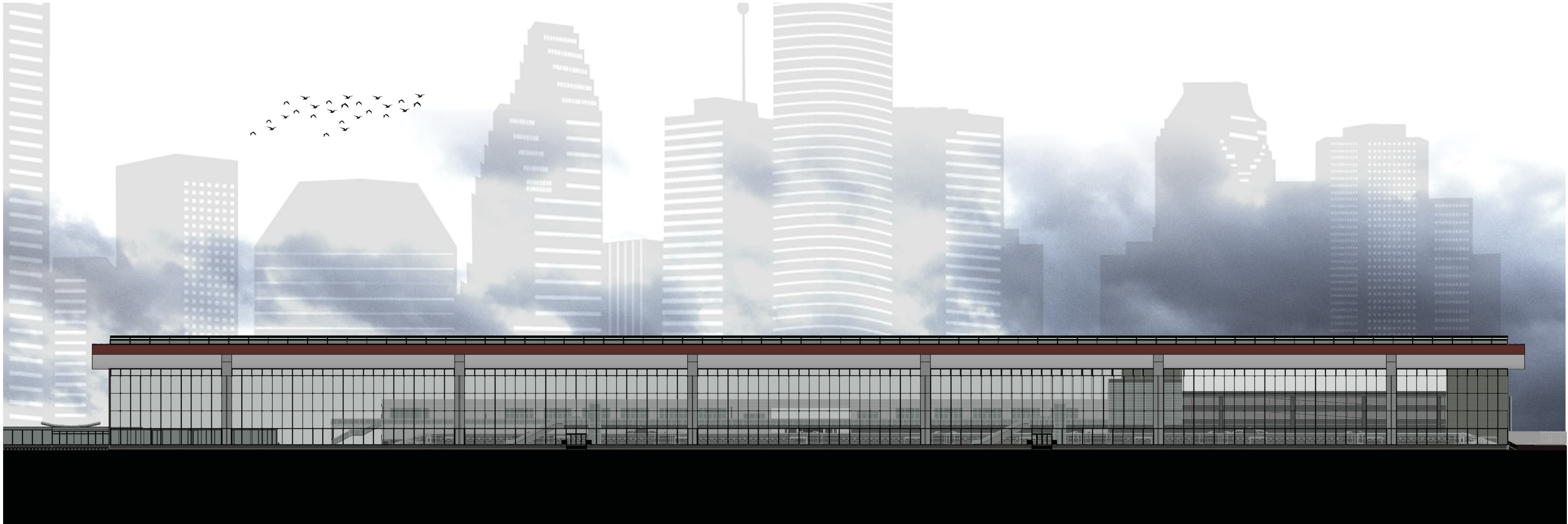


Bayou Level Plan

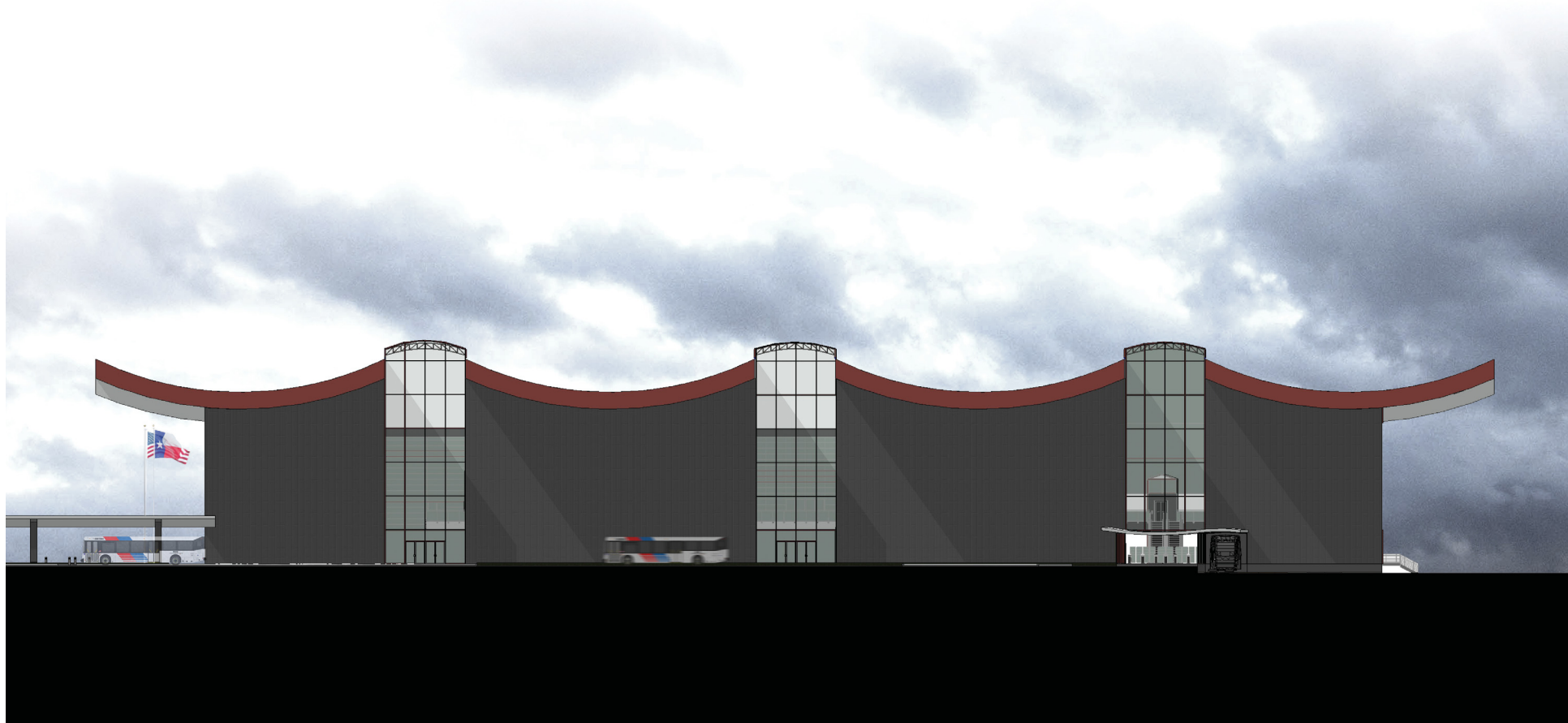




