

2023

ANDREW SMITH

URBAN GATEWAY

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A HOUSTON HIGH-SPEED RAILWAY STATION

God is in the details.  
-Mies van der Rohe



# URBAN GATEWAY

A HOUSTON HIGH-SPEED RAILWAY STATION

ANDREW SMITH  
FINAL STUDY 2023

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## D E D I C A T I O N

To my wonderful parents, words cannot express how grateful I am for your unwavering support throughout my academic journey. You have always believed in me, even when I doubted myself, and your encouragement has been a constant source of motivation. Thank you for instilling in me the values of determination and perseverance, and for teaching me to never give up on my dreams. Your guidance and wisdom have been invaluable in shaping me into the person I am today. I am forever grateful for all the sacrifices you have made for me.

Thank you for all of your encouragement and support this year, Dr. Aitani, even though it took me a while to get underway. You have assisted me in producing a project that I am proud of and surpasses my expectations. Your exceptional site photos have been integral throughout the process of showcasing this project and I am grateful for all the effort you put in to make that happen. Thank you to my committee and studio professor for your insightful criticism and knowledge, which helped to complete my project.

To my other parents, my parents-in-love, I want to express my deepest gratitude for your unwavering support and encouragement over the past two years. Your belief in me and my project has been a constant source of inspiration, and I am so grateful to have you in my life.

To my beloved wife Hannah, I cannot express how grateful I am for all the love and support you have given me over the last two years. Your unwavering encouragement, calming presence, and dedication to helping me have been a constant source of strength and inspiration. I want to thank you for all the times you were there to lift me up when I was feeling down, for all the words of encouragement that gave me the courage to keep going, and for all the times you were patient and understanding when I needed it most. Your efforts to help me with design, even if you are not a designer, really meant a lot to me and showed how much you care. Your constant love and support have helped me to pursue my goals with greater confidence and determination. Your belief in me and our future together has been my rock during challenging times. I feel incredibly fortunate to have you as my partner, my best friend, and my soulmate. I promise to do everything in my power to make you proud and to build a life that is worthy of your love and support.

I want to thank JESUS most of all for the peace that has persisted throughout my life. I am forever grateful for your victory over death through your resurrection and for the atonement you provided for our sins by giving us eternal life.



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## ABSTRACT

An urban catalyst is a redevelopment strategy that centers around a unique project that serves as a driving force behind and guides the direction of urban development. Urban catalysts have the ability to stimulate and accelerate the growth of urban areas, much like a chemical catalyst. As a result, many cities have explored the use of urban catalysts as a way to revitalize their communities.

One example of an urban catalyst is Houston's high-speed rail station, which was strategically linked to the site of the abandoned Northwest Mall. This move transformed the mall into an "Urban Gateway," a bustling transportation center that provides a host of economic and social benefits to Houston and the surrounding communities. The Urban Gateway serves as a hub that connects people, businesses, and opportunities, providing residents with easy access to jobs, education, healthcare, and other vital services.

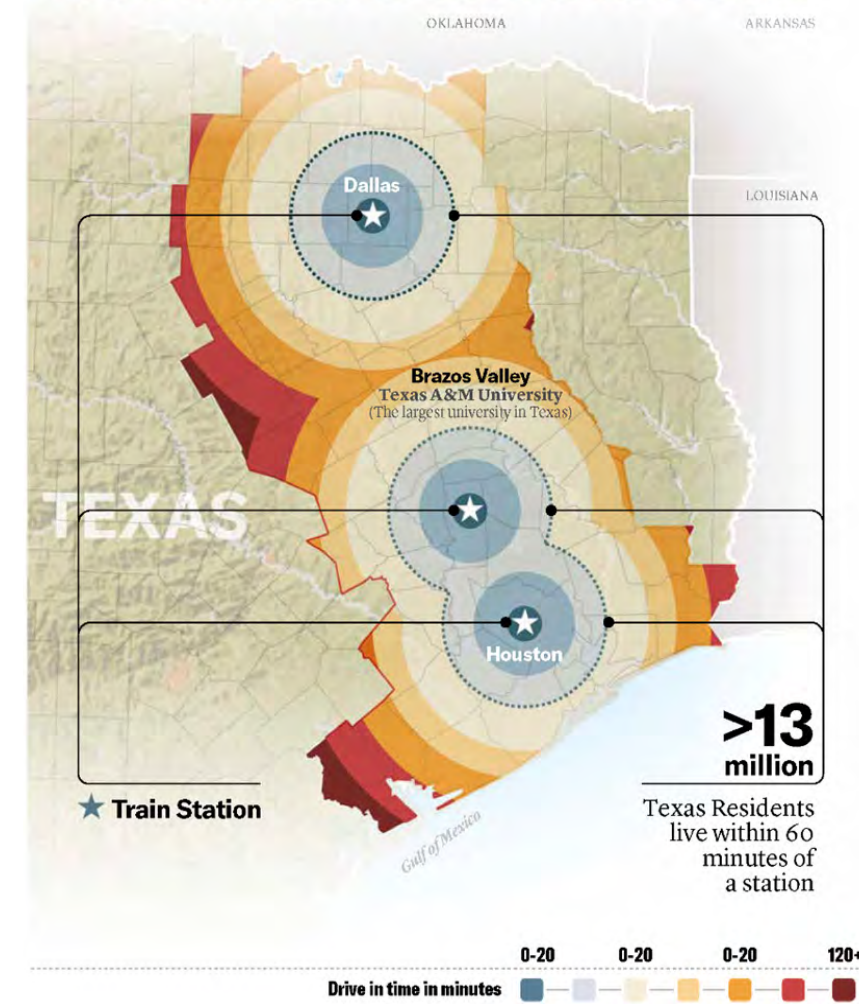
Beyond its transportation infrastructure, the Urban Gateway has become a symbol of Houston's vision for the future. The city's leaders recognize that investing in urban catalyst projects like the Urban Gateway is a crucial step toward building a sustainable, thriving community. By leveraging the power of urban catalysts, Houston and other cities can transform neglected areas into vibrant, prosperous neighborhoods, fueling economic growth and improving the quality of life for residents.



DR. AITANI: EXISTING RAILROAD NEAR SITE

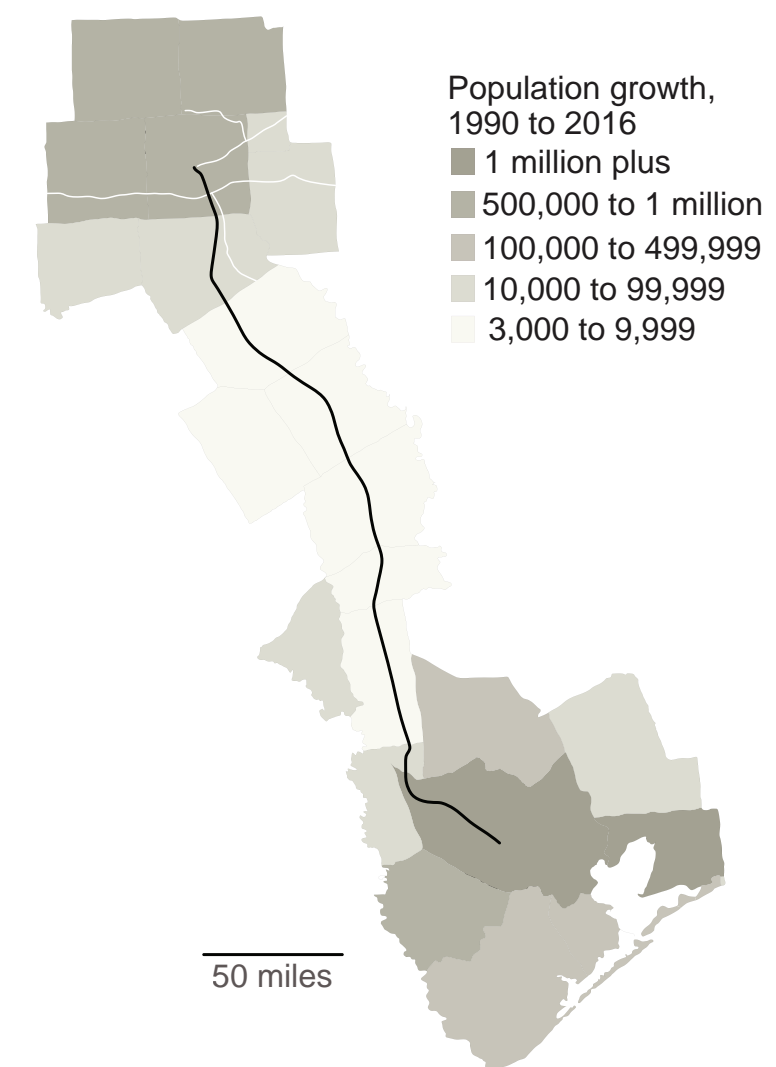
# RESEARCH

## TEXAS RESIDENTS IN THE RAILWAY AREA



REACH

One of the three high-speed train stations is less than an hour away from more than 13 million inhabitants' homes. Between North Texas and Houston, approximately 16 million trips are taken each year, and it is predicted that this number will rise at a pace of 1.5% annually, which is nearly double the national average. The majority of travelers—about 90%—drive while the rest fly. The most thorough analysis of this industry to date found that 72% of passengers would “definitely” or “probably” use a high-speed train if it were an option right now.



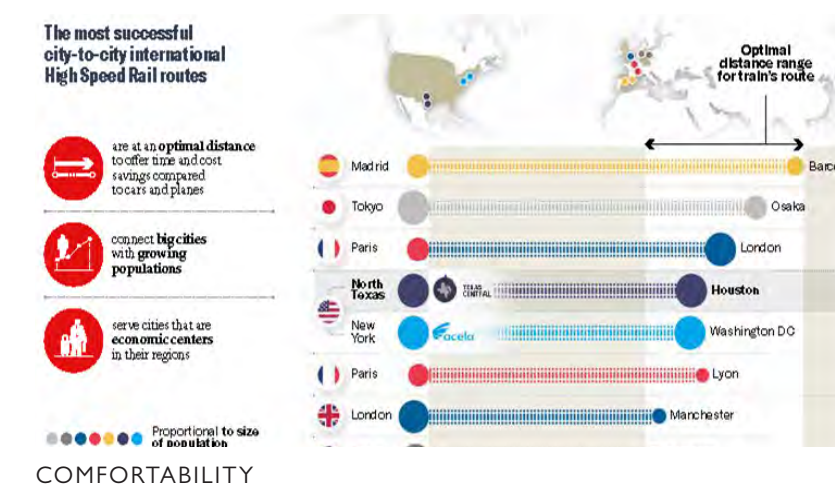
POPULATION GROWTH

The region between Houston and Dallas, located in the state of Texas, has been experiencing significant growth in various sectors over the past few decades. One of the major drivers of this growth is the thriving energy industry, with Houston serving as a hub for oil and gas production and Dallas as a center for finance and technology. The region's favorable business climate, low tax rates, and relatively low cost of living have also attracted numerous companies and entrepreneurs. This has led to the establishment of new businesses, the expansion of existing ones, and the creation of new job opportunities. Moreover, the region's strategic location has also played a significant role in its growth. Situated between two of the largest metropolitan areas in the United States, Houston and Dallas, the I-45 corridor offers easy access to major markets, transportation hubs, and a large pool of skilled workers.



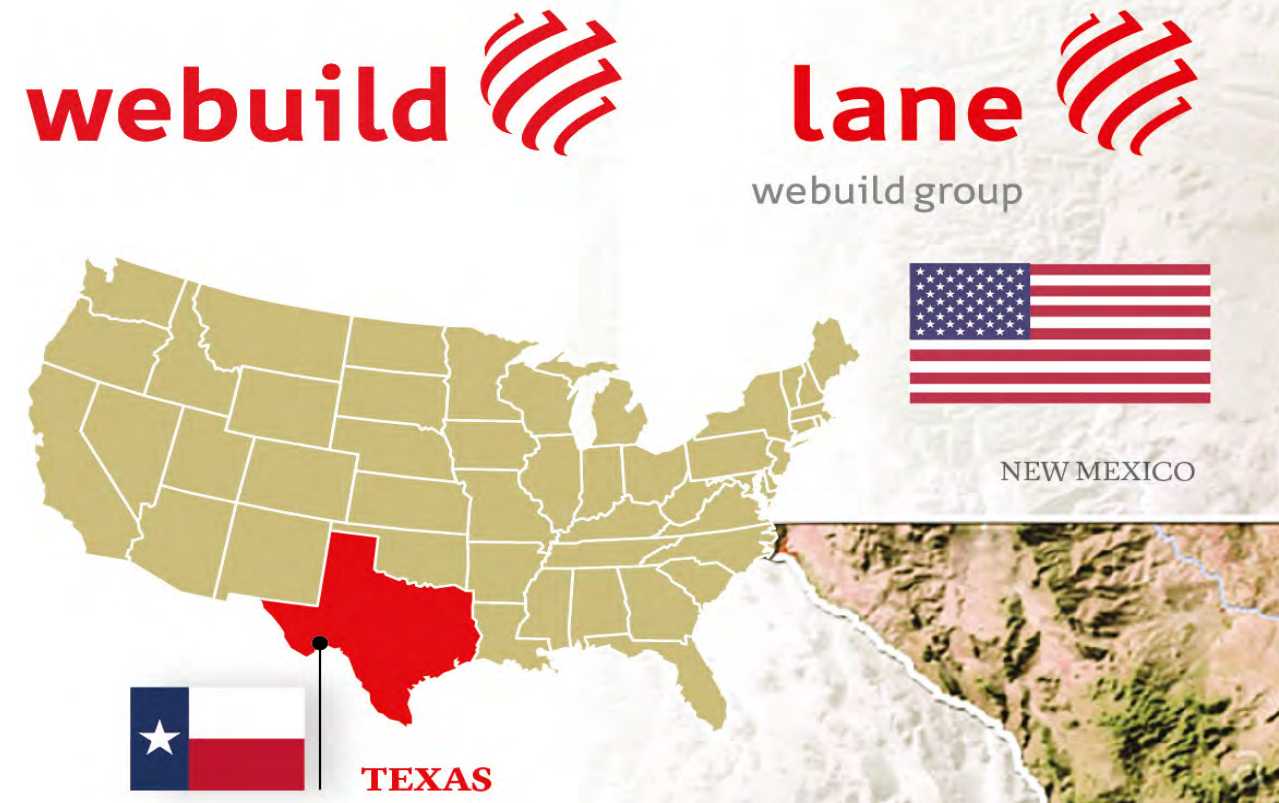
ENVIRONMENT & SAFETY

The Dallas-Houston high-speed train project has the potential to significantly reduce CO2 emissions, air pollution, and traffic congestion, while boosting employment opportunities and economic growth in the region. The train is expected to reduce CO2 emissions by 700,000 metric tons annually and avoid the presence of over 14,000 vehicles per day on I-45. It is six times more energy efficient than a car and emits only a fraction of the carbon dioxide emissions of a Boeing 777-200. The project will be entirely financed by private investors, creating thousands of jobs during construction and management phases, and potentially attracting businesses and tourism to the region.



The Texas high-speed train project is one of the most crucial in the world for creating rail links between two significant urban centers. Similar to Madrid-Barcelona, Tokyo-Osaka, or Paris-Lyon, the two cities of Dallas and Houston are sufficiently apart to provide shortened driving times and incredibly affordable air travel costs.

