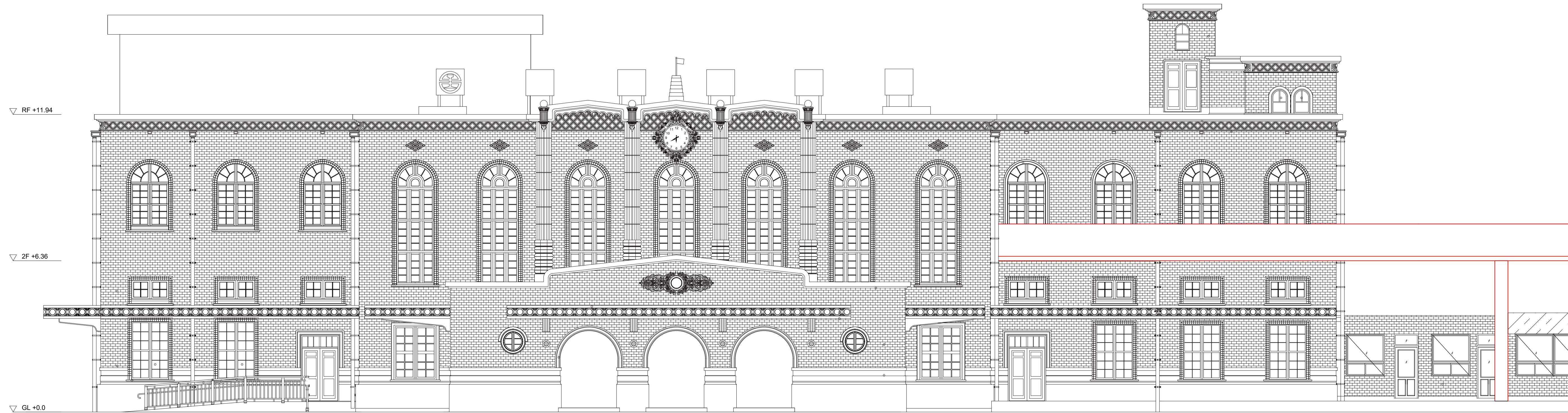
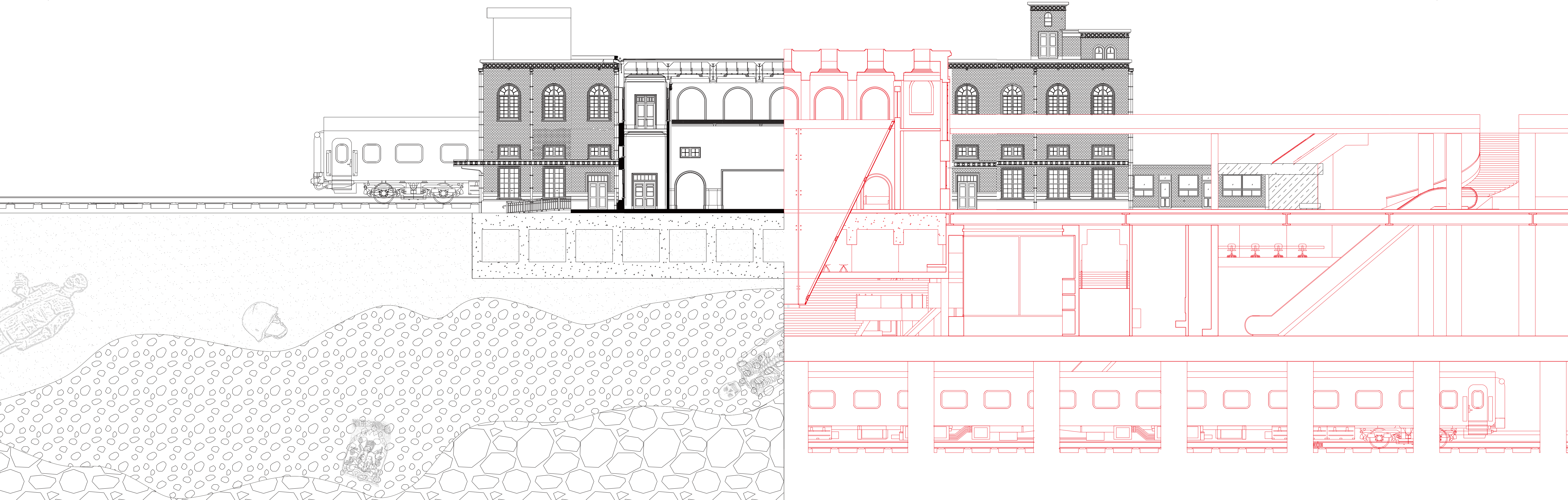
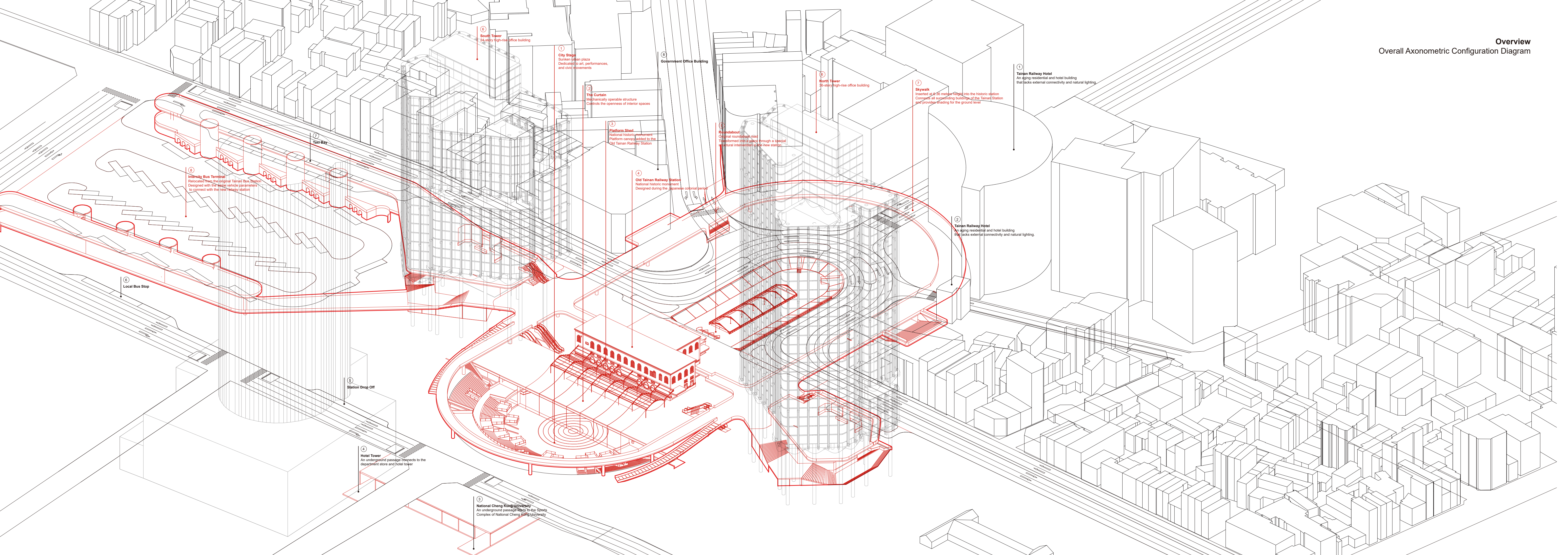