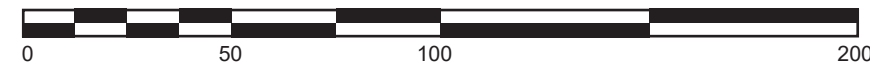
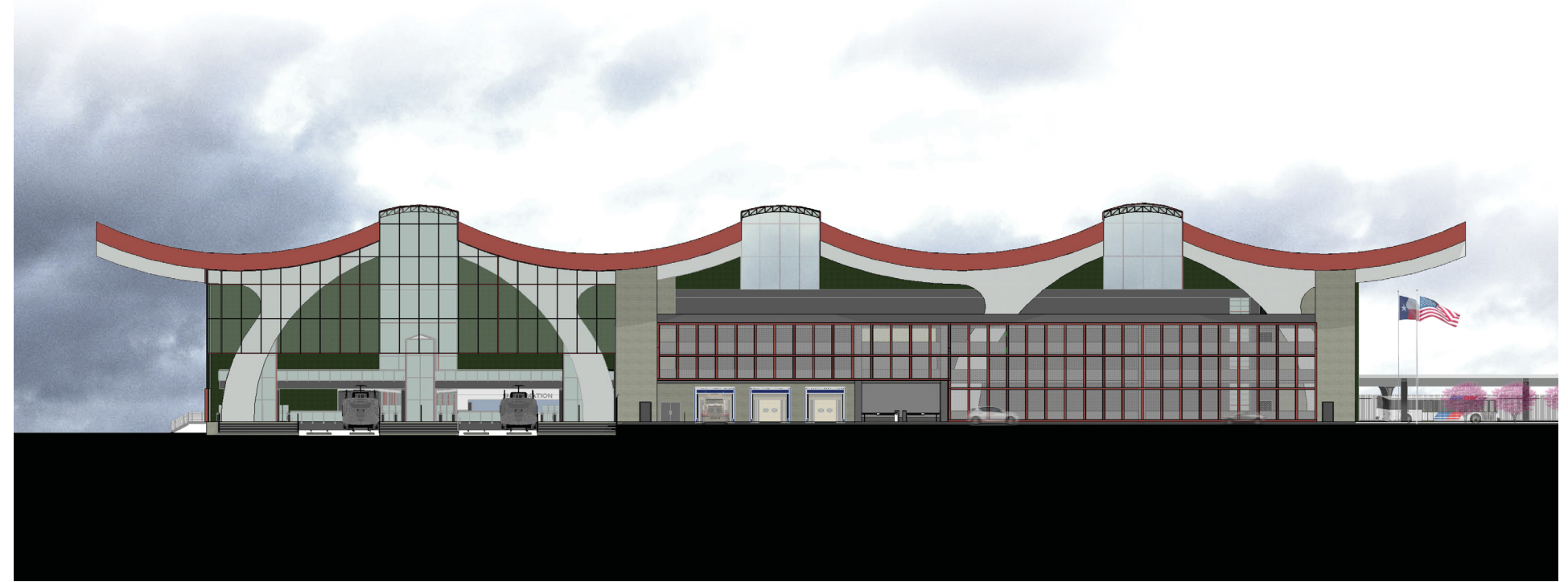
South Elevation