Texas Central signed an agreement with Webuild Group to build the Dallas-Houston high-speed railway



**TRAVEL TIME**



**CONTRACT VALUE SIGNED BY WEBUILD**



**THE TRAIN**



WE BUILD GROUP



**ECONOMIC IMPACTS FOR TEXAS**

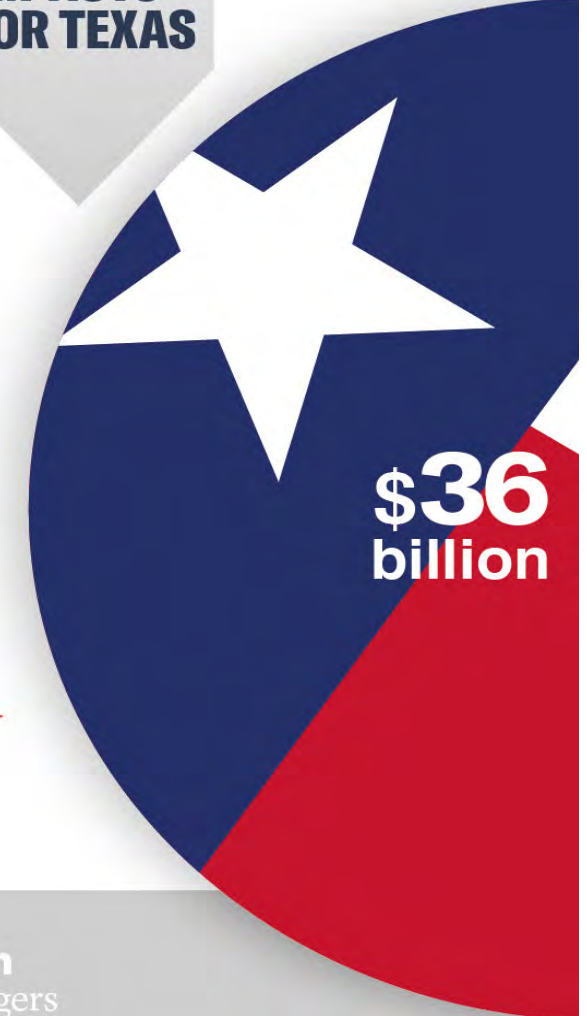


**>17,000** direct jobs during works

**>20,000** supply chain jobs

**+1,500** Full time permanent jobs

**6+** million annual passengers







DR. AITANI: EXISTING RETAIL NEAR SITE

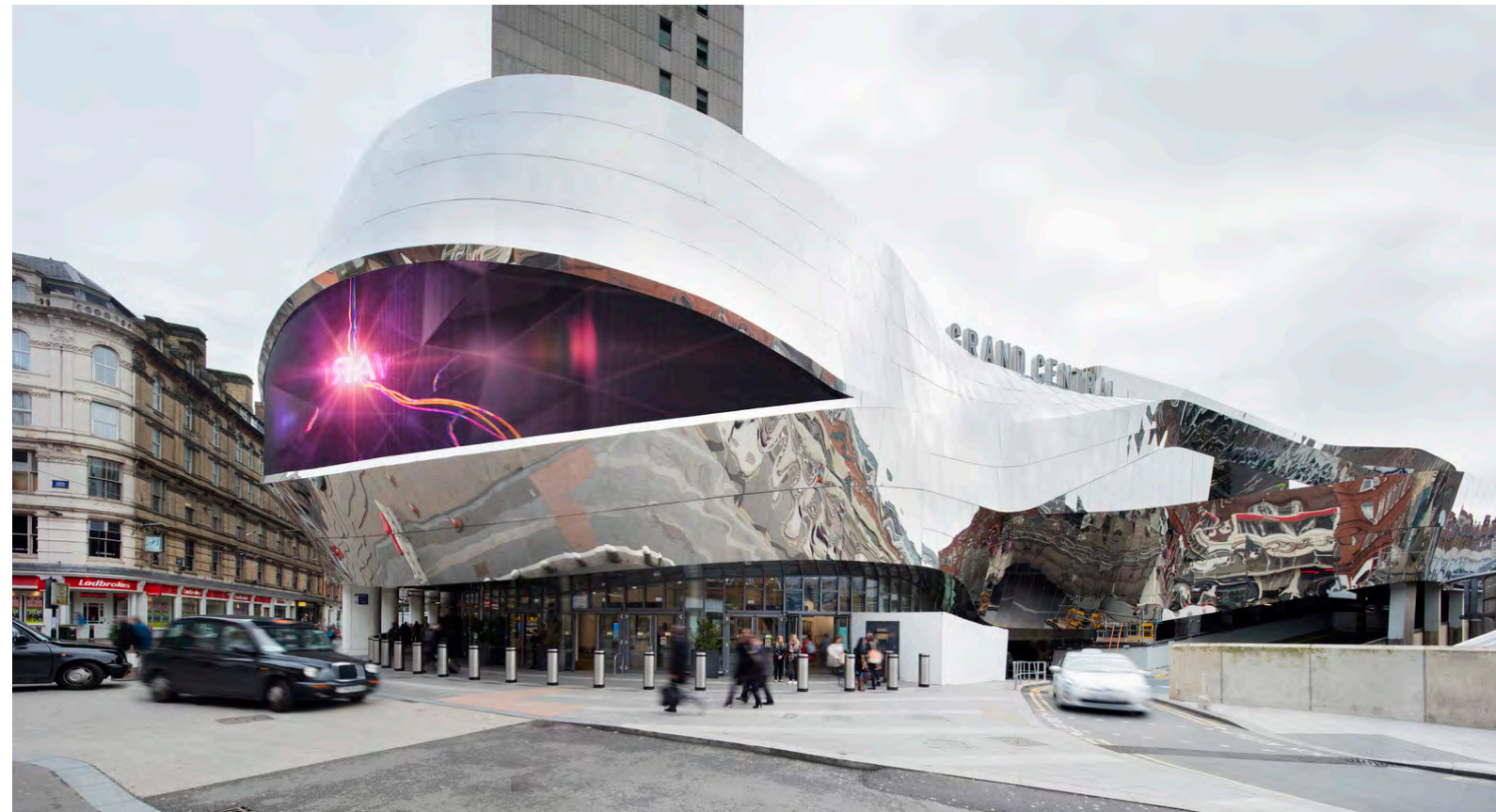
# PRECEDENT STUDY

# BIRMINGHAM STATION

BIRMINGHAM, UNITED KINGDOM

AZPML ARCHITECTS

PROJECT YEAR: 2015



EXTERIOR VIEW

Birmingham New Street Station is a major railway station in the UK, located in Birmingham city center. Over the years, the station's architecture has undergone significant changes to keep up with the city's growth and changing transport needs. The original station opened in 1854, with a simple brick facade and a single train shed. The station was then expanded and updated several times until it was modernized and redeveloped in the 1960s by architect John Poulson. His design, with a dramatic curved roof and concrete facade, proved problematic and cramped. In the early 2000s, the station was redeveloped once again with the Gateway Plus scheme, led by Foreign Office Architects. The new design aimed to create a more functional and welcoming space for travelers. The new entrance is a glass-clad structure with a sweeping curved roof, and the station features a spacious concourse with improved way-finding and signage. The atrium, a vast space enclosed by a lattice-like steel and glass roof, is one of the most striking features of the new design. The redevelopment of Birmingham New Street Station is a testament to the importance of good design in creating functional and enjoyable public spaces.



INTERIOR CONCOURSE VIEW



INTERIOR CONCOURSE VIEW



EXTERIOR SHOPPING MALL

# KINGS CROSS STATION

LONDON, UNITED KINGDOM  
JOHN MCASLAN + PARTNERS  
PROJECT YEAR: 2012



PLATFORM VIEW

King's Cross station is a major railway station located in central London, UK. Originally opened in the mid-19th century, the station underwent a major renovation in 2012 that transformed it into a modern, efficient transport hub. One of the most impressive features of the new design is the station's undulating steel roof, which spans the length of the station's expansive concourse. The roof provides natural light to the interior while also shielding passengers from the elements. The historic facade on the eastern side of the station was also restored, preserving the station's rich history while integrating modern design elements.

The station's renovation also included the construction of a new concourse that provides a spacious and light-filled space for passengers to wait for their trains. The station's shops, restaurants, and cultural attractions have also made it a popular destination in its own right. Overall, King's Cross station is a testament to the power of thoughtful and innovative design in creating functional and visually striking public spaces. The station's combination of historic and modern elements makes it an iconic landmark in central London and a crucial transportation hub for both domestic and international travel.



INTERIOR CONCOURSE VIEW



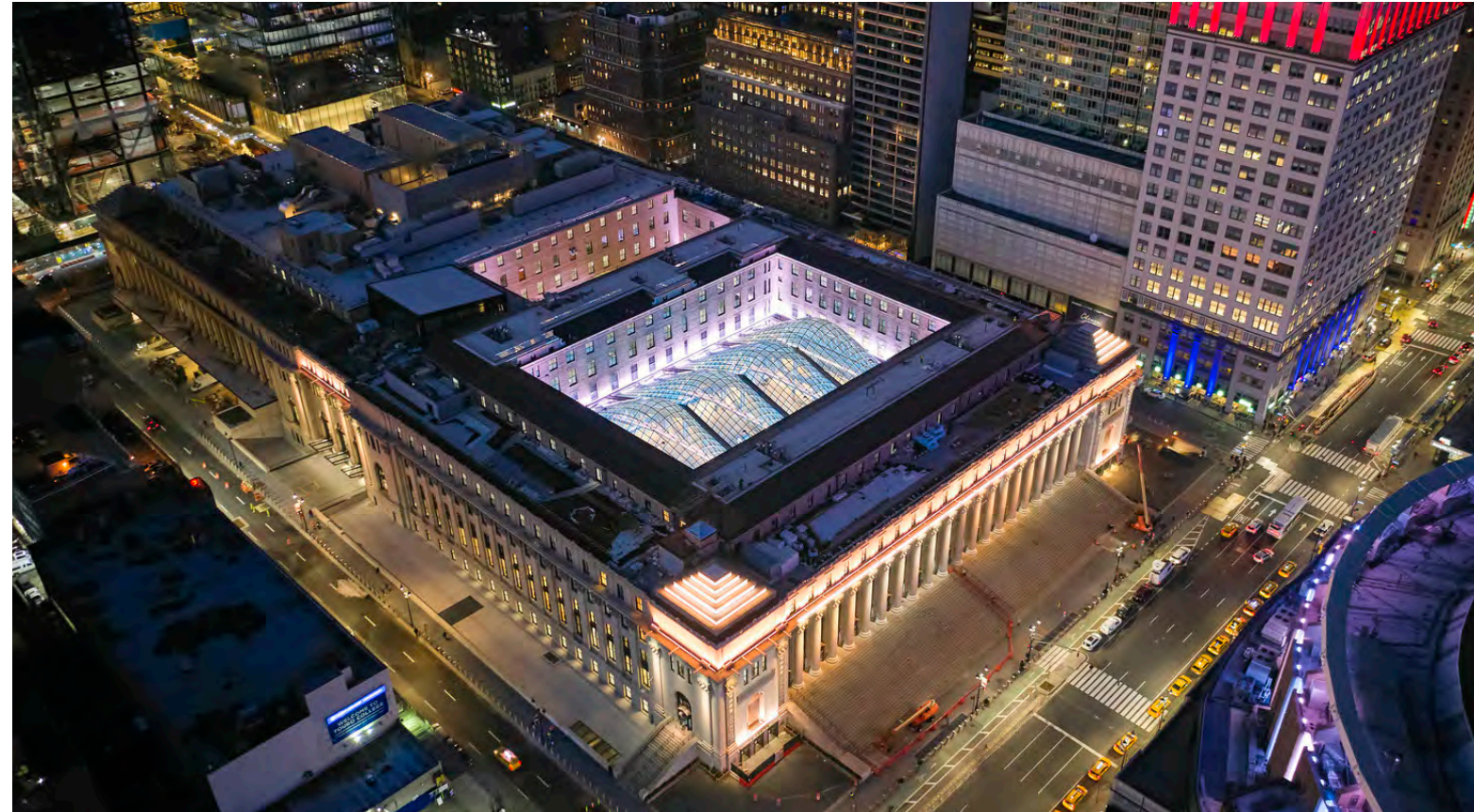
INTERIOR WAITING VIEW



INTERIOR CONCOURSE VIEW

# MOYNIHAN TRAIN HALL

NEW YORK, UNITED STATES  
SKIDMORE, OWINGS & MERRILL  
PROJECT YEAR: 2021



EXTERIOR VIEW

The Moynihan Train Hall's architecture is a stunning fusion of contemporary design cues and historical allusions. The James A. Farley Post Office Building, which was finished in 1912 and is regarded as one of New York City's outstanding civic structures, now serves as home to the Train Hall. The Train Hall's architecture draws inspiration from the structure's original Beaux-Arts design while also including modern elements. A standout element of the design is the glass ceiling of the Train Hall, which lets in natural light and gives the interior a feeling of openness and space. Elegant steel columns that support the roof give a contemporary contrast to the building's antique design.

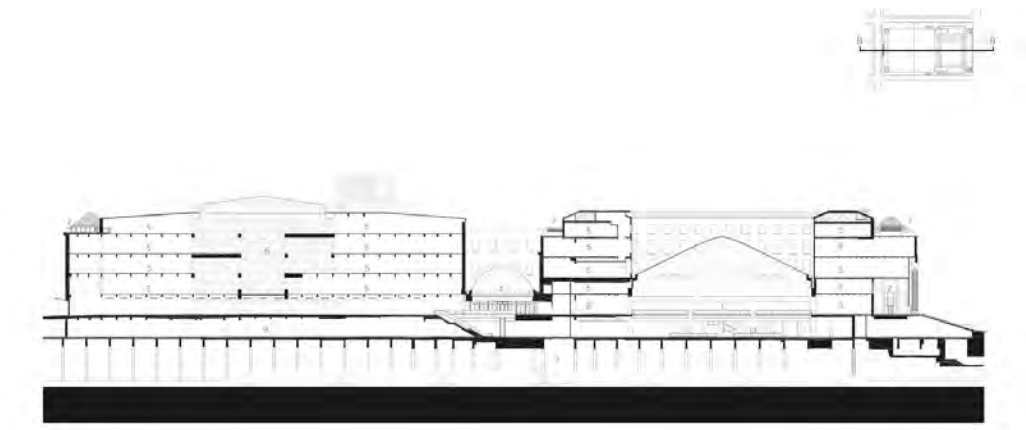
The interior of the Train Hall is designed to be both functional and visually striking, with a range of modern amenities and cultural attractions. The Train Hall's shops, restaurants, and lounge area provide a range of options for passengers and visitors, while the public art installations add an extra layer of interest and engagement. Overall, the architecture of Moynihan Train Hall is a testament to the power of thoughtful and innovative design in creating functional and visually striking public spaces.



INTERIOR CONCOURSE VIEW



INTERIOR WAITING VIEW



SECTION



DR. AITANI: BIRDS-EYE OF EXISTING SITE CONDITION LOOKING NORTH

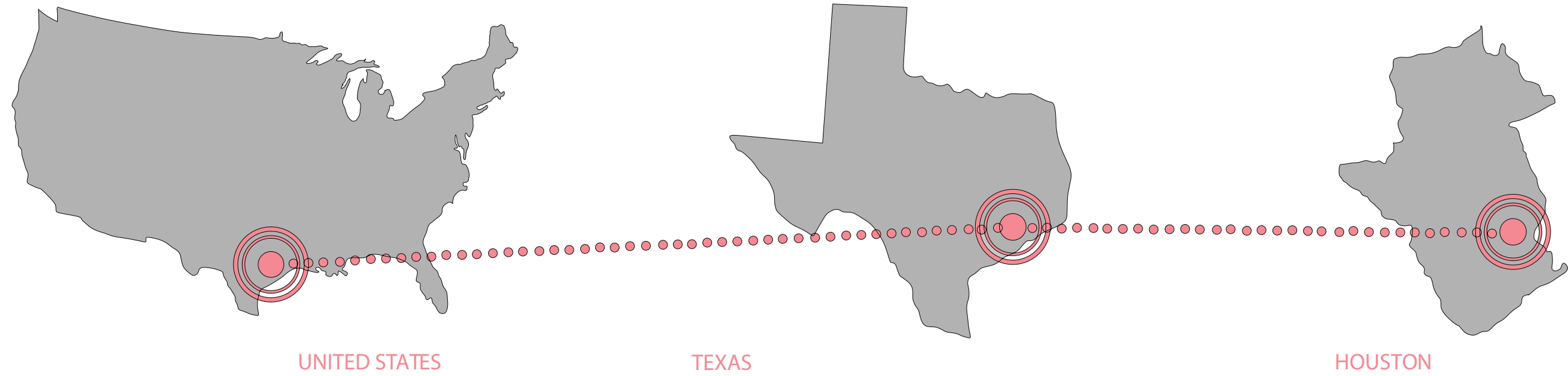
# SITE CONTEXT

# HOUSTON CONTEXT

The train station outside Houston, Texas connects the city with other regions, despite being located away from the urban center. The station's design prioritizes connectivity to existing urban spaces such as commercial, cultural, and educational institutions. It aims to integrate seamlessly into the city's urban fabric, providing a vital transportation link. Its strategic location allows for future expansion and growth as the city continues to develop. The station serves as a crucial node in Houston's transportation infrastructure, connecting it to the broader urban context and facilitating easy access for residents and visitors.