Tainan Station Renovation



Tainan Station Renovation
台南火車站更新





6 South Tower
24-story high-rise office building

1 City Stage
Sunken urban plaza
Dedicated to art, performances,
and civic movements

8 Government Office Building

2 The Curtain
Mechanically operable structure
Controls the openness of interior spaces

5 North Tower
35-story high-rise office building

7 Skywalk
Inserted at 36 meters height into the historic station
Connects all surrounding buildings of the Tainan Station
and provides shading for the ground level

1 Tainan Railway Hotel
An aging residential and hotel building
that lacks external connectivity and natural lighting.

7 Taxi Bay

9 Intercity Bus Terminal
Relocated from the original Tainan Bus Station
Designed with the same vehicle parameters
to connect with the new railway station

4 Roundabout
Original roundabout road
Transformed into a plaza through a special
architectural intervention in the new station

3 Platform Shed
National historic monument
Platform canopy added to the
Old Tainan Railway Station

4 Old Tainan Railway Station
National historic monument
Designed during the Japanese colonial period

2 Tainan Railway Hotel
An aging residential and hotel building
that lacks external connectivity and natural lighting.

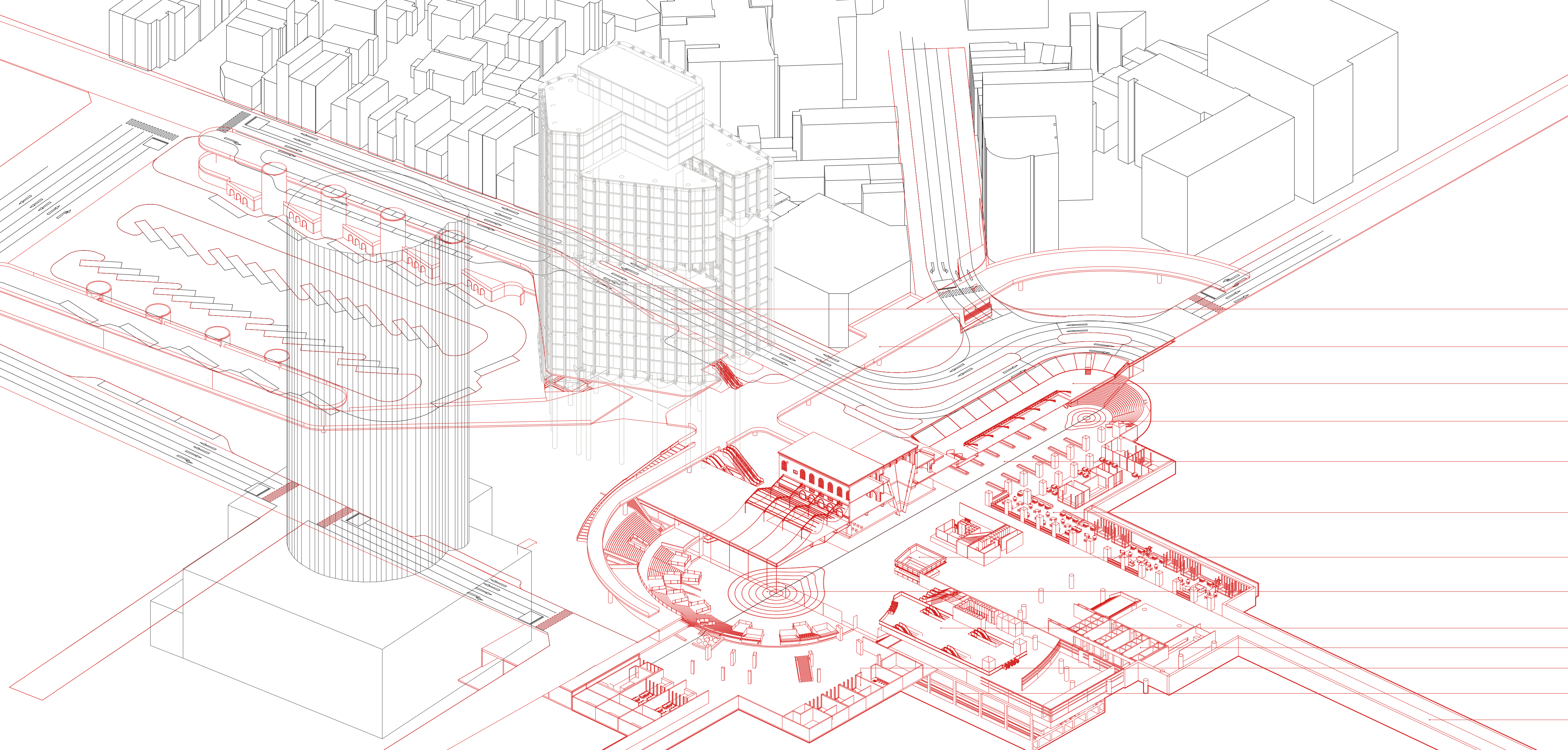
6 Local Bus Stop

5 Station Drop Off

4 Hotel Tower
An underground passage connects to the
department store and hotel tower

3 National Cheng Kung University
An underground passage leads to the Sports
Complex of National Cheng Kung University

Overview
 Overall Axonometric Configuration Diagram
 with Northern Site B2 Level



- ① **South Tower**
24-story high-rise office building
- ② **Skywalk**
Inserted at 8.36 meters height into the historic station. Connects all surrounding buildings of the Tainan Station and provides shading for the ground level
- ③ **Roundabout**
Original roundabout road. Transformed into a plaza through a special structural intervention in the new station
- ④ **Roundabout Underground Vestibule**
Underground passages connecting the areas around the roundabout.
- ⑤ **Waiting Lobby**
The waiting area in the new station preserves the atmosphere of the old station waiting hall.
- ⑥ **Retail and Cafe**
Retail areas serving the waiting lobby echo the design of Taiwanese arcades.
- ⑦ **Museum Entrance Counter**
B1 History Memorial Hall service counter is in a controlled area; ticket required.