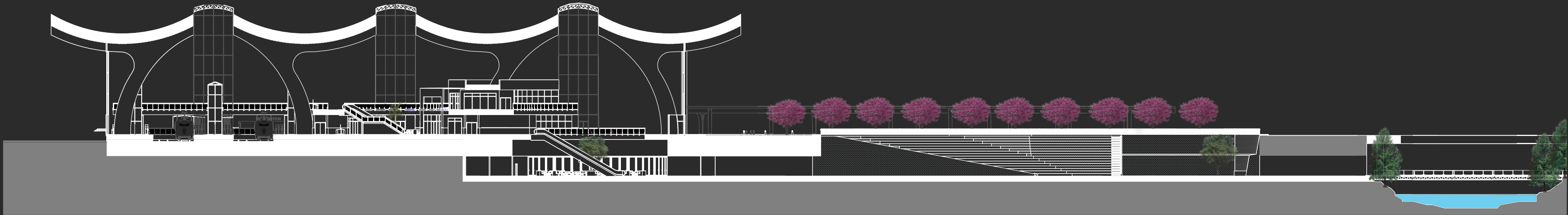
North Elevation



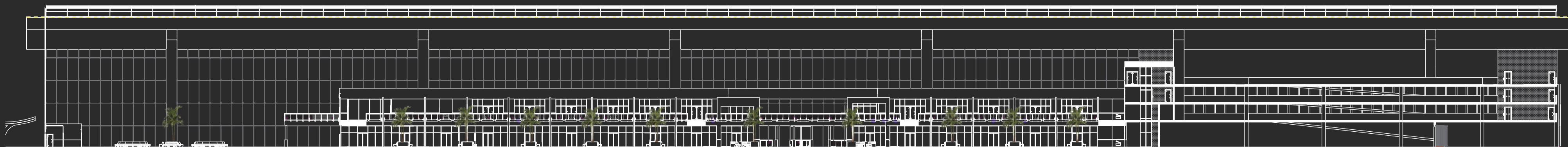
East Elevation



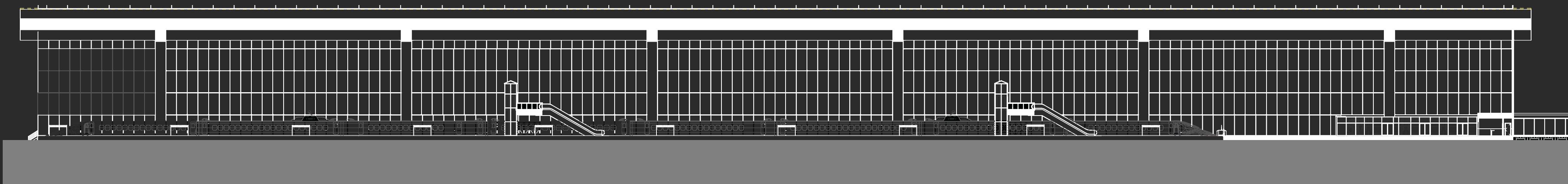
West Elevation



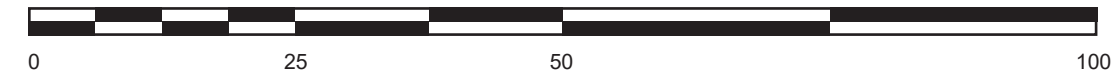
Site Section



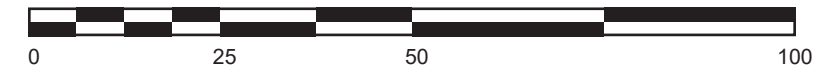
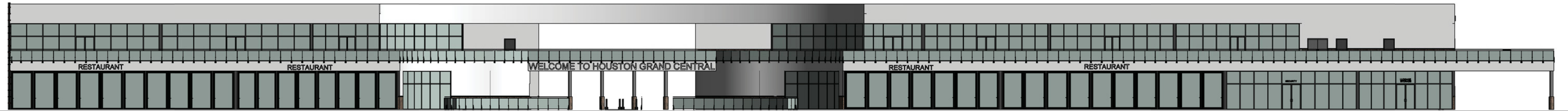
Longitudinal Section - South