URBAN CONTEXT



UNITED STATES

TEXAS

HOUSTON



SITE



1. THE GALLERIA



2. HINES LAKE



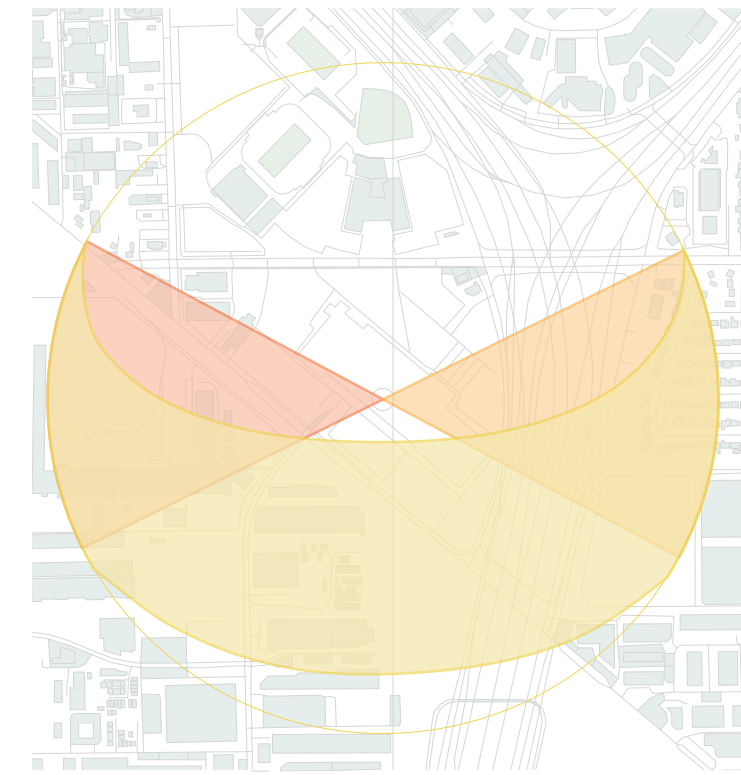
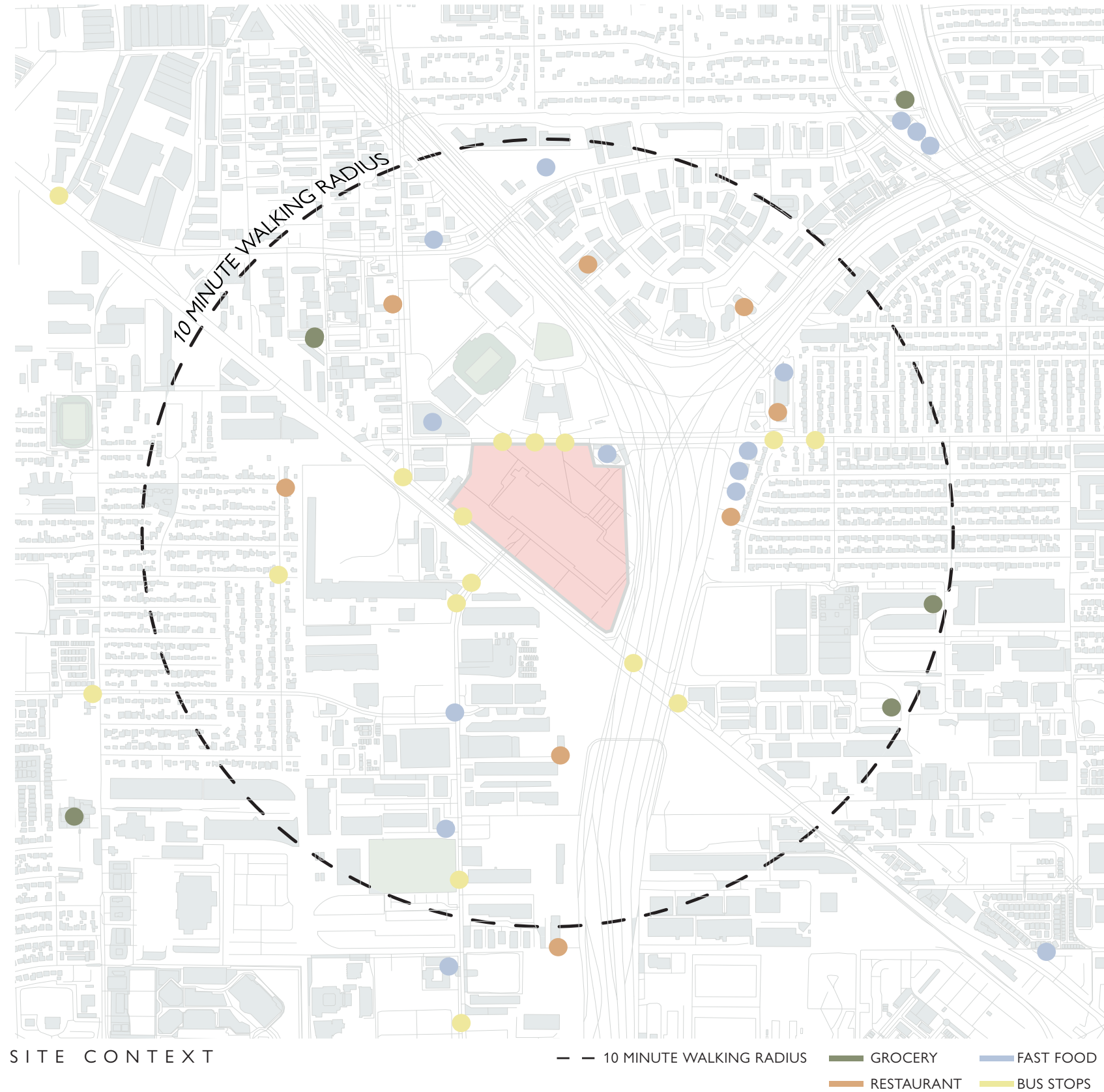
3. BUFFALO BAYOU BRIDGE



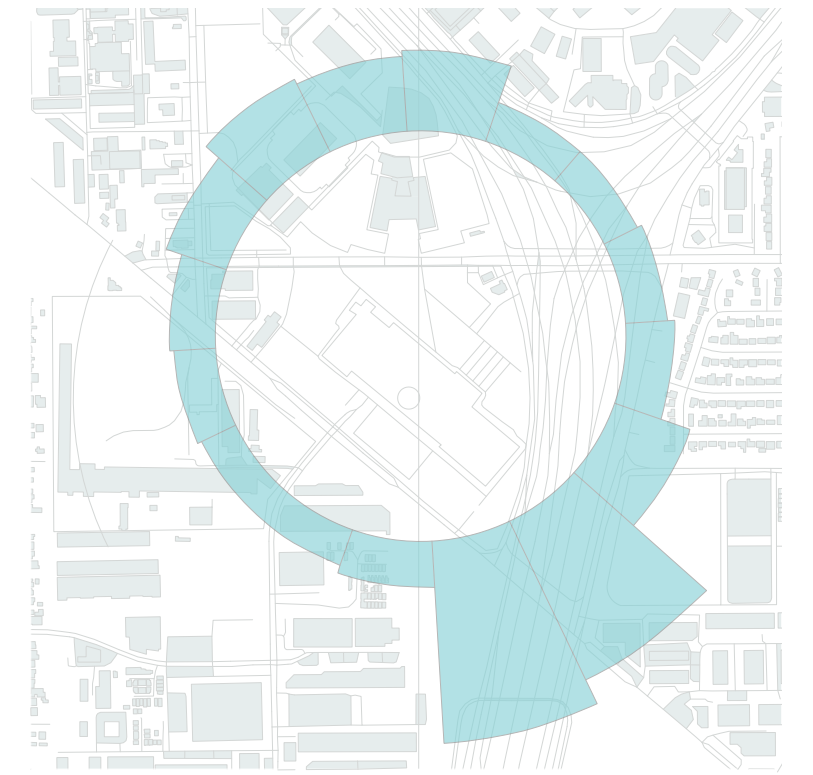
4. DOWNTOWN METRO STATION

# SITE ANALYSIS

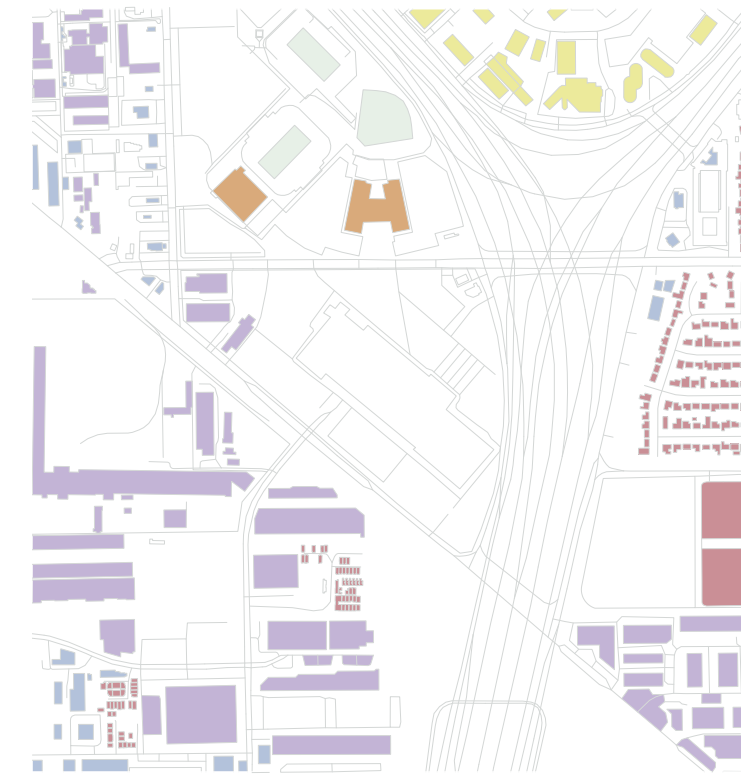
When planning an urban development, it is critical to understand the surrounding environment and the needs of the community. This includes factors such as demographics, socio-economic status, and cultural background. Without this understanding, it is easy to overlook essential services that the community needs. In this scenario, it was discovered that the new urban development lacked the necessary services to truly serve the community. However, it is commendable that a program was designed to address this issue and benefit both local residents and visitors to Houston.



**SUN PATH DIAGRAM**  
 SUMMER AVERAGE TEMPERATURE: 75-91  
 WINTER AVERAGE TEMPERATURE: 45-60

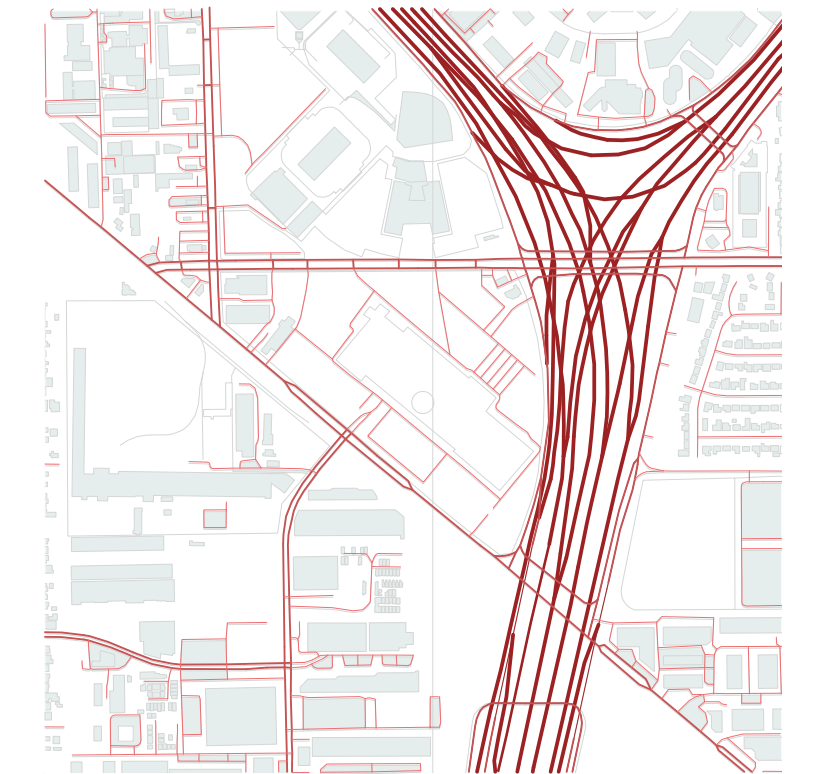


**WIND ROSE**  
 SUMMER WIND DIRECTION: SOUTH  
 WINTER WIND DIRECTION: NORTH EAST



**LAND USE**

- INDUSTRIAL
- COMMERCIAL
- RESIDENTIAL
- CIVIC
- OFFICE



**SITE CIRCULATION**

- PRIMARY
- SECONDARY
- TERTIARY



DR. AITANI: BIRDS-EYE OF EXISTING SITE LOOKING WEST

# PROCESS



## PROJECT GOALS

The Urban Gateway project aims to create a comprehensive gateway that not only serves as a transit hub but also functions as a true representation of the city. The objective of this project is to design a practical and effective transportation infrastructure that seamlessly integrates with the city and its surrounding context.



### CONNECT TO COMMUNITY

In addition to serving as a link between two large cities, the Urban Gateway will also serve as a connection between locals and nearby areas like the Galleria and the Central Station in downtown.



### ACTIVATE

By creating accessible parks and outdoor areas, the City of Houston will be made more active on a public level, encouraging the use of those areas for people rather than for automobiles.



### GROWTH

Urban development with multiple publics served. The Urban Gateway develops into a true civic hub for the city rather than just a place to visit.



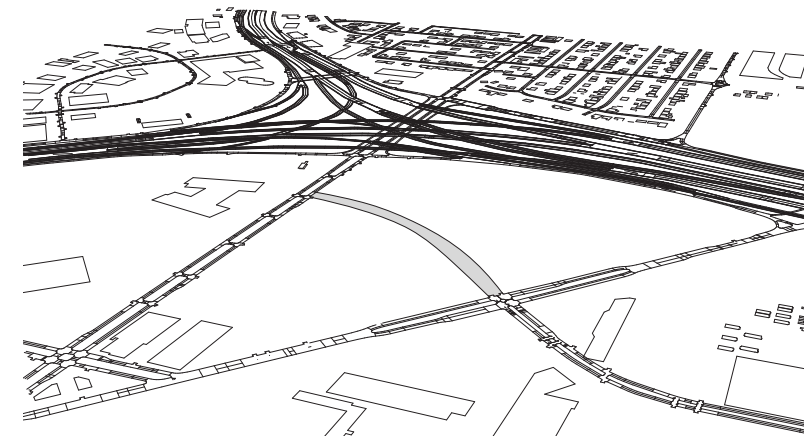
### CATALYST

The Urban Gateway development serves as a stimulus for Houston, reviving the neighborhood around the station. Encourages the citizens of the area to grow in a positive and healthy way.

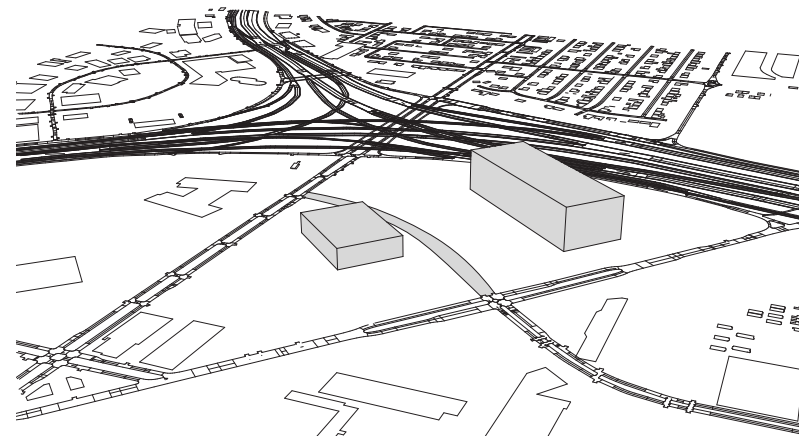


# PARTI DIAGRAM

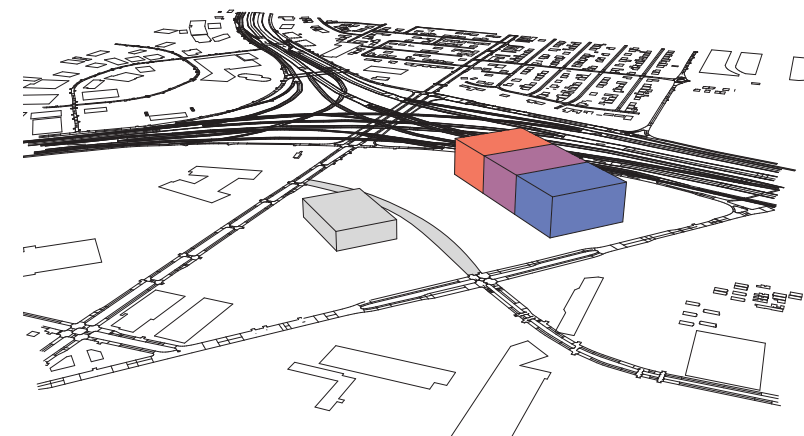
Three distinct programs were designed to cater to the needs of the site's occupants. The traveler program, which focused on those coming in for the day, included a train station program for seamless access. For visitors needing an overnight stay, a hotel program was created for their comfort and convenience. The shopping mall program was designed specifically for the residents, providing a space that was integrated into the city rather than being just a standalone destination. The three programs were tailored to each group's unique needs, creating a functional and practical site that seamlessly integrated into the city.