- ⑧ **CITY STAGE**
Sunken urban plaza, dedicated to art, performances, and civic movements.
- ⑨ **TRA Restricted Area**
- ⑩ **Office Tower Core / B2 Reception**
- ⑪ **Back Station Retail**
- ⑫ **B3 Platform**
- ⑬ **Underground Passages Towards Commercial Area**

Tainan Station Renovation

Infrastructure X Past X Future

Abstract

Since its inauguration in 1900 during the Japanese colonial period, Tainan Railway Station has ushered the city into a new era through over a century of transformation. The rapid population growth and increasing demand for urban land development have made the undergrounding of the railway inevitable. Tainan Railway Station is a crucial piece of Taiwan’s transportation infrastructure; at the same time, it carries profound historical significance, giving rise to the dual nature of this heritage site: “Infrastructure X Past X Future.” This project focuses on highly efficient infrastructure and the re-presentation of the historical narrative of Tainan Station, integrating the infrastructure with the city’s story through spatial strategies.

As the fifth-largest railway station in Taiwan and located in the heart of Tainan, the station has driven the city’s modern development. Its functional enhancement and future expansion are anticipated, and maintaining high infrastructural efficiency remains the primary design principle. Currently, the surface-level railway divides the city into eastern and western parts, not only hindering traffic flow but also becoming a weakness in urban development. After the undergrounding of the railway, the renewed spaces, materials, and climate conditions will become opportunities for a new Tainan. However, both the current station and many of its proposed redesigns lack substantial responses to these issues.

The Tainan Railway Station heritage building has undergone several phases of renovation, with architectural traces left by different eras. The current plan preserves the historic building during the construction of the new station. Its geographic location bears witness to Tainan’s historical development, and the building itself tells a story parallel to the city’s history. The new underground station will inevitably create interactions between the old and the new. How to humbly yet proactively integrate space, material, experience, and perspective in a way that blends past and future becomes a critical design issue.