Longitudinal Section - North



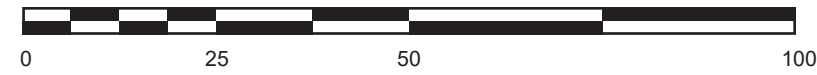
Interior Elevation - East End



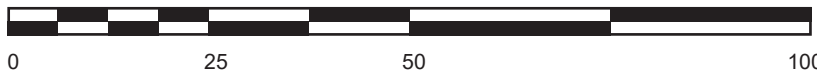
Interior Elevation - Entrance Concourse

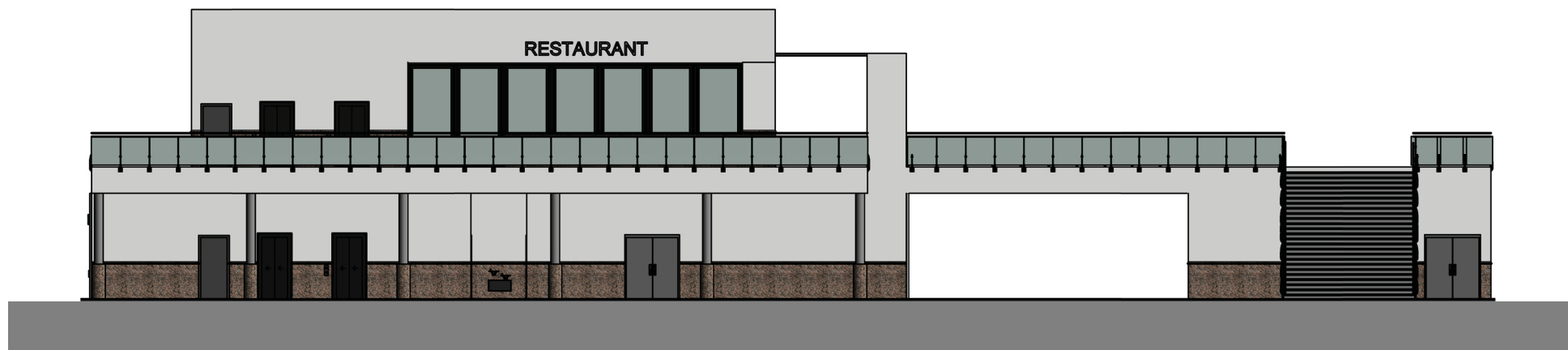