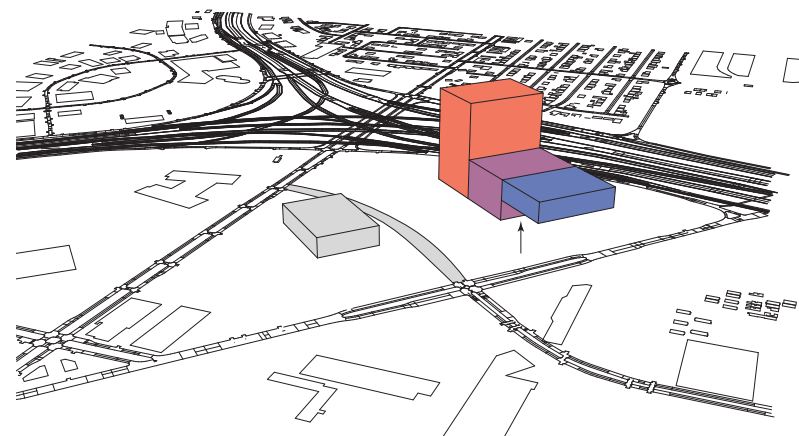
Main path carving through two existing access points on the site



Parking and main program separated by vehicular circulation

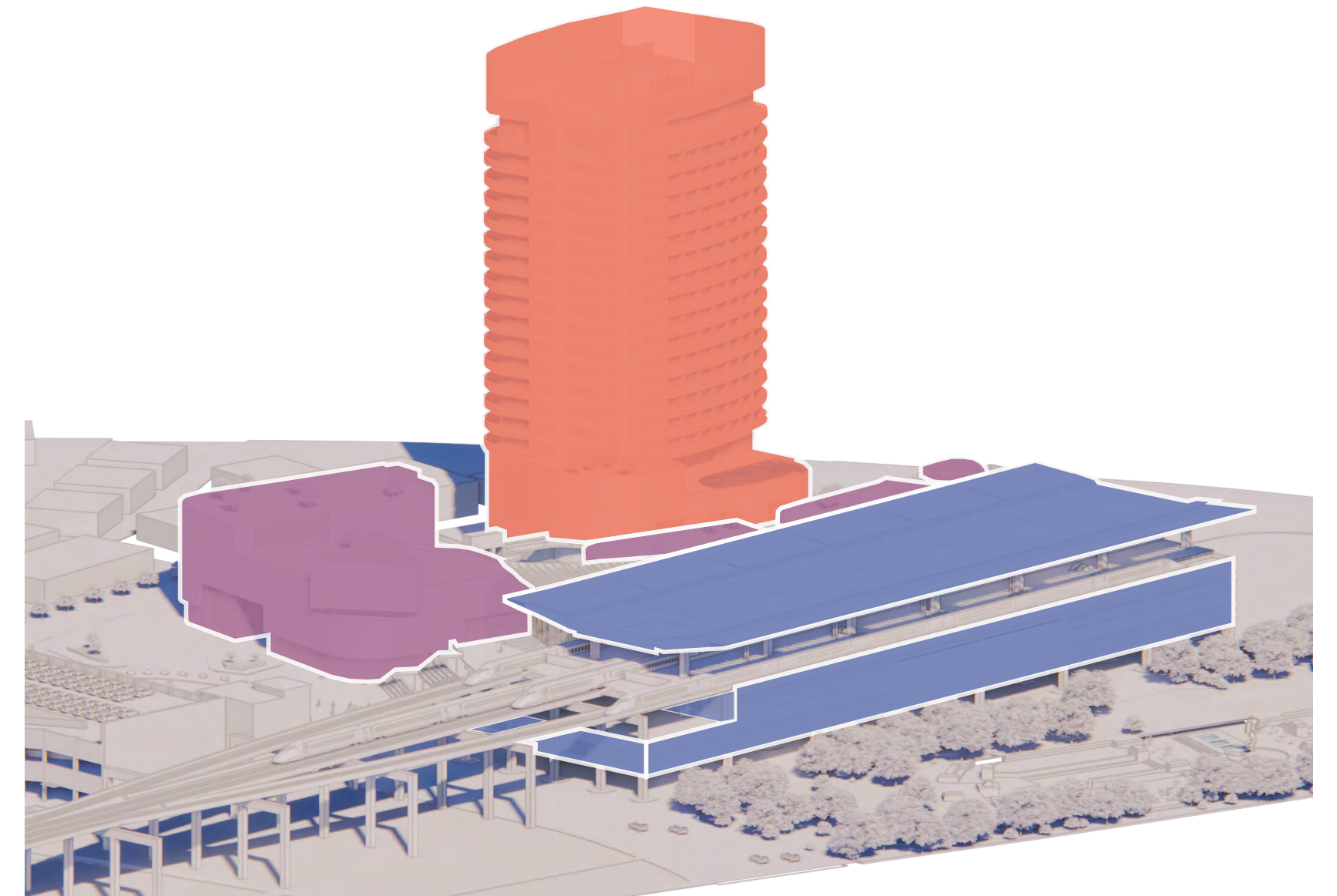


Main program is divided into the three defined user groups. Visitor (Hotel), Traveler (Train Station) and Resident (Shopping Mall)



Traveler program (Train Station) is elevated to allow for vehicular circulation and drop off

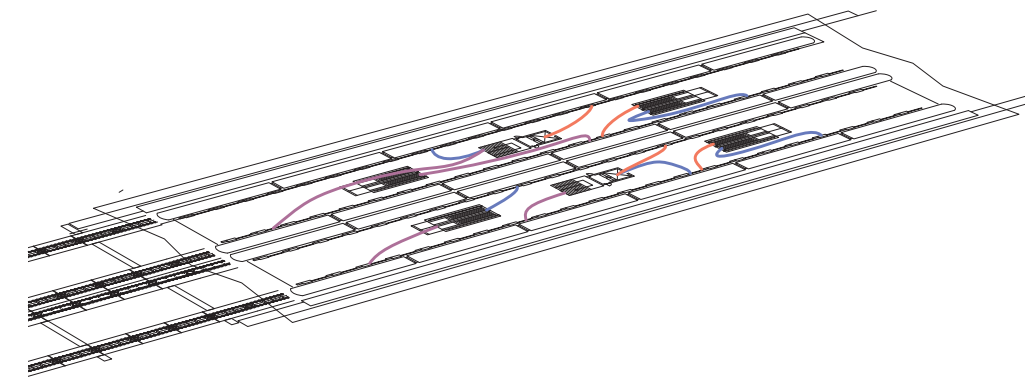
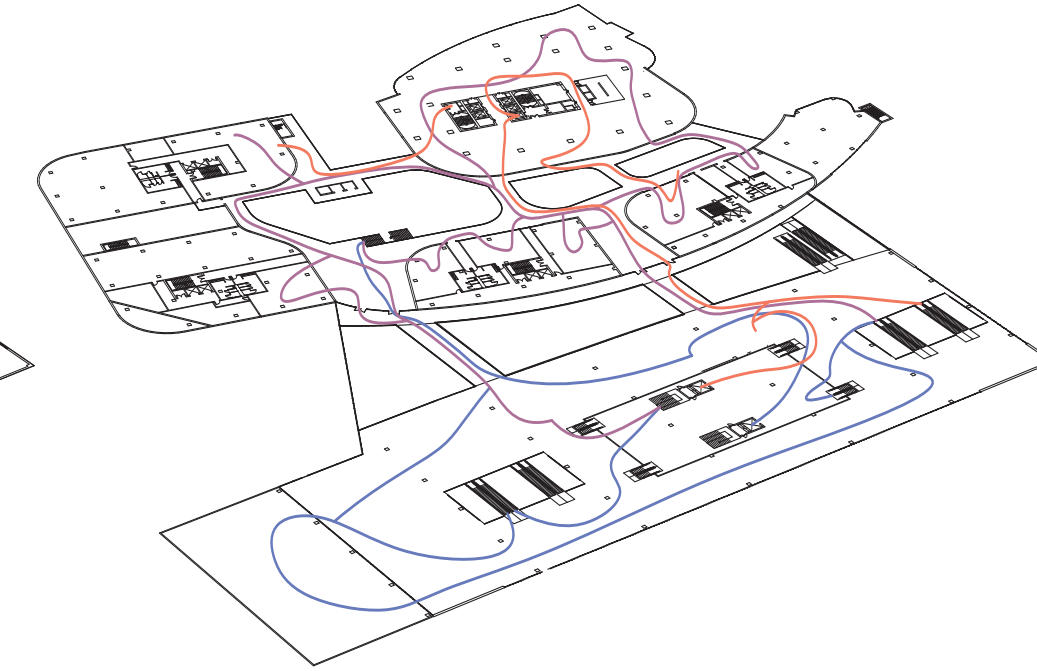
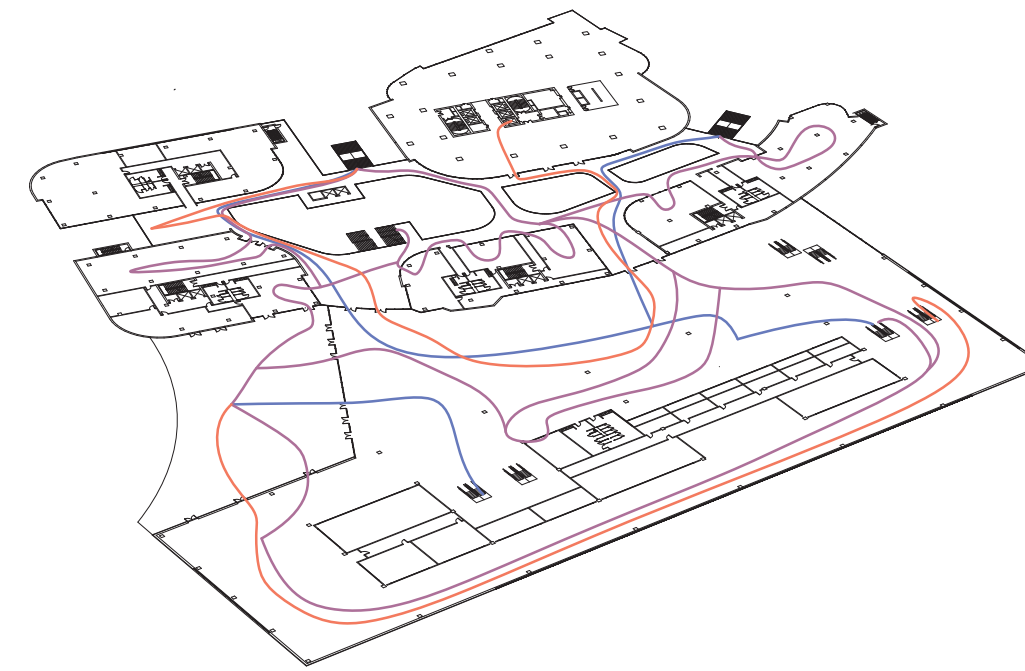
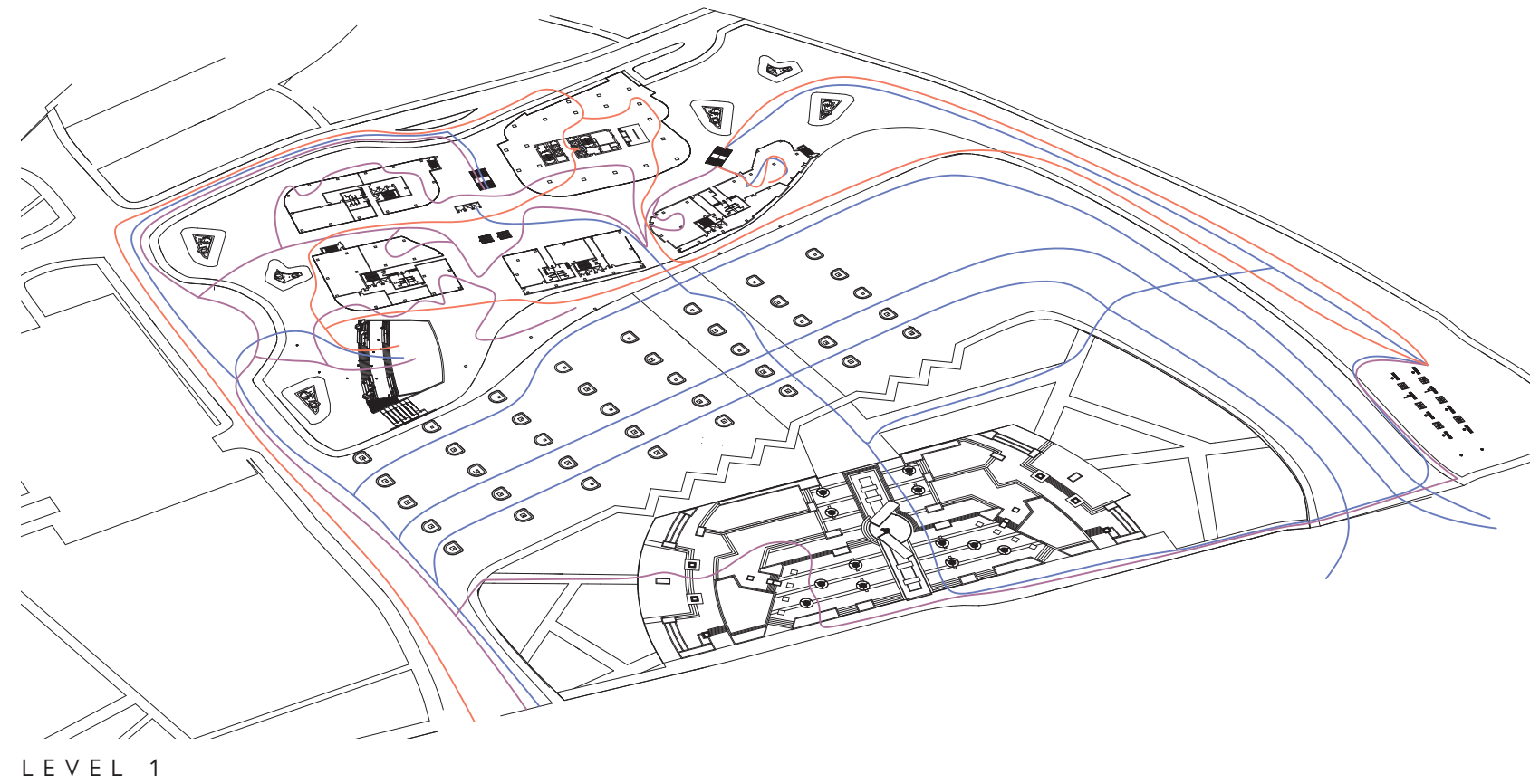
- RESIDENT-SHOPPING CENTER
- TRAVELER-TRAIN STATION
- VISITOR-HOTEL CONFERENCE