I question the current state of Tainan Railway Station, and therefore hold strong opinions and expectations for the future that the new station will bring to the city. Just as each previous generation of stations has shaped Tainan for decades, the new station will have a lasting impact. Hence, every design decision is made with great caution. Drawing from years of observation and understanding of Tainan, this project seeks to envision an ideal future for the city.

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- Urban Transportation Infrastructure Reorganization
- Review of Transportation Connectivity

Urban analysis

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- Research on Monumental Architecture
- Design Principles and Implementation

Principle II - Authoritarian Historical Memory Axis

- Axis of Authoritarian Architecture and Literary Records
- Design Principles and Implementation

Design Elements

- Intuitive Circulation System in Large Underground Spaces
- Design Elements
- Program Area Statistics

Circulation + Experience

- Circulation Review
- Seamless Circulation Experience

Structure + MEP

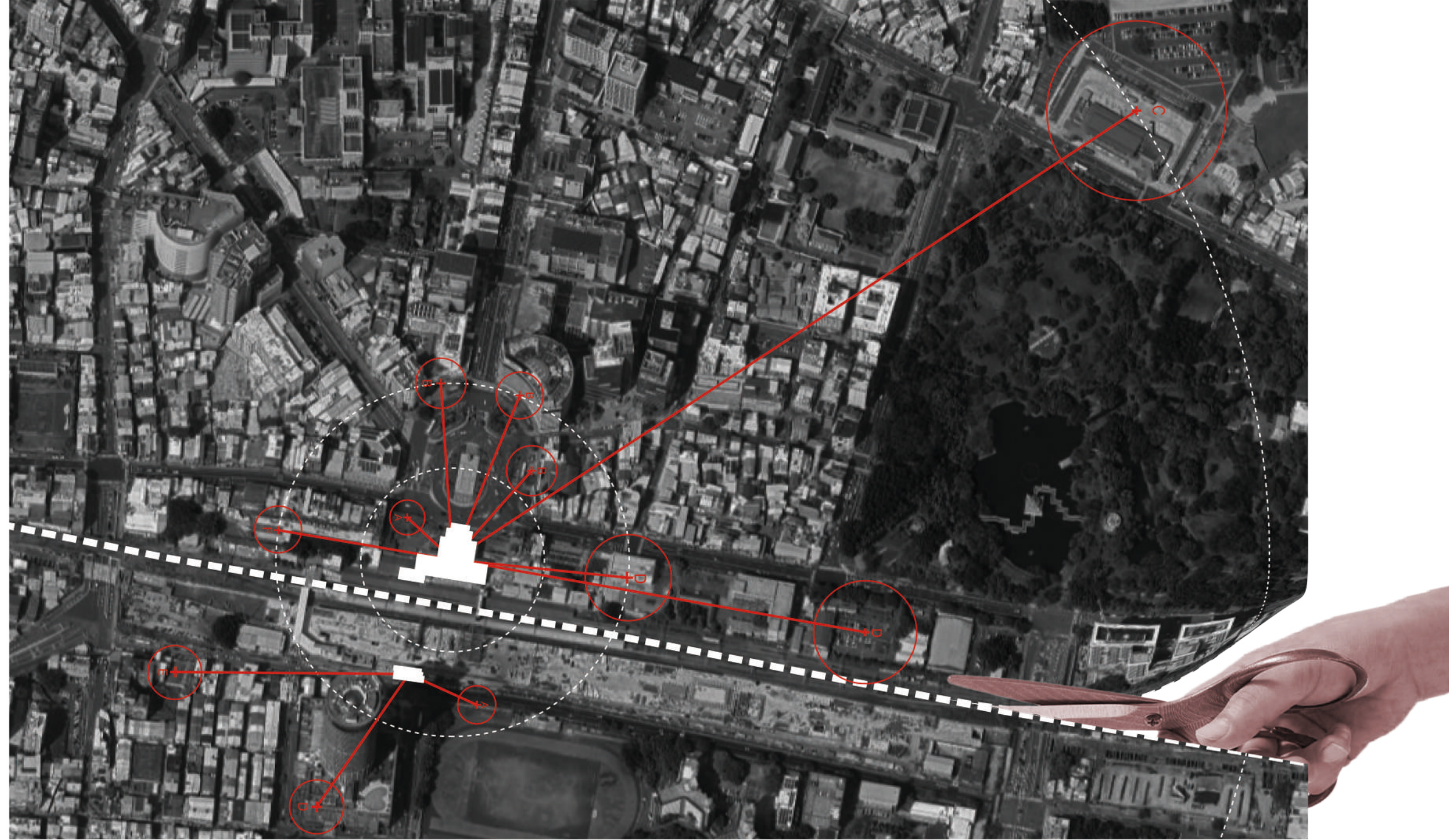
- Structural System
- Construction Details and Simulations
- MEP Planning

Sustainability

- Outdoor Comfort Analysis + CFD Simulation
- High-Rise Massing Research + Optimization