Interior Elevation - Mall Concourse South

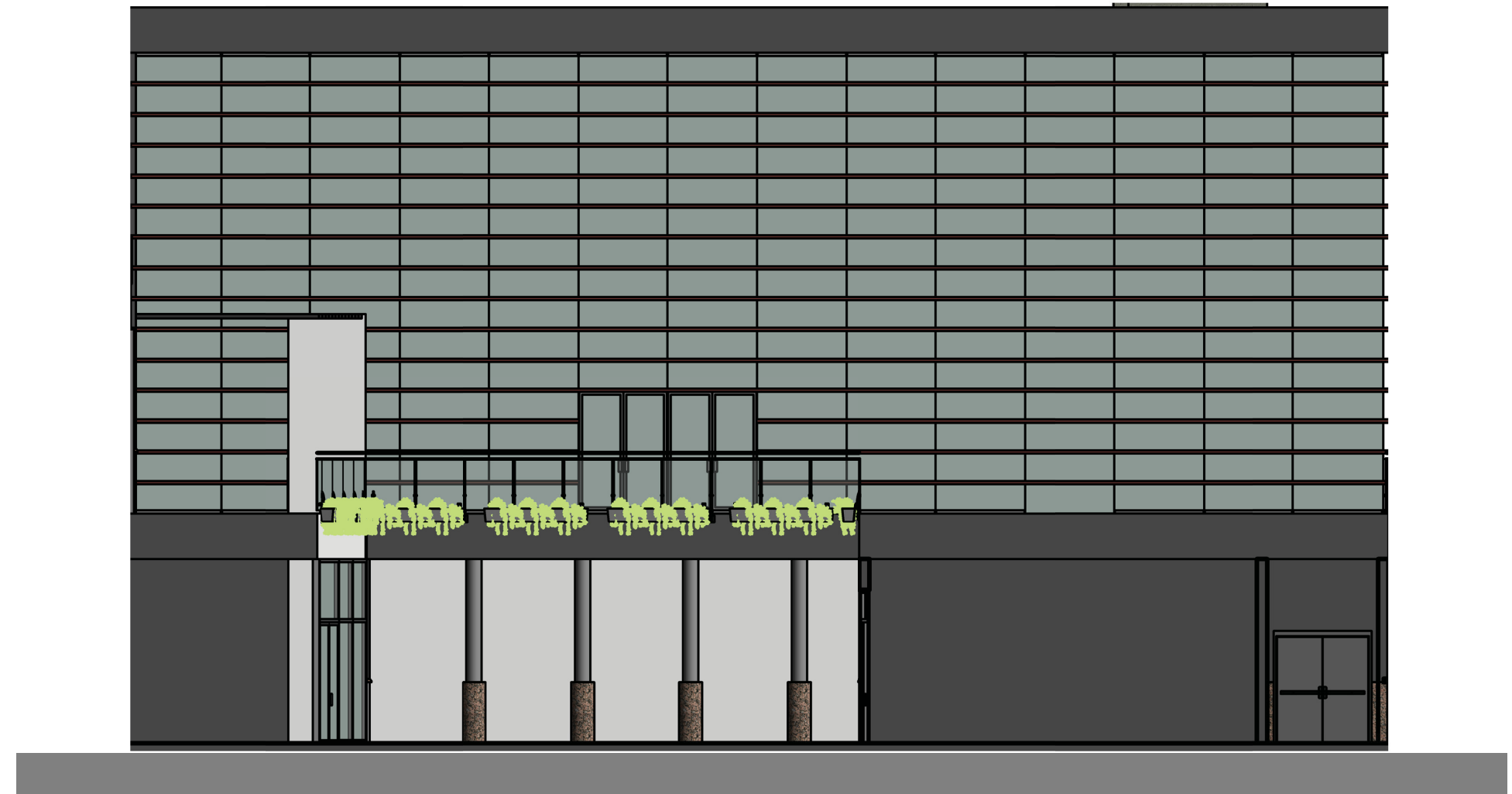


Interior Elevation - Mall Concourse North

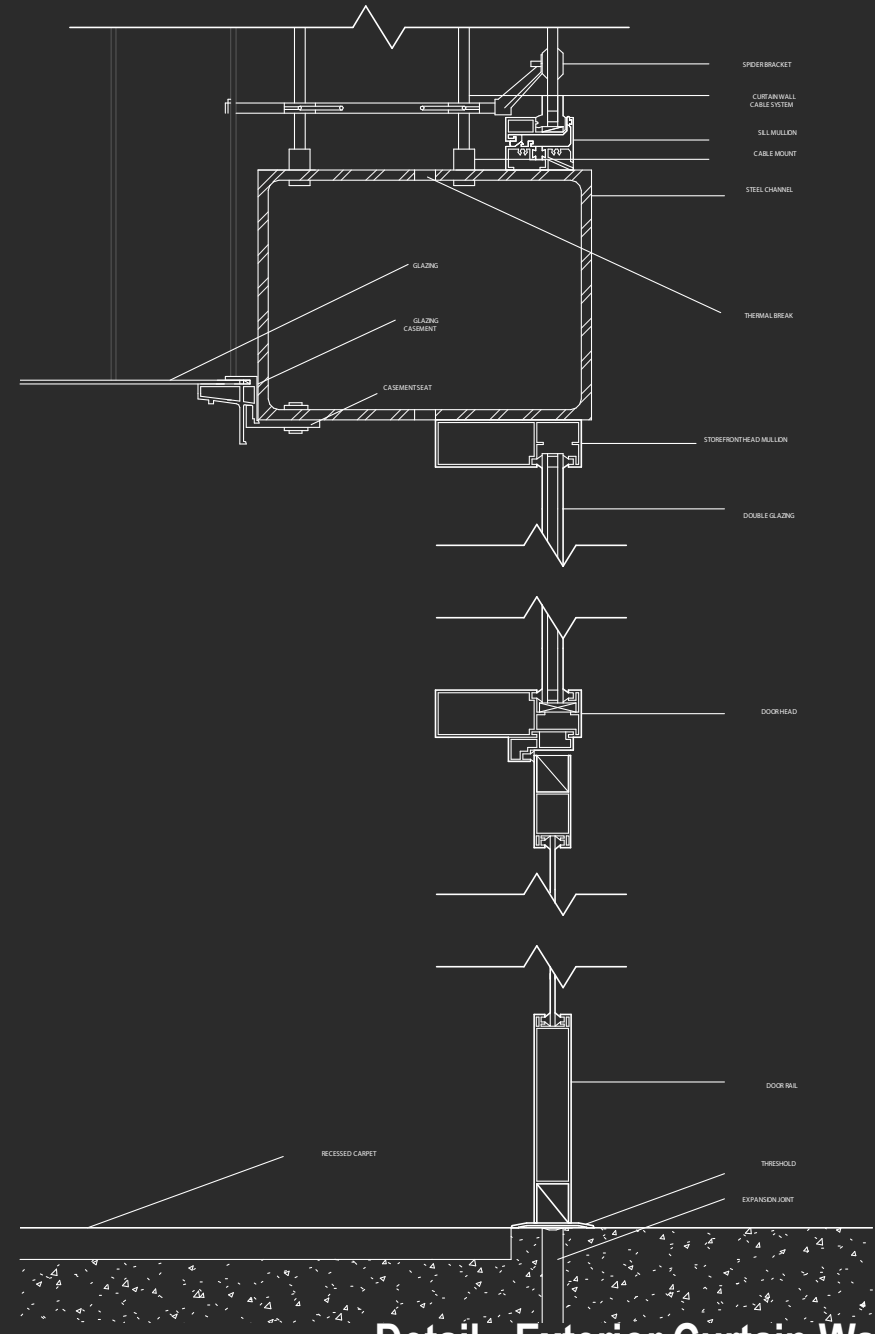
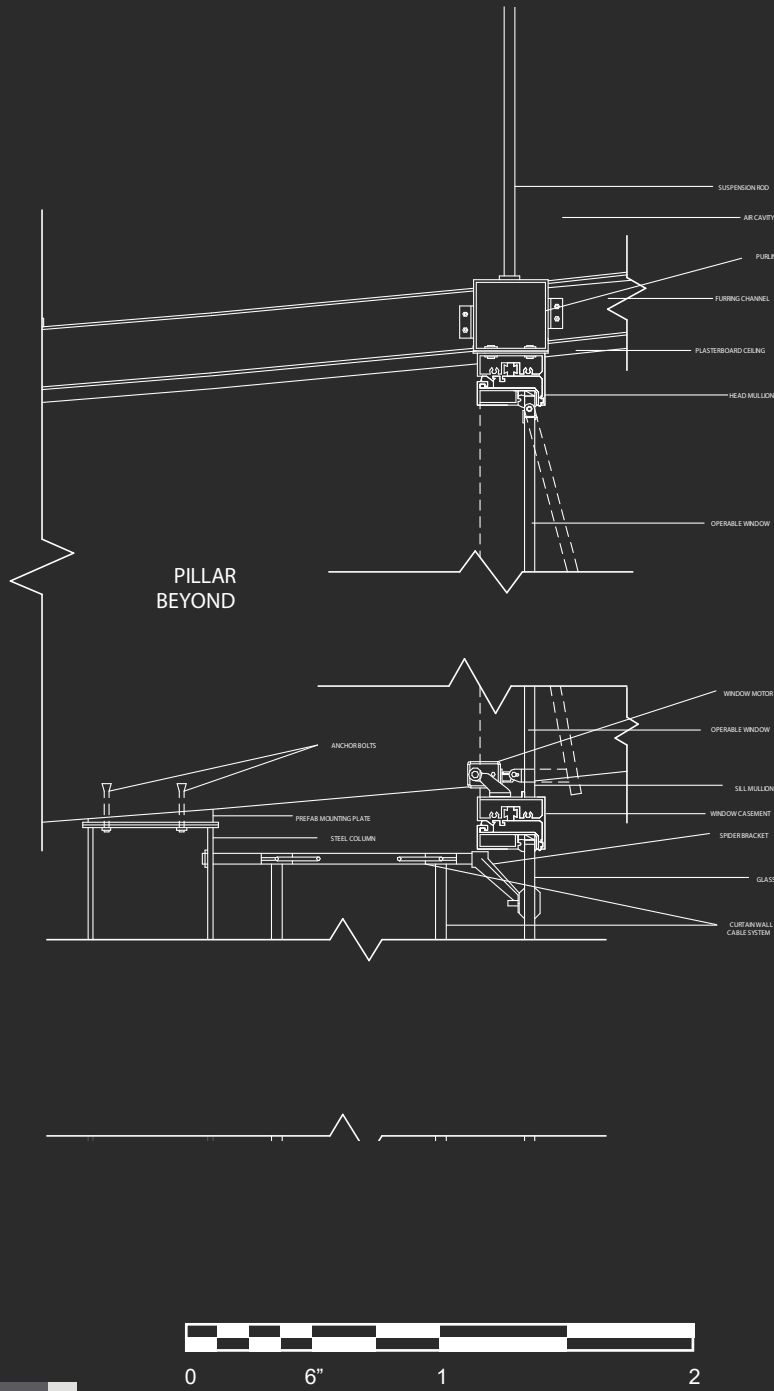