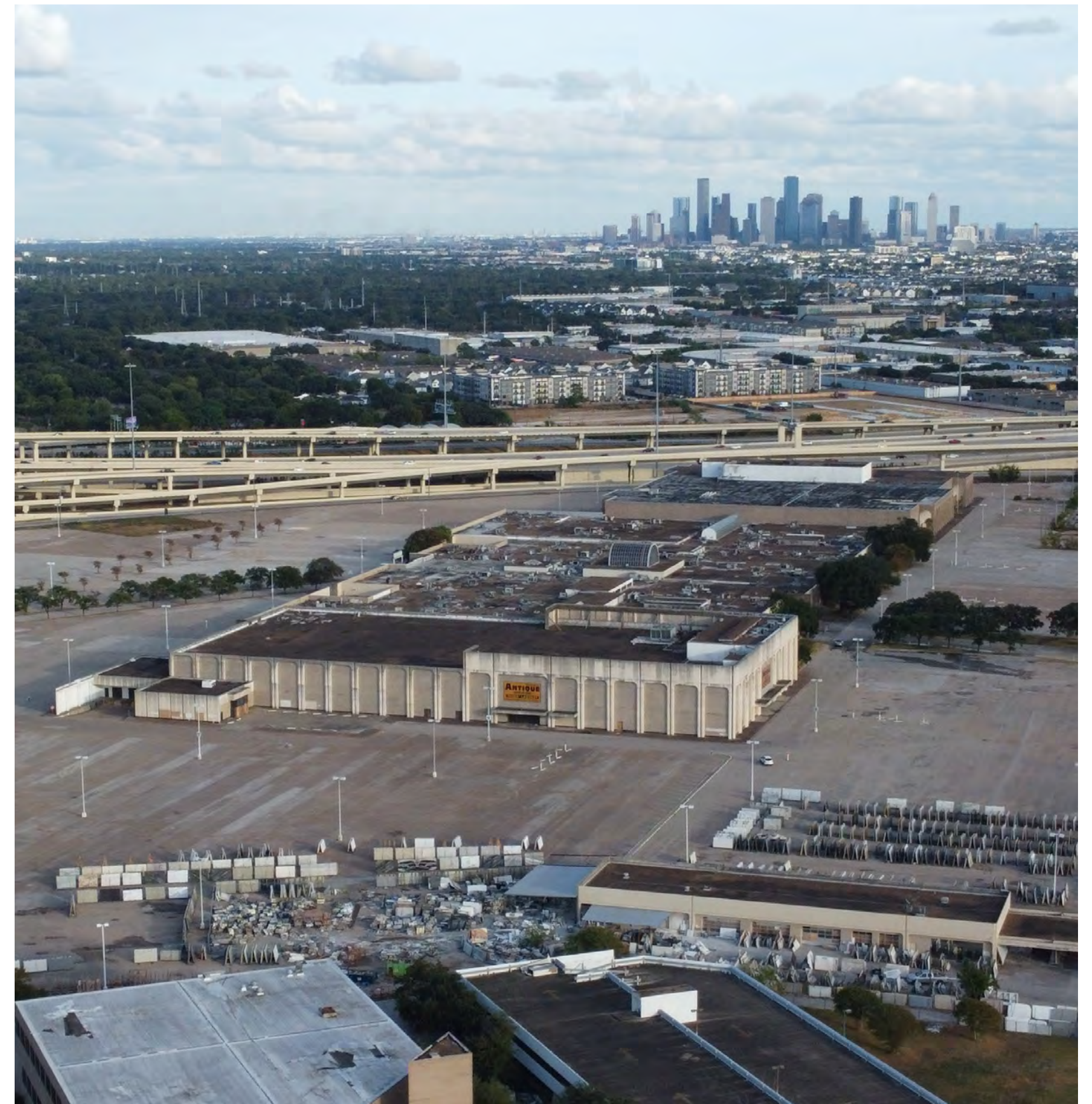
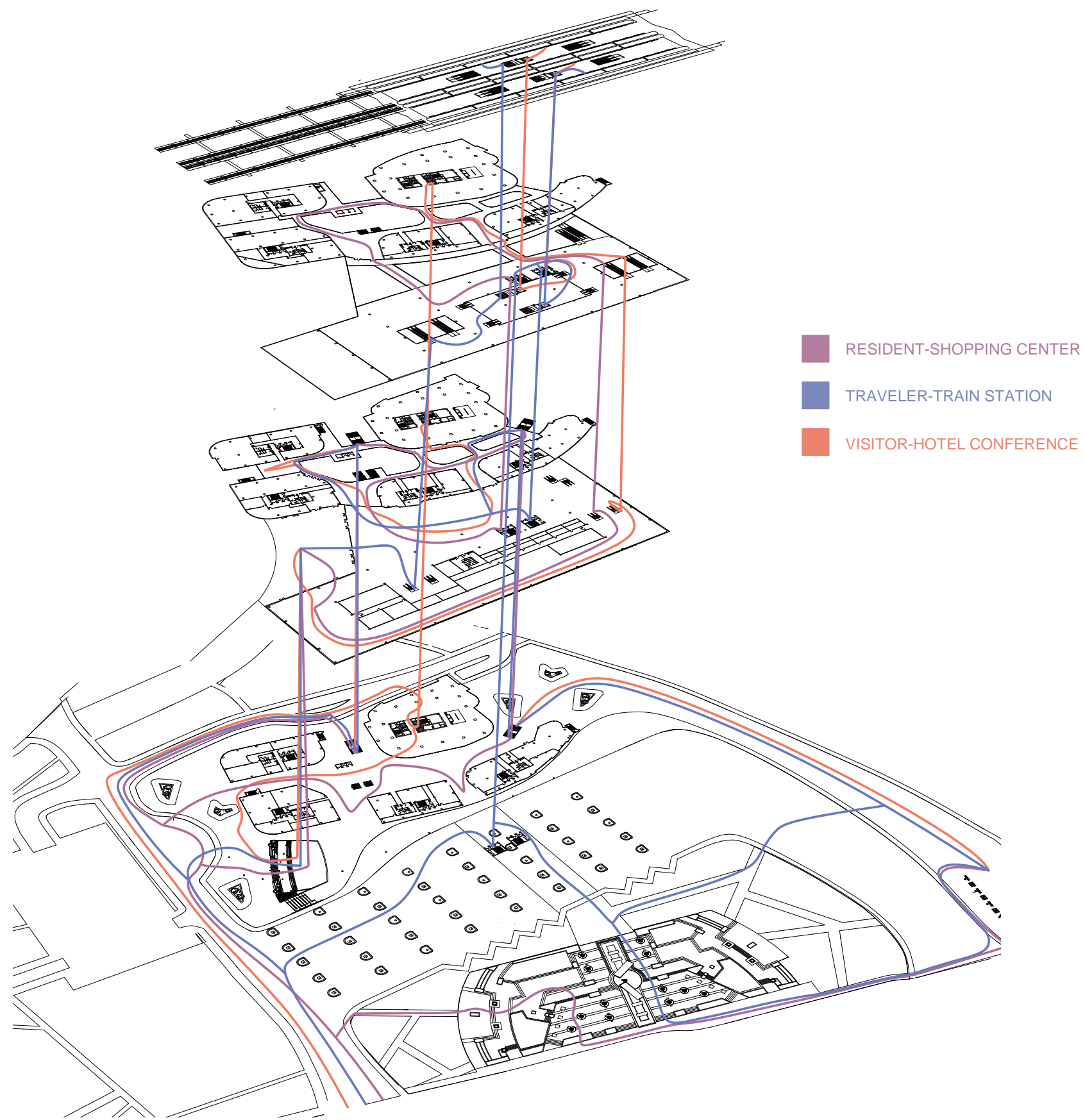


All programs work together to promote urban growth within the area and Becomes a true gateway to Houston

## CIRCULATION DIAGRAM

While the three programs were designed to cater to the specific needs of travelers, visitors, and residents, it was equally important to ensure that the circulation allowed for seamless interaction between these groups. The design of the site was carefully thought out to encourage movement and connectivity, with the shopping mall acting as a bridge between the hotel and the train station. The interconnectivity of the programs allowed visitors and residents to easily access the train station and hotel, while the shopping mall served as a hub for social activity and community engagement. The seamless circulation ensured that the site was not only functional but also fostered a sense of inclusivity, promoting a vibrant and dynamic space for all occupants.





BIRDS EYE



DR. AITANI: BIRDS-EYE LOOKING EAST TOWARD DOWNTOWN

# DESIGN PROPOSAL

# S I T E

The Northwest mall is a defunct shopping center located near the junction of Interstates 290 and 610. With a land area of roughly 48 acres and a distance to downtown Houston of less than 13 miles, this location is suitable to house not just a station but also the other components of a genuine gateway into Houston.

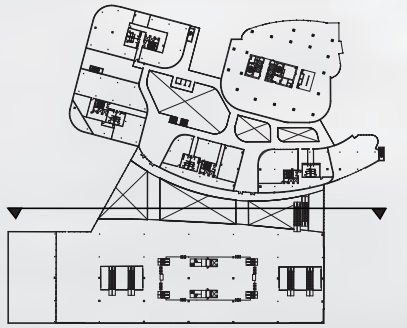
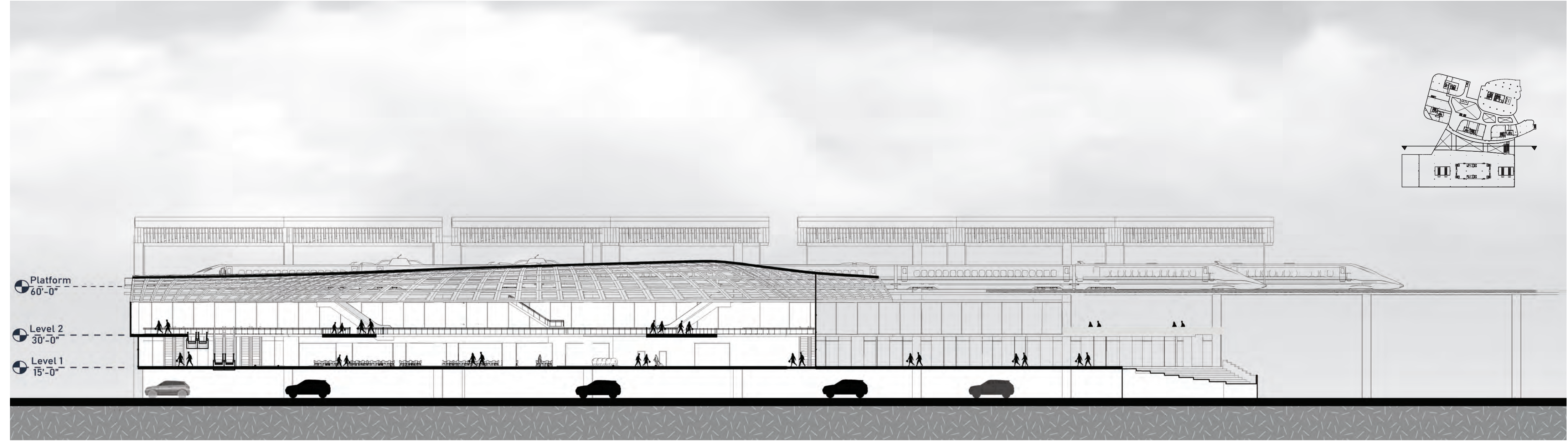


SITE PLAN

1. NEW CITY RAIL CONNECTION STATION
2. SPACE CITY SULTURE PARK
3. HIGH-SPEED RAIL TRAIN STATION
4. RETAIL
5. HOTEL/CONFERENCE
6. PARK
7. PARKING GARAGE

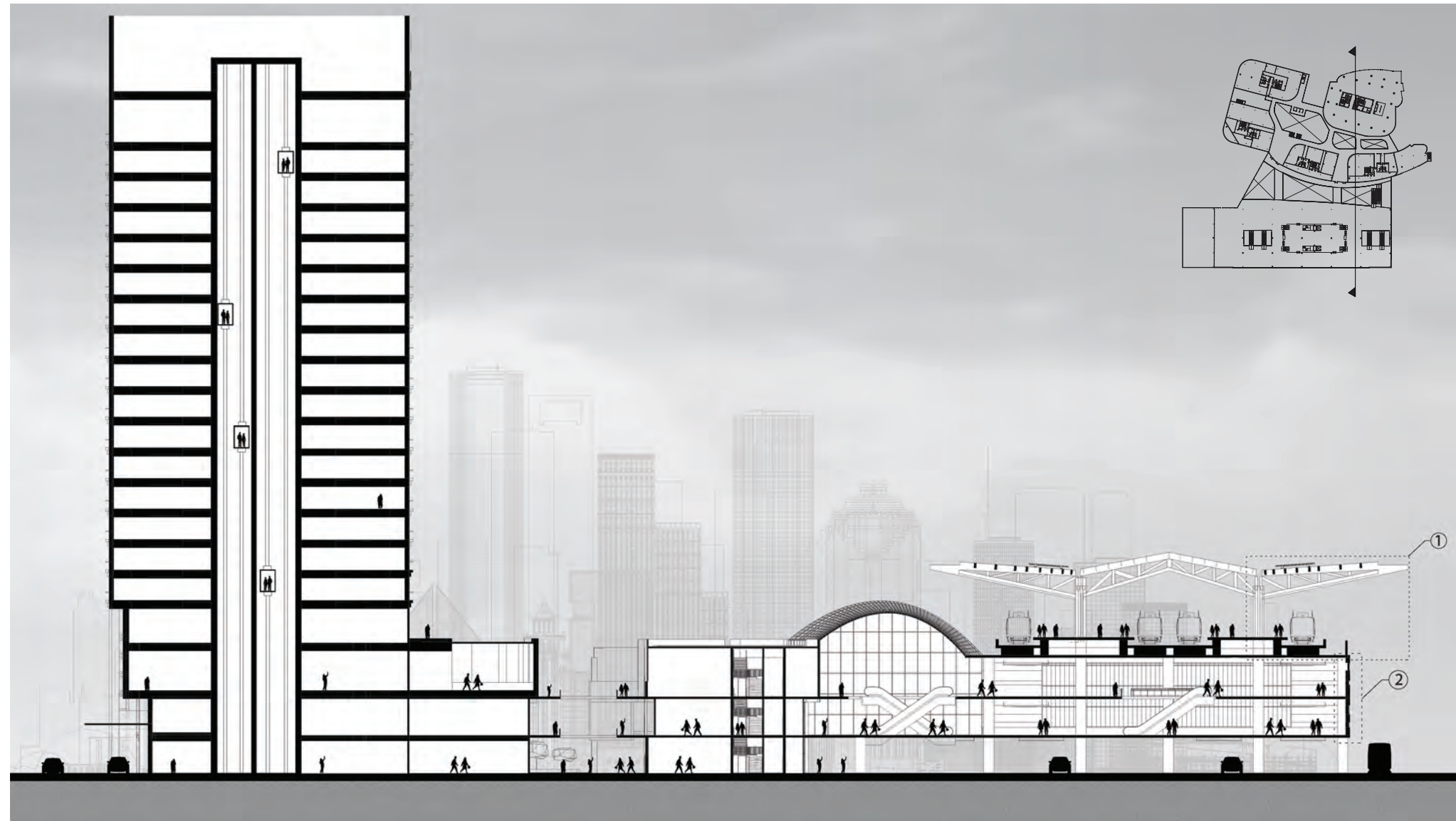
# LONGITUDINAL SECTION

The longitudinal section is a crucial element that demonstrates how vehicle circulation is a key aspect of the project. The elevated train station is an essential component that enables a smooth pickup and drop-off area for passengers, allowing for efficient and seamless transportation. Furthermore, the design is not just focused on transportation, but also incorporates a residential shopping center that is connected to the train station via a succession of mezzanines. This integration of different functions in one space enhances the experience for commuters and residents alike. They can access a variety of retail, dining, and entertainment options in a convenient and accessible location.

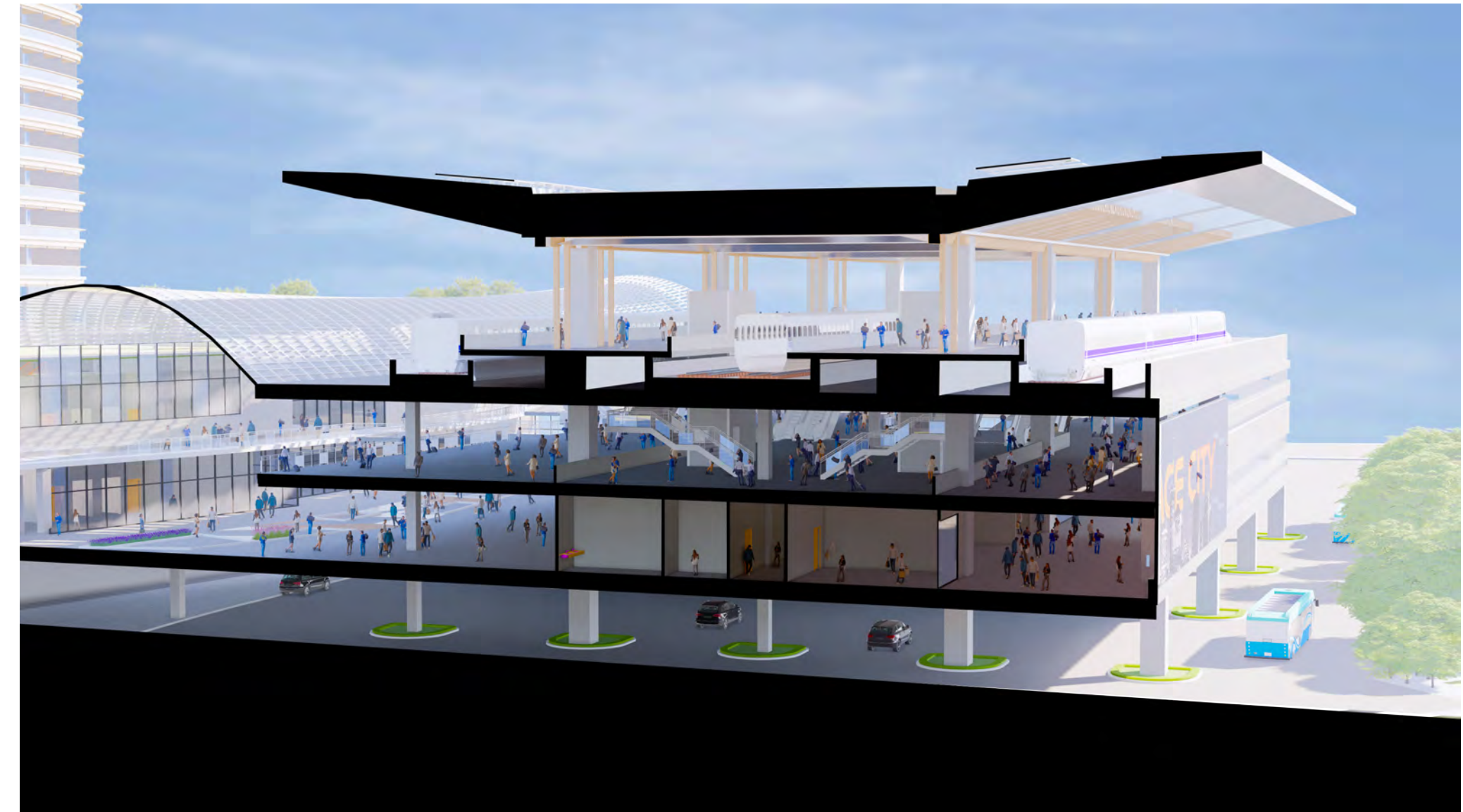


# TRANSVERSE SECTION

The transverse section of the design captures the interaction between different programs while maintaining a seamless relationship between them. The objective was to create a functional and efficient space with distinct applications for each program. This was achieved by using design elements such as clear signage and lighting, creating a cohesive environment that enhances the user experience. The design successfully balances functionality and aesthetics, allowing for efficient interaction between programs and contributing to the project's overall success.