Transportation Connectivity

The Train Station Is More Than Just the Station Itself



Scattered Supporting Transportation Facilities



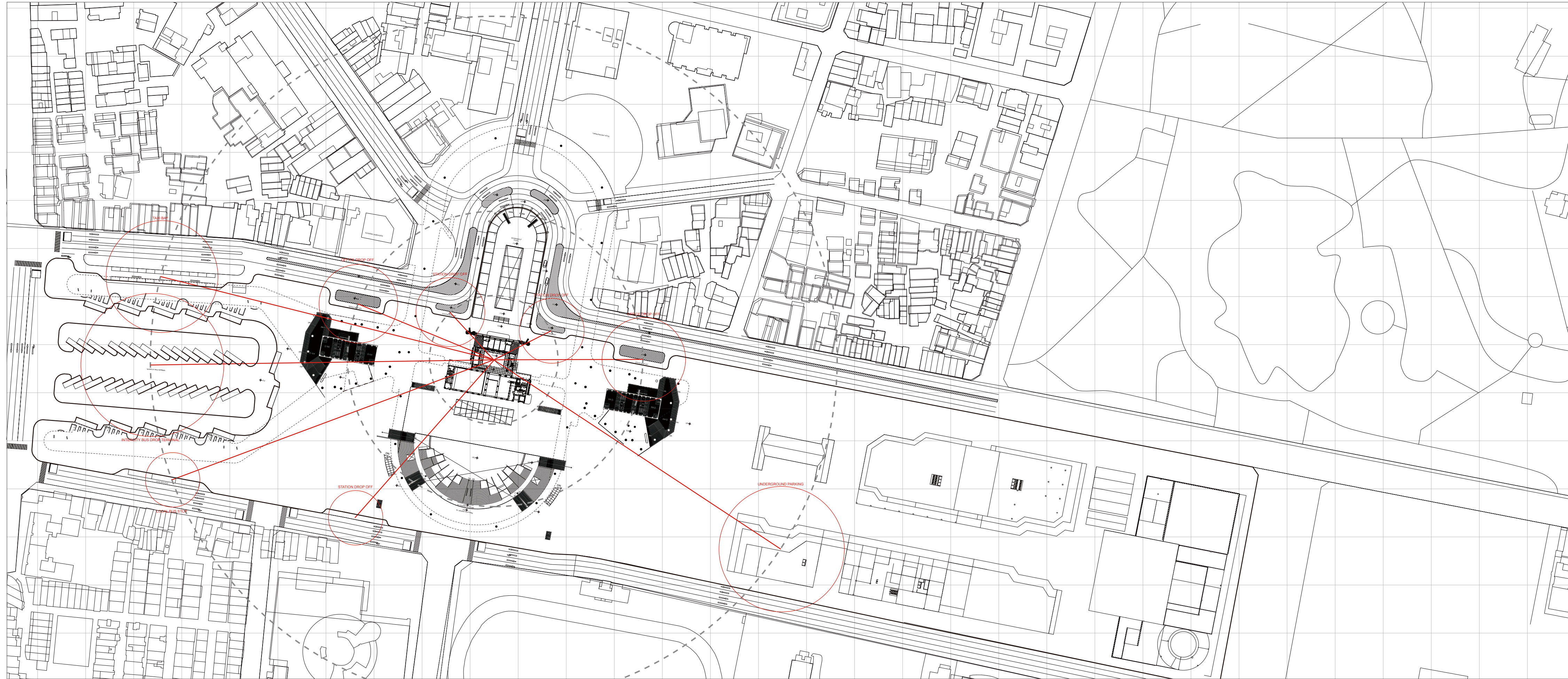
Traffic Divided by Surface Railway

Disconnection of Urban Fabric by Railway Division

The ground-level railway cut off all transportation links between the east and west sides of Tainan. Therefore, the renewal of Tainan Railway Station is not merely about updating the station itself; it calls for a comprehensive reorganization and redesign of all urban transportation systems—from Intercity to local routes—to improve the overall traffic flow in Tainan. “This marks the foundation and beginning of an ideal future for the city”.