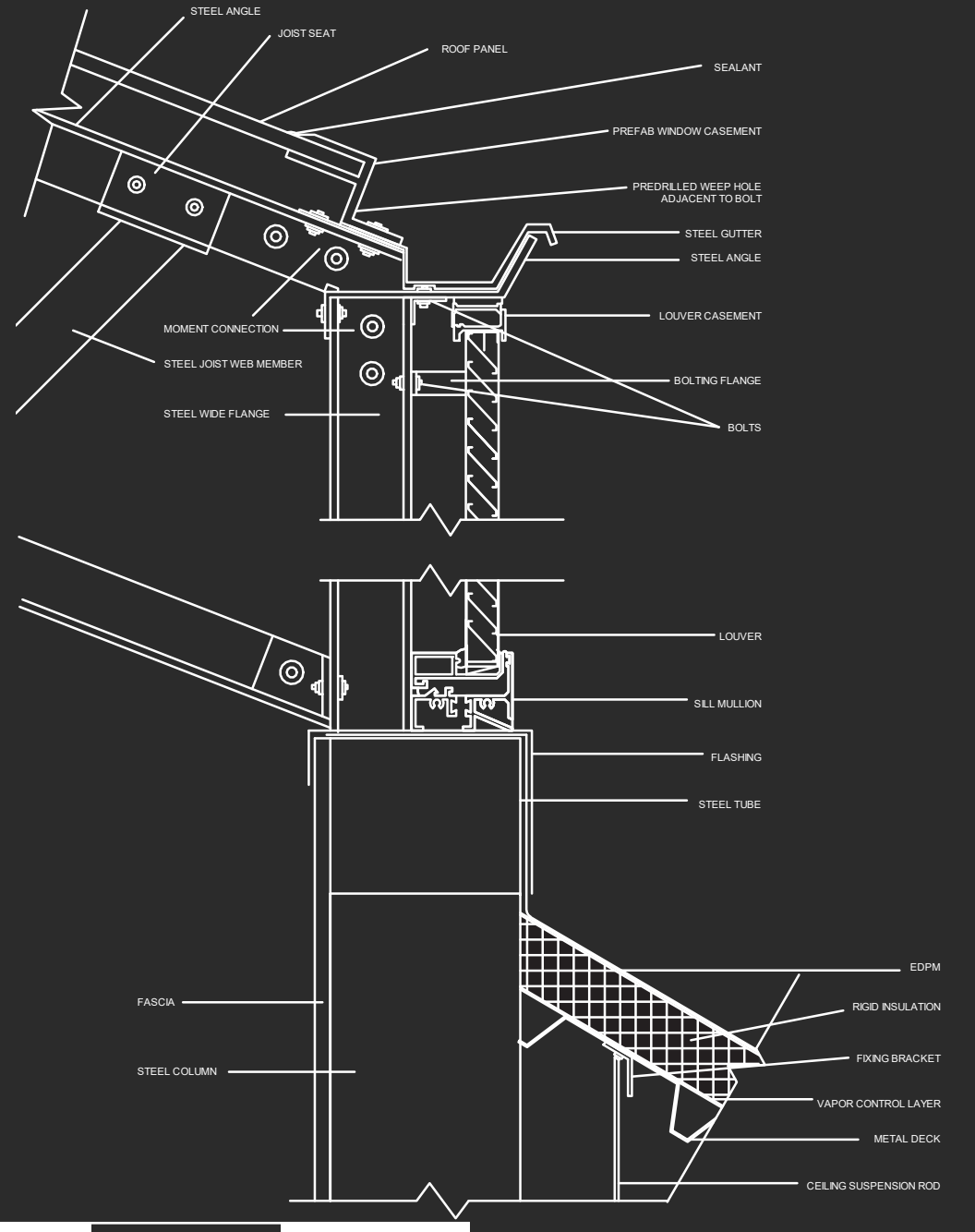
Interior Elevation - Mall Concourse East End



Interior Elevation - Mall Concourse West



Detail - Exterior Curtain Wall



Detail - Skylight

11 Conclusion

Designing this master thesis has been a journey through which I have encountered epiphanies, obstacles, and mental breakdowns beyond count. After a year of design, I am ready to finally put the pencil down and appreciate the fruits of my labor. This is the largest design undertaking I have ever experienced, and I have often wondered if I would be able to finish it on time. With the help of time management, self-discipline, and the support of my committee, I can finally say that I am satisfied with this master thesis. I look forward to graduating, receiving my degree, and beginning a new journey in my career as an architect.

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