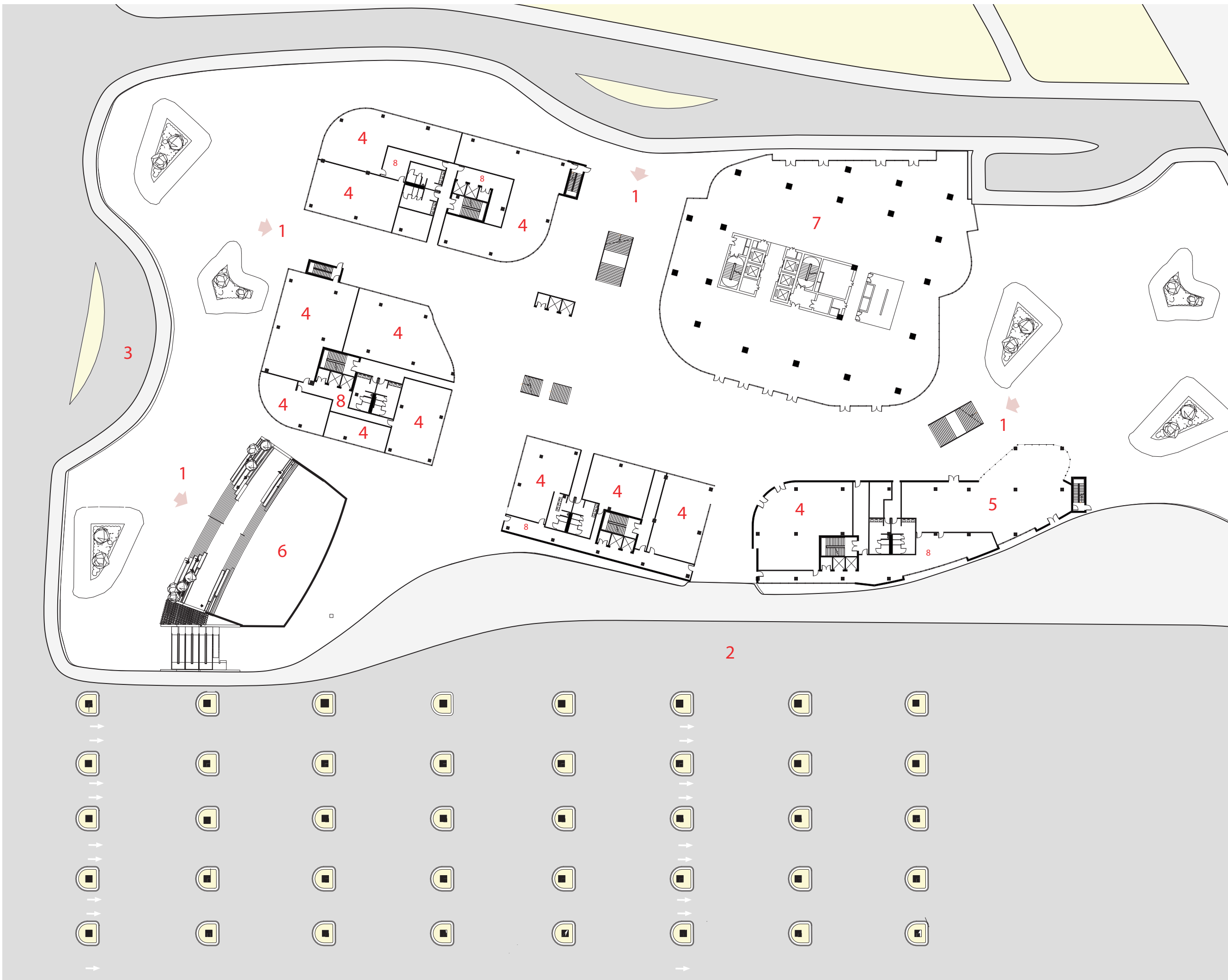
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PERSPECTIVE SECTION

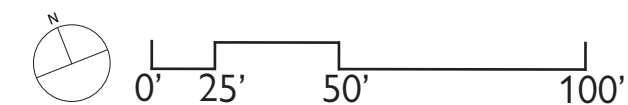
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- 1 Gateway Entrances
- 2 Traveler Drop-Off
- 3 Resident Drop-Off
- 4 Retail
- 5 Bus Waiting
- 6 Mechanical
- 7 Hotel Conference
- 8 BOH

**LEVEL 1**

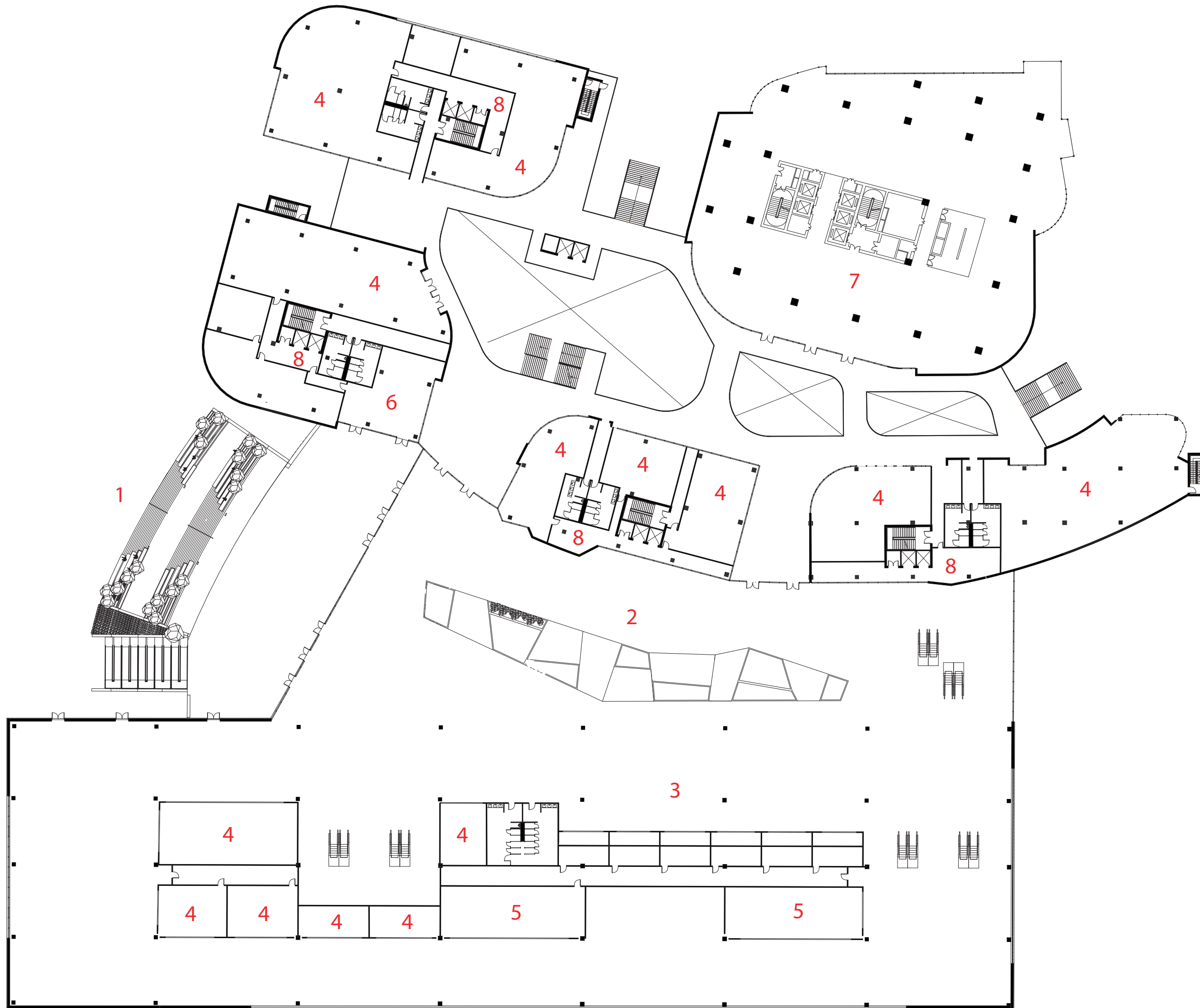


The ground level of any building is an essential factor that determines how people navigate the space. In this particular case, the ground level of the building serves as a critical connection point between the different user groups of the building. I carefully considered the needs of each group and designed specific entry points to cater to their requirements.

For instance, the passenger drop-off area was specifically designed to provide direct access to the train station, ensuring a seamless travel experience for commuters. Meanwhile, the “gateway” landscape staircase was designed to provide residents with a unique and tranquil entry experience, transitioning them from the outside environment into the building’s internal spaces.

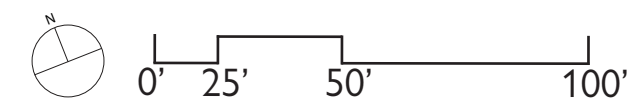
In addition, the hotel entrance was designed with visitors in mind, offering them a welcoming and distinctive experience. However, it is important to note that the users are not restricted to specific entry points, and they are free to use any entrance they prefer.

By thoughtfully designing and organizing the ground level, I was able to create a cohesive and integrated user experience that caters to the needs of different groups. The result is a building that is not only functional but also welcoming and intuitive, ensuring an enjoyable experience for all who use it.



- 1 Gateway Main Entrance
- 2 Transition Plaza
- 3 Food Court
- 4 Retail
- 5 Waiting
- 6 Restaurant
- 7 Hotel Conference
- 8 BOH

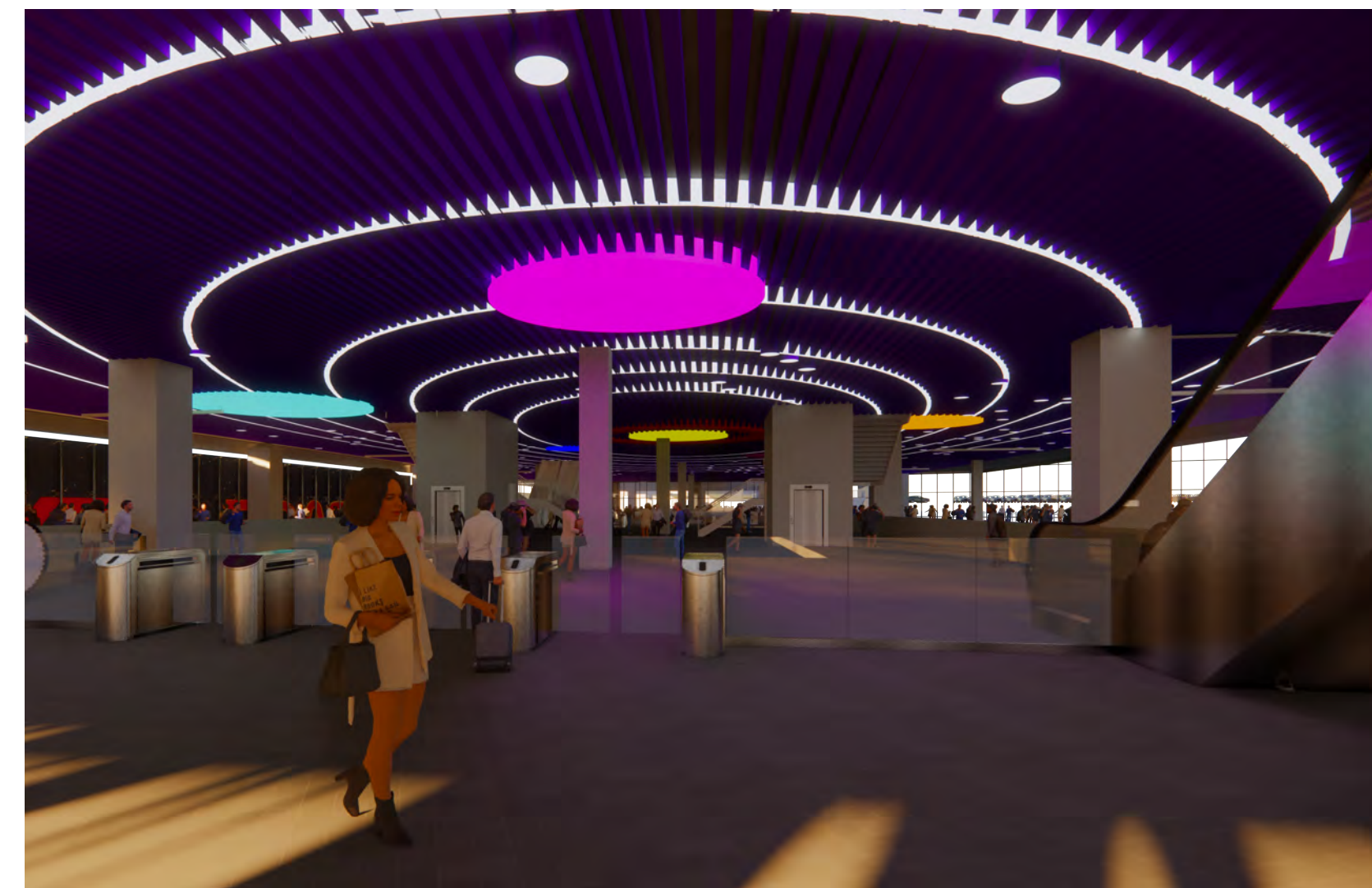
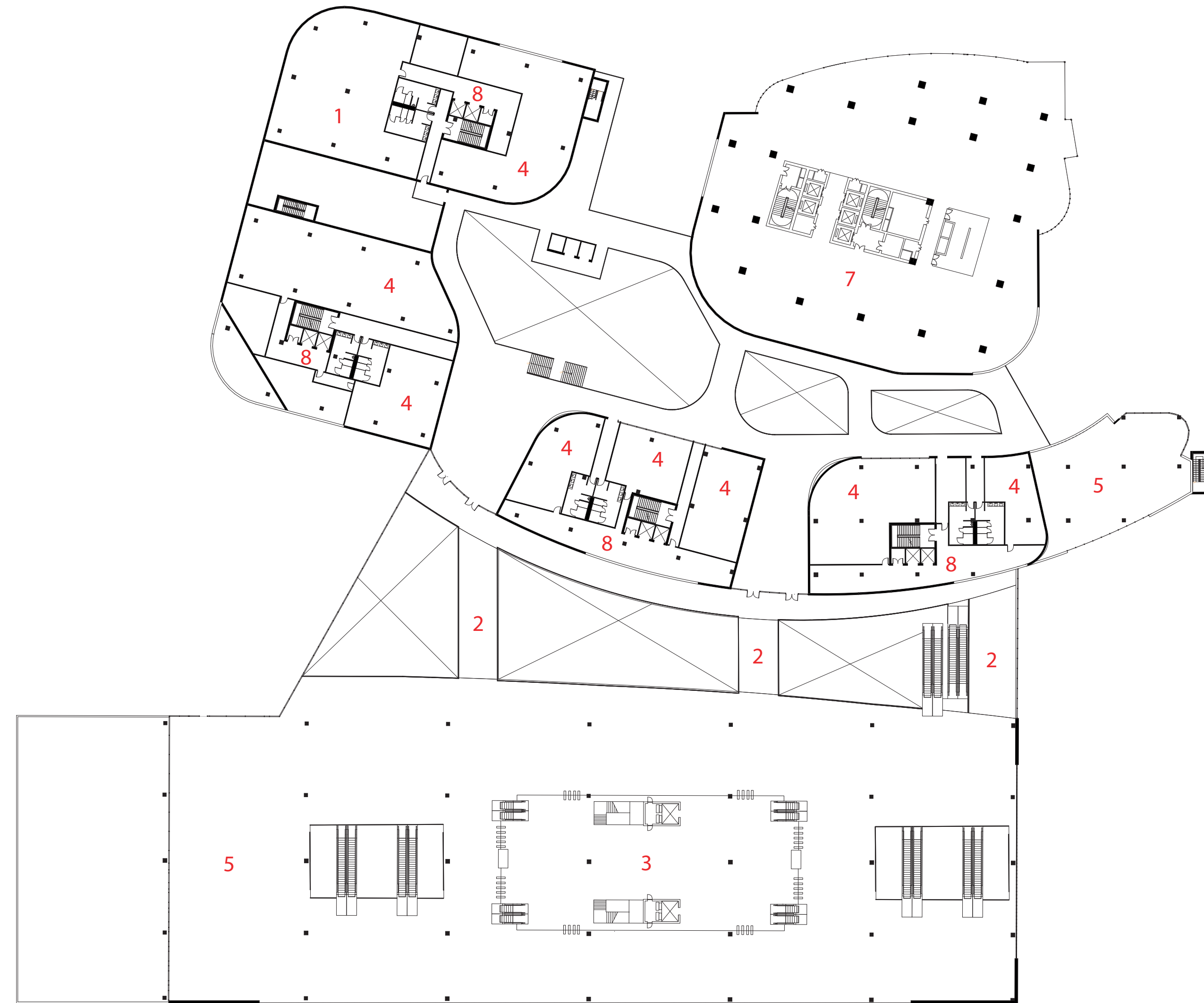
**LEVEL 2**



Moving up from the ground level, we arrive at the transitional level, which plays a crucial role in establishing a harmonious relationship between the different user groups and programs of the building. This level is where the grand atrium is located, and it serves as the main circulation point between the train station and the shopping mall. Natural light floods the atrium, creating a bright and welcoming atmosphere that enhances the user experience.