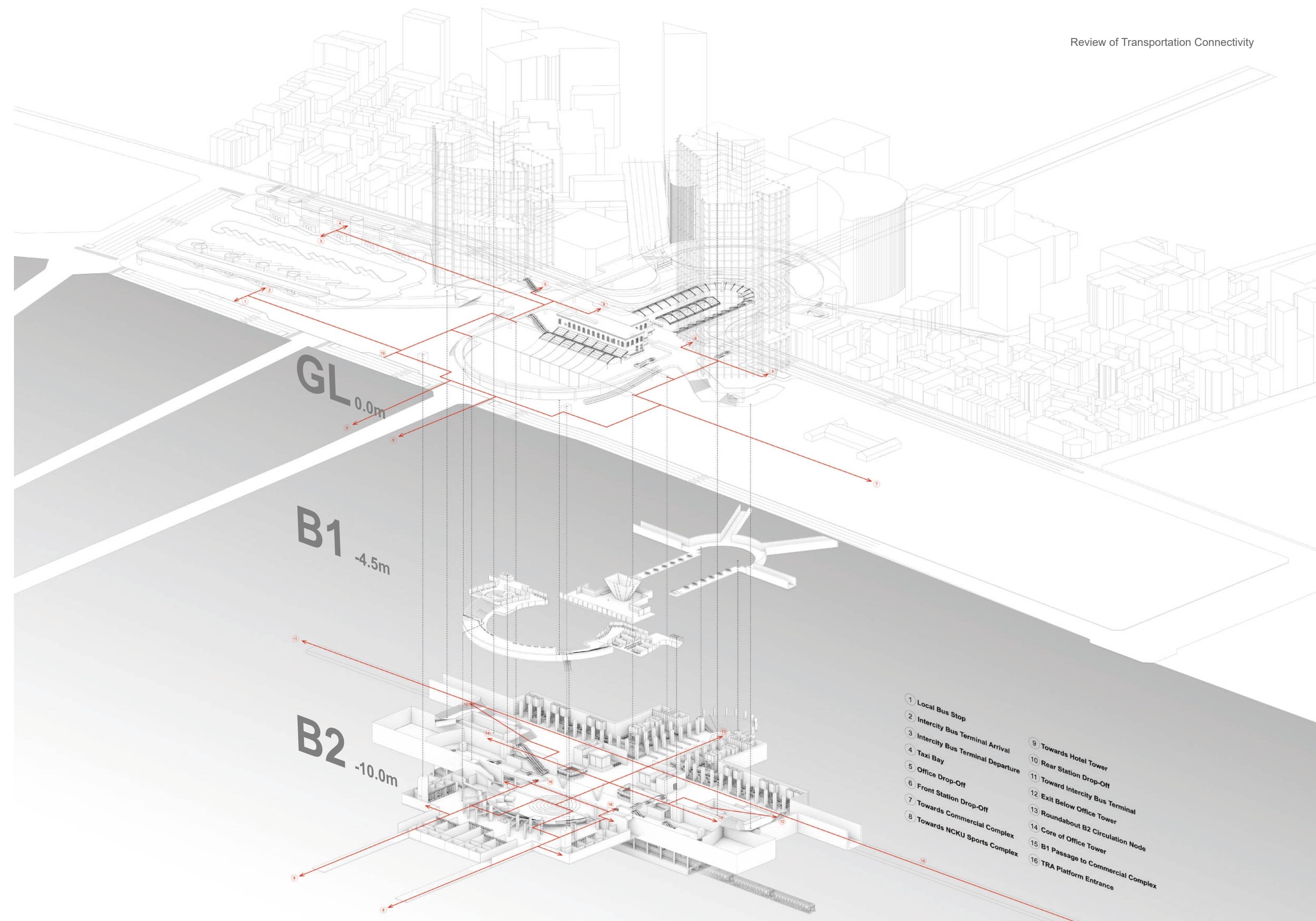
Improvement Strategies Following Train Station Renovation

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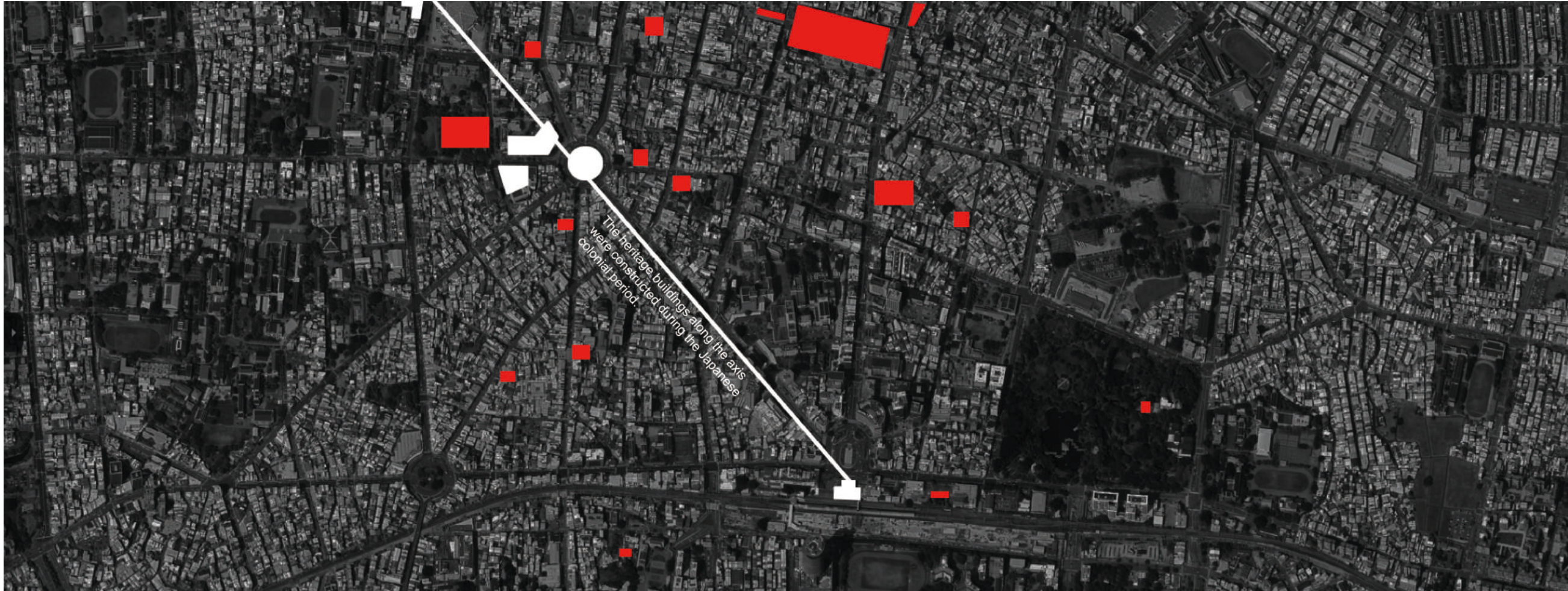