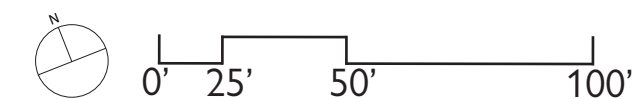
One of the key features of the transitional level is the outdoor shopping mall, which is accessible through storefront doors. The mall features a variety of local markets and retail spaces, providing visitors with a diverse range of shopping experiences. The layout of the outdoor mall promotes social interaction and community engagement, making it an ideal spot for visitors and residents alike to gather and spend time.

Overall, the transitional level acts as a bridge between the various user groups and programs, creating a sense of unity and coherence within the building. By thoughtfully designing this level, I was able to provide a unique and memorable experience for users of the building, ensuring that they feel welcomed and engaged at every turn.



- 1 Event Space
- 2 Transition Mezzanine
- 3 Security/Ticket
- 4 Retail
- 5 Waiting
- 6 Restaurant
- 7 Hotel Conference
- 8 BOH

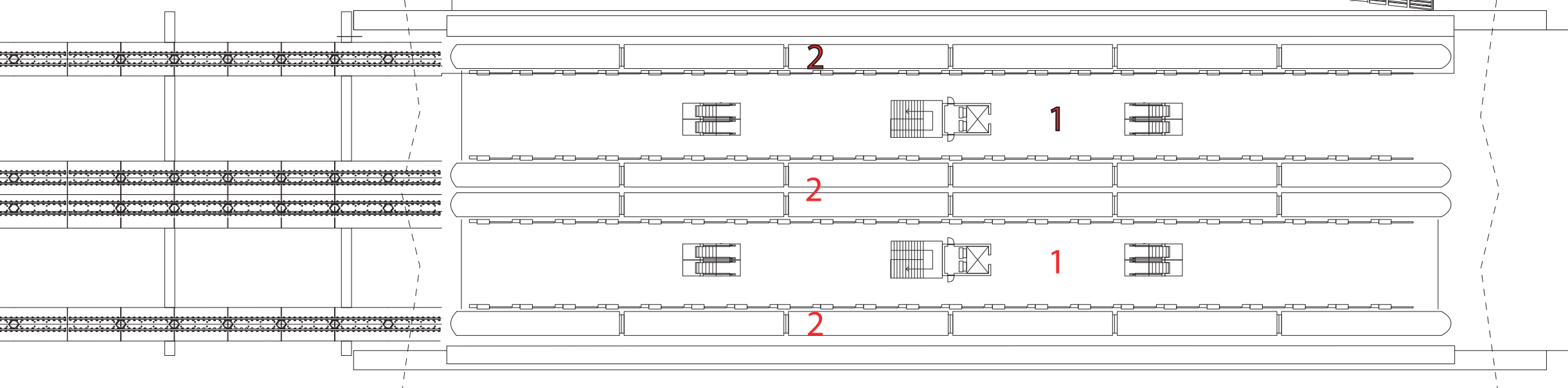
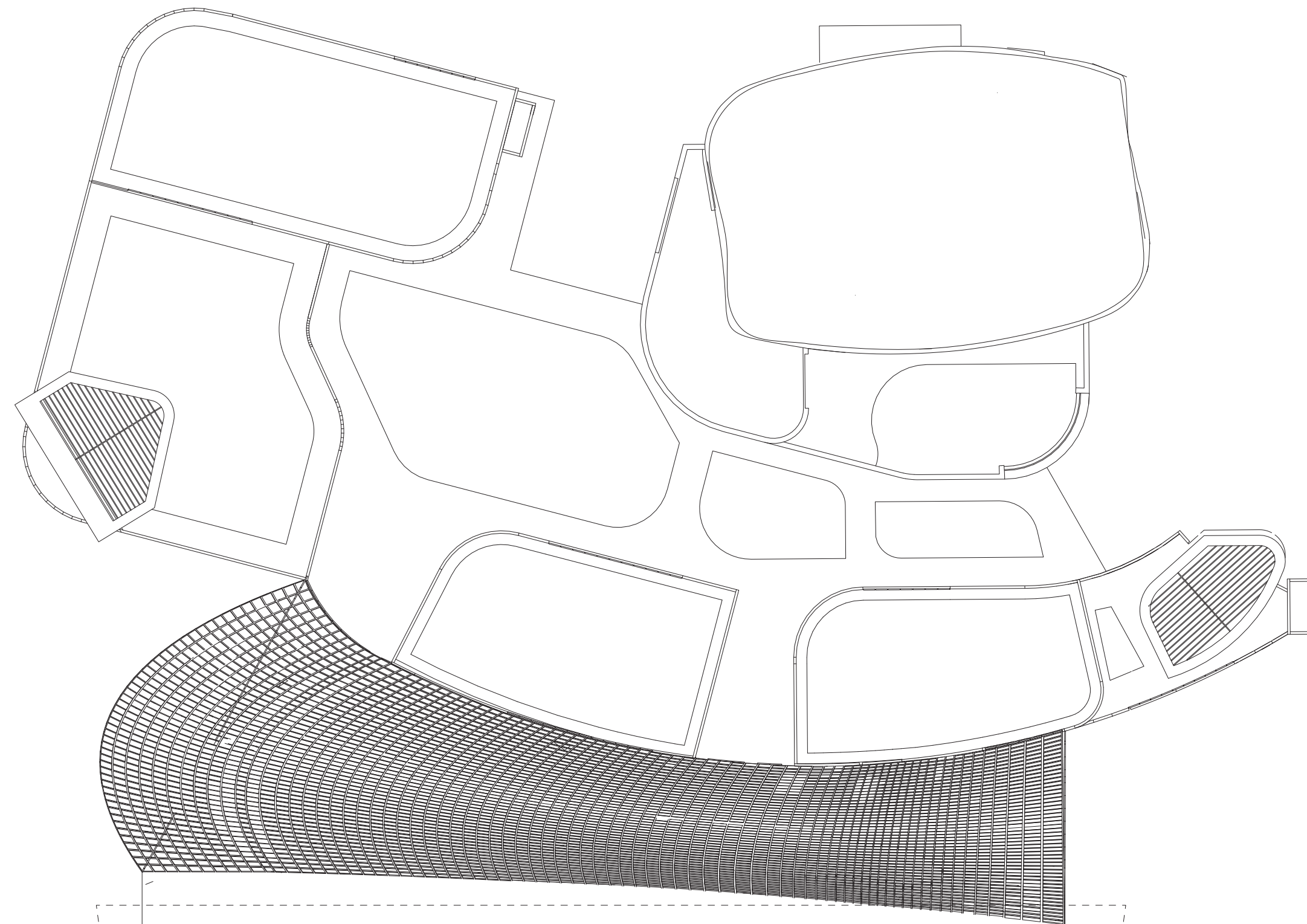
### LEVEL 3



As we ascend to the third level, we enter a space that is highly focused on the needs of travelers. This level is where passengers prepare to board the high-speed rail, and as such, it features an open circulation plan and a prominent security checkpoint.

In addition to the necessary travel amenities, the third level also offers a range of features that make it a compelling destination in its own right. One such feature is the series of bridges that connect the shopping mall across the transitional atrium, allowing occupants to access the shopping mall and hotel directly from their train.

Overall, the third level is a highly functional and practical space that provides travelers with everything they need to prepare for their journey. However, it also offers a range of amenities that make it an enjoyable and memorable experience, such as stunning views of the surrounding area and comfortable seating areas for waiting passengers. By designing this level with both functionality and user experience in mind, I was able to create a space that meets the needs of travelers while also offering a unique and enjoyable experience.



The train platform level is the ultimate gateway experience, offering passengers a complete panoramic view of Houston's skyline. This open and exposed level is designed to create a memorable and striking first impression of the city, reflecting the importance of the project's connection to downtown.

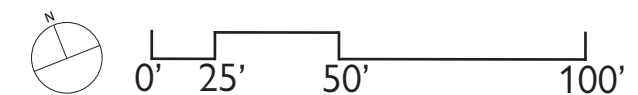
By positioning the station to directly face the city, I ensured that travelers stepping off the train would be greeted with an awe-inspiring view, reinforcing the building's narrative as a key entry point into Houston. The level's design takes full advantage of the spectacular views, creating a space that is both functional and aesthetically pleasing.

In addition to the stunning skyline views, the train platform level also offers a range of features that make it a comfortable and convenient space for travelers. These include comfortable seating areas, clear signage, and ample space for luggage and other personal belongings. By thoughtfully designing this level, I was able to create a space that not only meets the functional needs of travelers but also provides an enjoyable and memorable experience that reinforces the building's role as a gateway to Houston.

1 Train Platform

2 Train Tracks

LEVEL 4



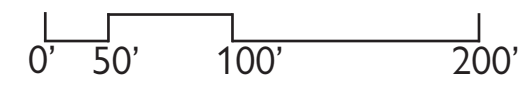


Urban  
Gateway Hotel

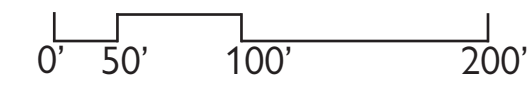
ELEVATIONS



EAST ELEVATION



NORTH ELEVATION





WEST ELEVATION

0' 50' 100' 200'



SOUTH ELEVATION

0' 50' 100' 200'

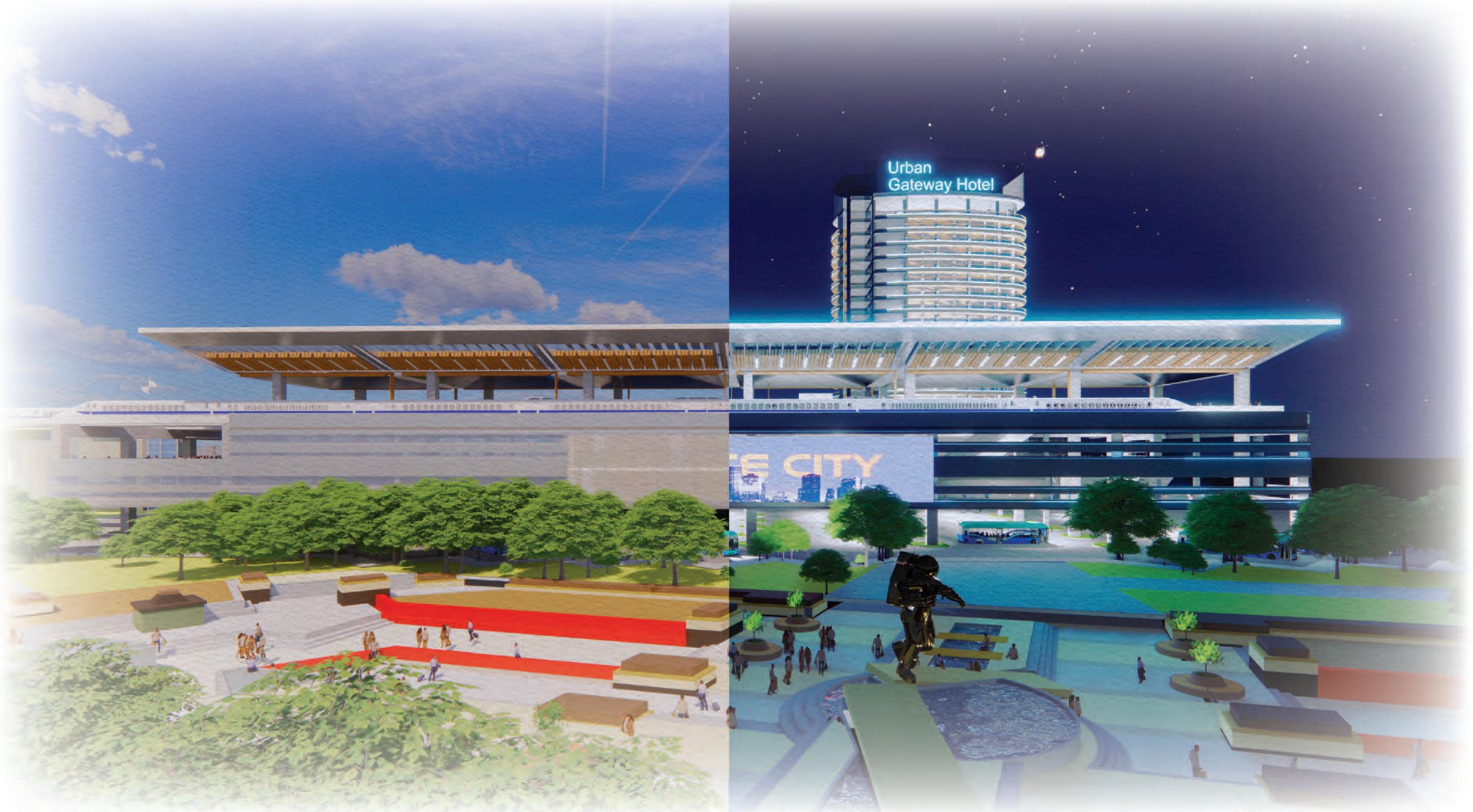
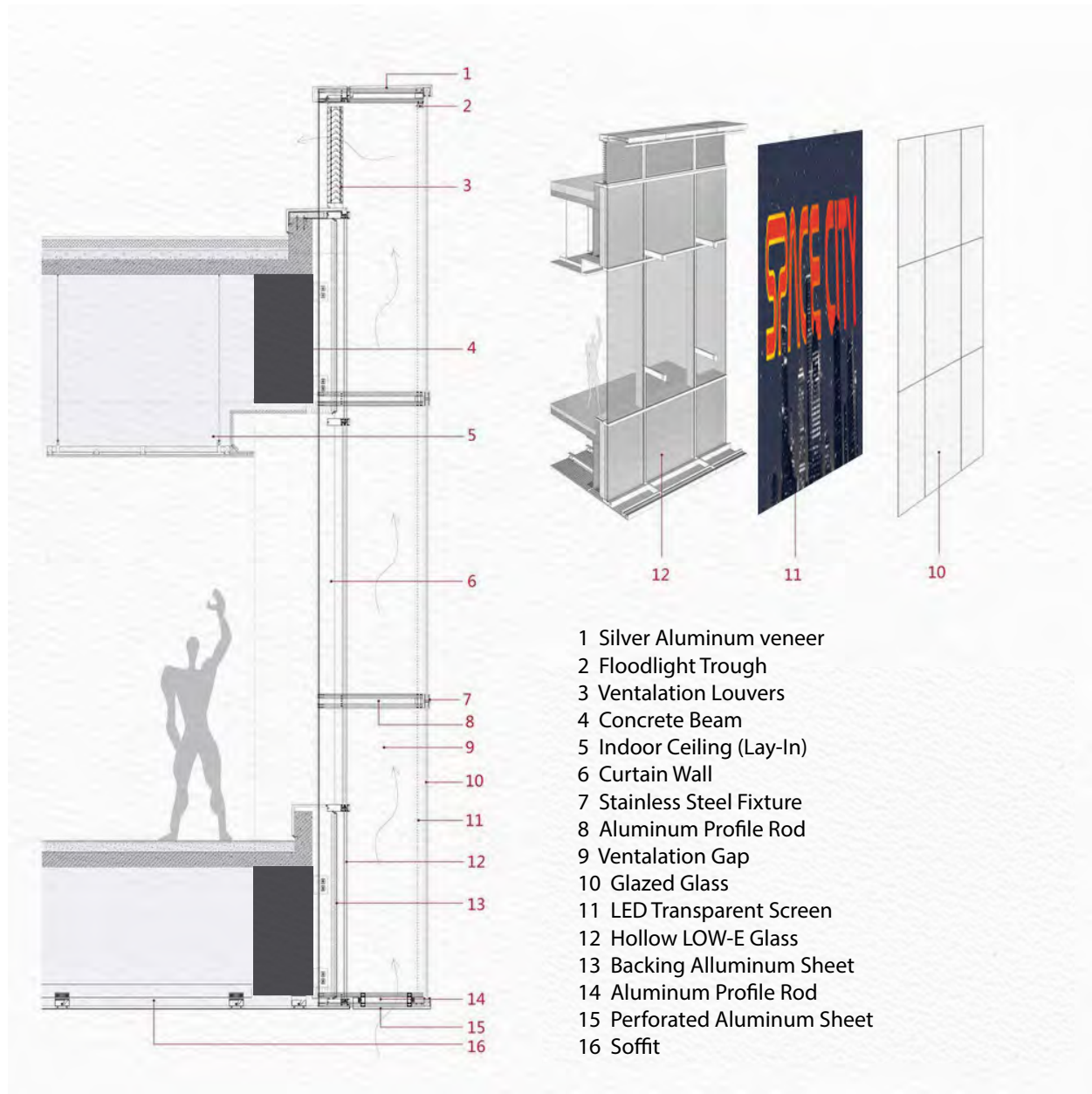






DR. AITANI: BIRDS-EYE OF EXISTING SITE CONDITION

# DETAILS

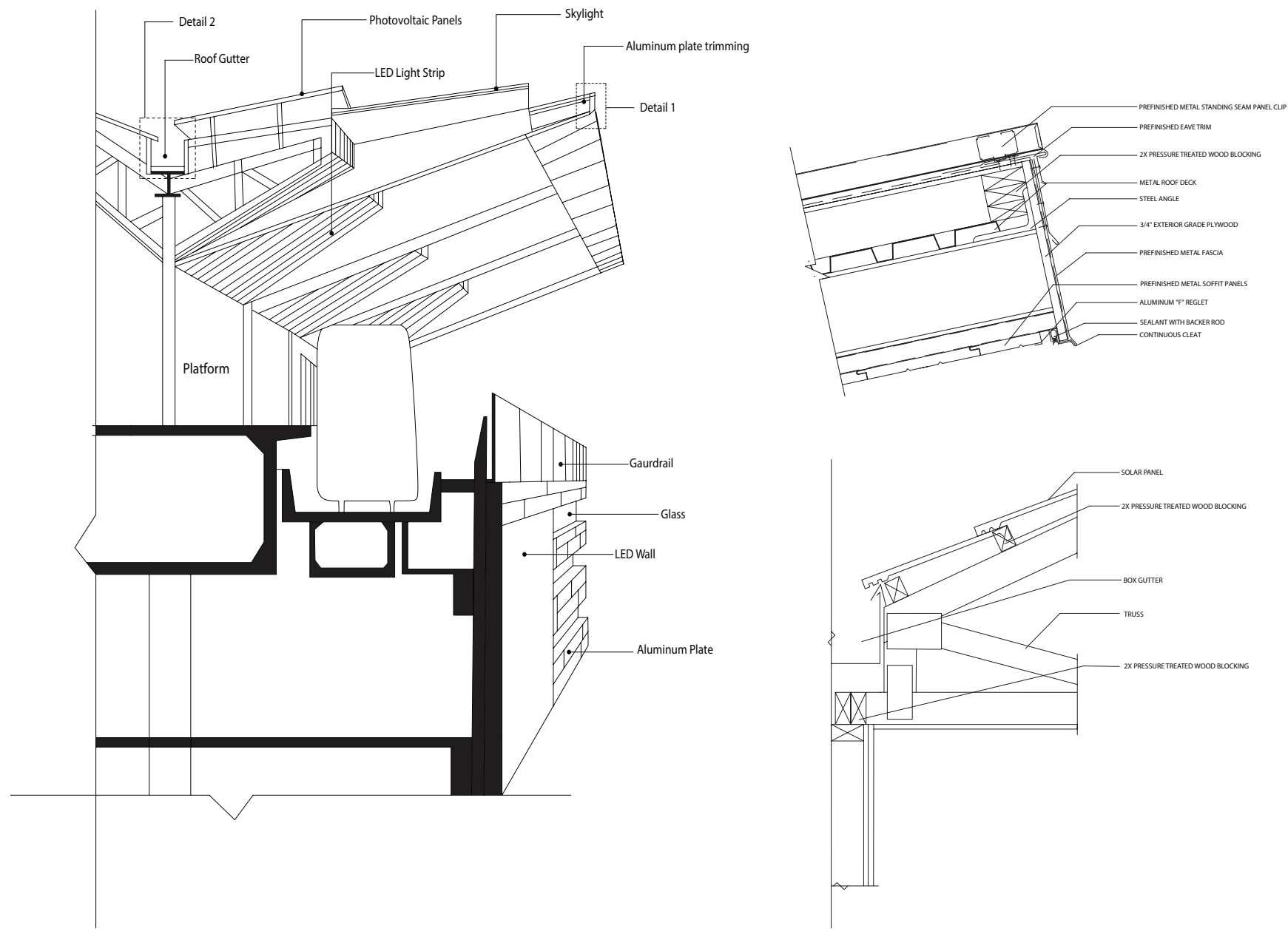


The initial inspiration for the project came from a book called "Learning from Las Vegas" by Robert Venturi, which highlights how various places in Las Vegas use external elements to entice people to enter the building and explore the interior. In a similar vein, the south elevation of the station was designed to serve as the primary entry point into the site.

The site was also planned in conjunction with a public park adjacent to the street. This park was envisioned as a community gathering space for events like concerts or farmers markets. The project's driving force was to foster a sense of community and to connect the site to the existing city fabric.

The theme of Houston, where the project is located, is "Space City." This theme has been an integral part of the city's identity since the 1960s, during the height of space exploration. To connect the project to the city's space exploration heritage, the station's south facade features an LED screen that displays not only specific themes of the city but also highlights the NASA park created below. During the day, the screen can be turned off, and the polycarbonate screen serves as a protective layer against direct sunlight while still allowing natural light to enter the space.

Overall, the project was designed with a deep understanding of its context and a keen focus on community engagement. The station's south facade, the adjacent park, and the theme of Houston were all carefully considered to create a space that not only serves a functional purpose but also integrates seamlessly into the surrounding community.



Undoubtedly, the Train Station Platform is one of the most significant and essential features of my project. The platform serves as the heart of the space, providing a functional space for passengers to embark and disembark from trains, while also acting as a symbol of the project's purpose and identity.

The butterfly roof structure is a distinctive and eye-catching element that captures the attention of passersby, drawing them into the space to experience it for themselves. Its unique design adds an iconic quality to the platform, making it stand out as a recognizable landmark in the surrounding urban environment.

When designing the platform, I recognized the importance of connecting with all levels of urban circulation, including the intersection of 290 and 610. By strategically placing the platform in a highly visible location, by-passers on the road that once overlooked a dying site are now drawn to the space, intrigued by the butterfly roof and the activity of the trains arriving and departing.

Overall, the Train Station Platform represents a critical component of my project, serving both a functional and symbolic purpose in the community. Its design has successfully transformed a once-neglected space into a vibrant and dynamic hub of activity, attracting visitors and locals alike to experience the space's unique character and identity.



DR. AITANI: BIRDS-EYE OF EXISTING SITE CONDITION

# CONCLUSION



## CONCLUSION

The Urban Gateway project seeks to spark and unite the two major cities of Texas, bringing a multitude of social and economic benefits to the state, particularly to the city of Houston. Instead of operating solely as a destination interchange for travelers from point A to B, the station functions as a bridge that connects the city and its residents, facilitating positive growth and development for the community. The Urban Gateway aims to serve as a hub that fosters social and economic activities, providing residents with access to transportation, education, employment opportunities, and other essential services that are crucial to the city's prosperity. Overall, the Urban Gateway project represents a significant investment in the future of Houston and the state of Texas, with the potential to yield numerous benefits for years to come.

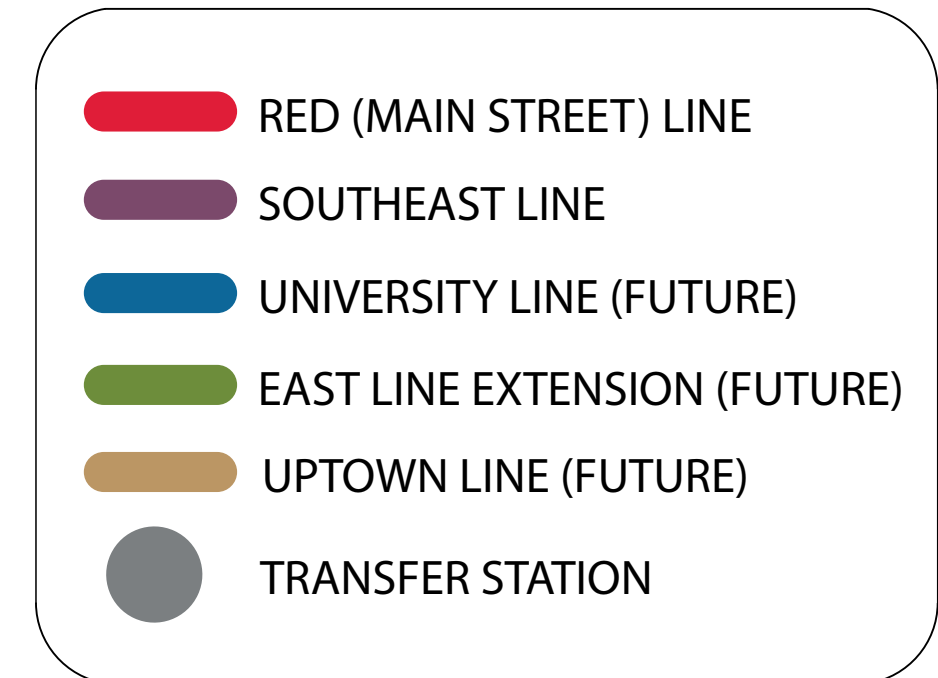
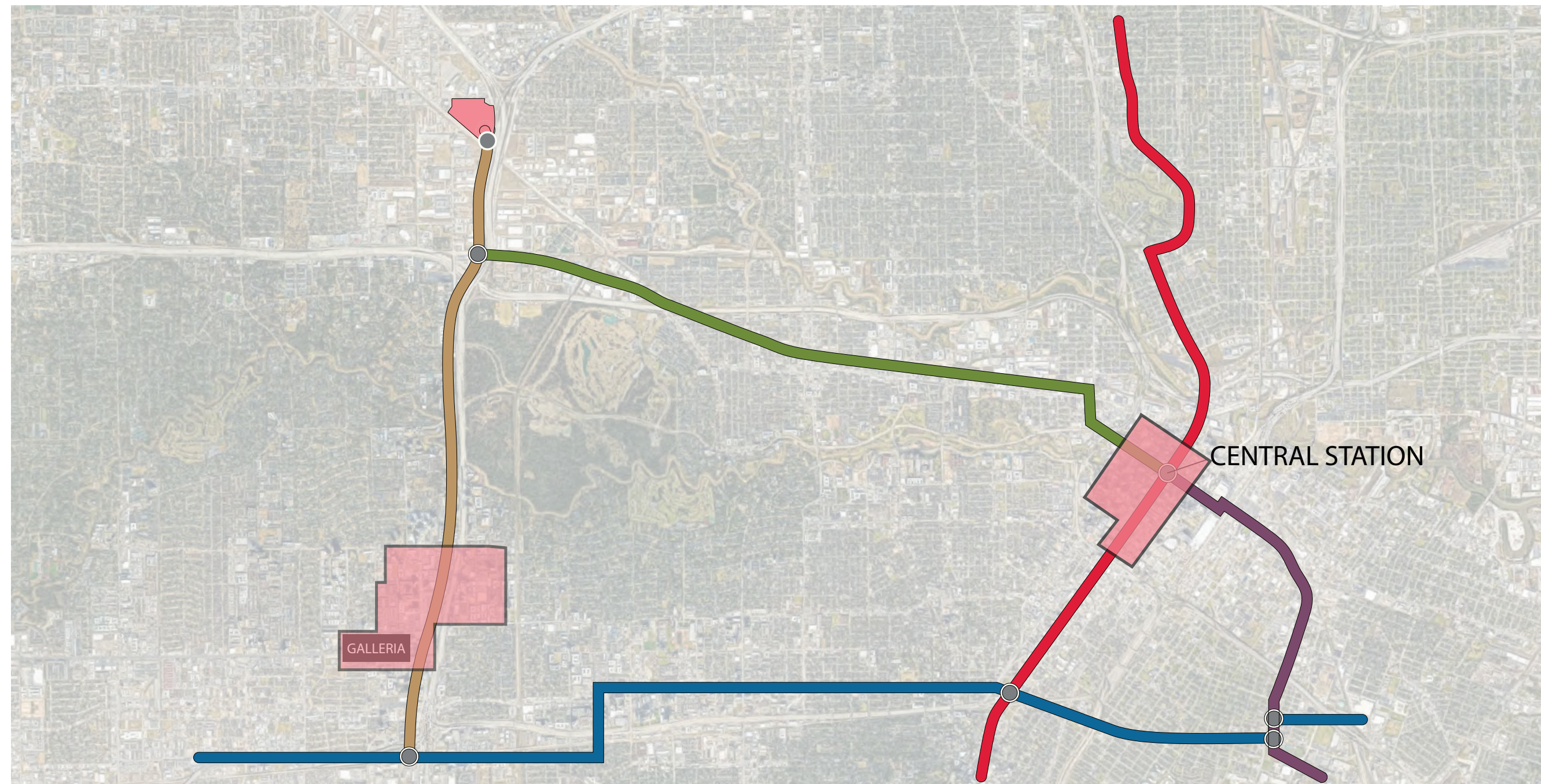


DR. AITANI: BIRDS-EYE LOOKING SOUTH TOWARD GALLERIA DISTRICT

# APPENDIX

## METRO - RAIL MAP

Houston's infrastructure currently poses a challenge for having a centralized train station in the heart of downtown, as seen in other cities in Europe and Japan. However, to ensure a smooth transition for travelers arriving at the station, we have taken steps to improve our infrastructure. We added more metro-rail line stations on our site and mapped out new routes to connect with popular areas that travelers may need to reach. Our aim is to make traveling more efficient and convenient for our passengers. With the new changes, they can seamlessly get off the train and easily make their way to their intended destination, even if it's 8 miles outside of the core of downtown Houston.



## R E F E R E N C E S

### I M A G E S

P A G E 1 0 , 1 1 :  
Simmons-Boardman Publishing Inc. “Texas Central: Investing in High-Speed Rail for Texas.” *Railway Age*, 16 June 2021, <https://www.railwayage.com/passenger/high-performance/texas-central-investing-in-high-speed-rail-for-texas/>. Accessed 20 April 2023.

Webuild Group. Texas Central. <https://texashighspeedrail.webuildgroup.com/en/>. Accessed 20 April 2023.

P A G E 1 6 , 1 7 :  
AZPML. “Birmingham New Street Station” 24 Dec 2015. *ArchDaily*. Accessed 20 Apr 2023. <https://www.archdaily.com/780568/birmingham-new-street-station-azpml>

P A G E 1 8 , 1 9 :  
John McAslan + Partners. “King’s Cross Station” 29 Mar 2012. *ArchDaily*. Accessed 20 Apr 2023. <https://www.archdaily.com/219082/kings-cross-station-john-mcaslan-partners>.

P A G E 2 0 , 2 1 :  
SOM. “Moynihan Train Hall” 06 Jan 2021. *ArchDaily*. Accessed 20 Apr 2023. <https://www.archdaily.com/954941/moynihan-train-hall-som>.

P A G E 2 4 , 2 5 :  
Google. Google Earth. <https://earth.google.com/web/>.

Ledoux, Abby. “24 Hours at The Galleria.” *Houstonia*, SagaCity Media, Inc., December 2013, <https://www.houstoniamag.com/style-and-shopping/2013/12/24-hours-at-the-galleria-december-2013>.

City of Houston. “METRORail.” City of Houston, <https://www.houstontx.gov/about/houston/lightrail.html>.

Nelson Byrd Woltz Landscape Architects. “Memorial Park Eastern Glades.” Nelson Byrd Woltz Landscape Architects, <https://www.nbwla.com/projects/park/memorial-park-eastern-glades>.

Memorial Park Conservancy. Memorial Park Conservancy, <https://www.memorialparkconservancy.org/>.

P A G E 3 0 :  
Eezy, Inc. Multicultural and Multiethnic People Community Integration Concept. Vecteezy, <https://www.vecteezy.com/vector-art/3503491-multicultural-and-multiethnic-people-community-integration-concept>.

Eezy, Inc. Growth Icon Logo Vector Illustration Bar Graph Symbol Template for Graphic and Web Design Collection. Vecteezy, <https://www.vecteezy.com/vector-art/9317620-growth-icon-logo-vector-illustration-bar-graph-symbol-template-for-graphic-and-web-design-collection>.

Eezy, Inc. Profile with Gear Detail Style Icon. Vecteezy, <https://www.vecteezy.com/vector-art/2650148-profile-with-gear-detail-style-icon>.  
Here’s an example MLA citation for the image you provided:

Eezy, Inc. Vector Walking Icon. Vecteezy, <https://www.vecteezy.com/vector-art/352807-vector-walking-icon>.

### D I G I T A L S O U R C E S

Webuild S.p.A. Texas Central. Webuild, <https://texashighspeedrail.webuildgroup.com/en>.

Rudin Center for Transportation Policy and Management at NYU Wagner. SuperCommuters: A Snapshot of the Megacommuter Phenomenon in the United States, 2015, [https://wagner.nyu.edu/files/rudincenter/supercommuter\\_report.pdf](https://wagner.nyu.edu/files/rudincenter/supercommuter_report.pdf).

Texas Central. Texas Central, <https://www.texascentral.com/>.

### B O O K S O U R C E S

Venturi, Robert. *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*, MIT Press, 1977.

Speck, Jeff. *Walkable City: How Downtown Can Save America, One Step at a Time*, Farrar, Straus and Giroux, 2012.