Review of Transportation Connectivity

The ground-level railway cut off all transportation links between the east and west sides of Tainan. Therefore, the renewal of Tainan Railway Station is not merely about updating the station itself; it calls for a comprehensive reorganization and redesign of all urban transportation systems—from Intercity to local routes—to improve the overall traffic flow in Tainan. “This marks the foundation and beginning of an ideal future for the city”.



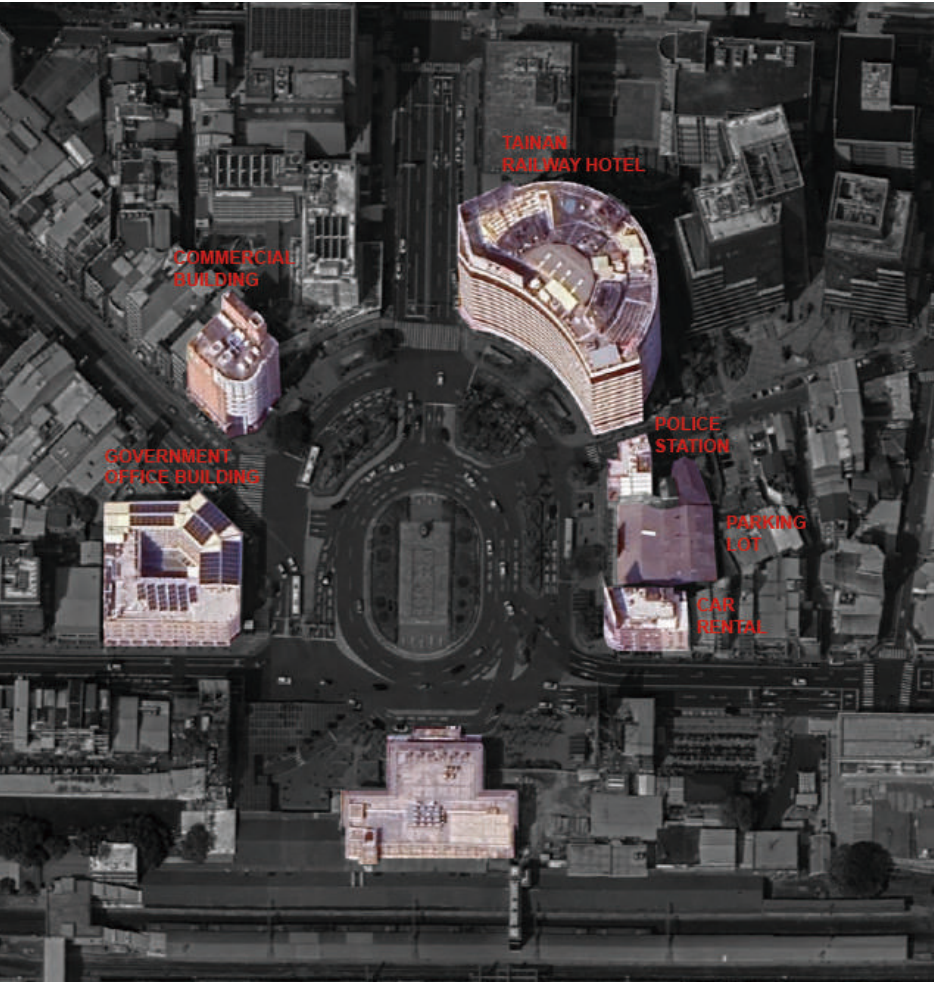
Urban Issues



Distribution of Heritage Buildings in the Urban Context

Heritage Building

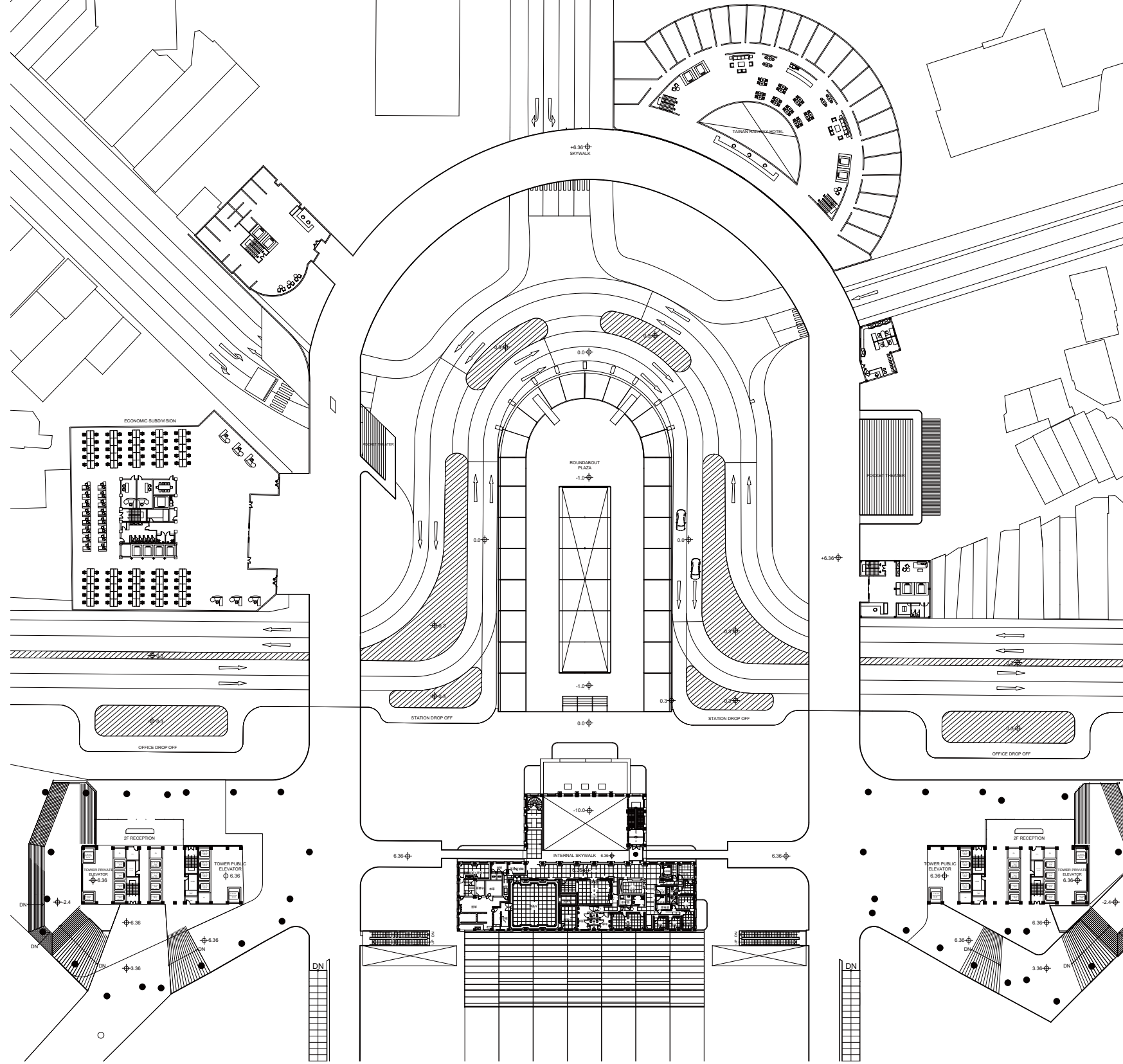
Tainan Railway Station is surrounded by multiple heritage sites, requiring sensitive preservation considerations. On a broader scale, these heritage landmarks form a historically significant axis that the design must respond to.



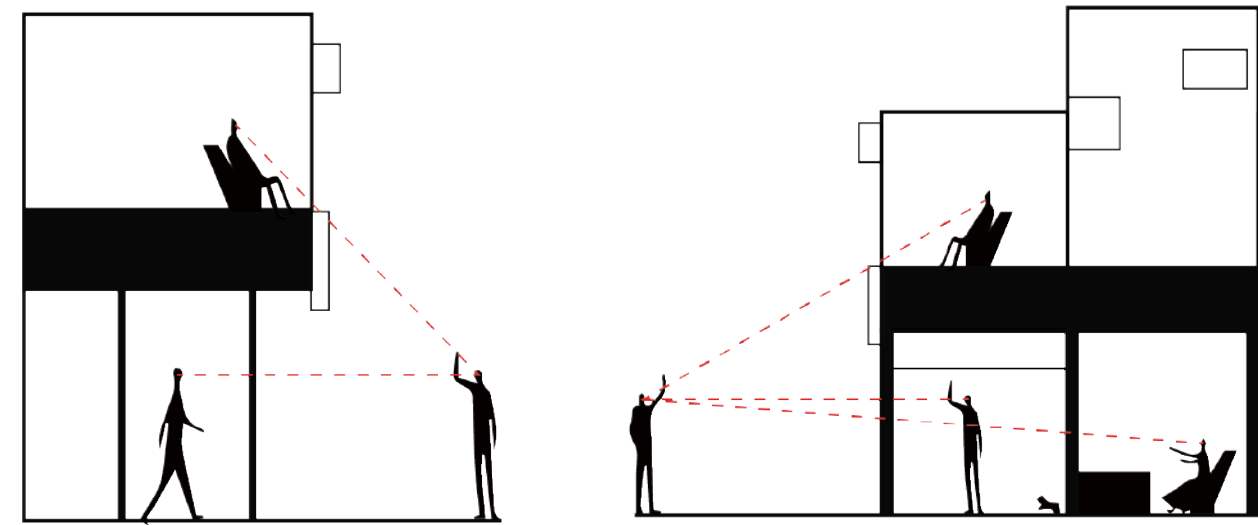
Surrounding Buildings: Existing Conditions

Surrounding Buildings

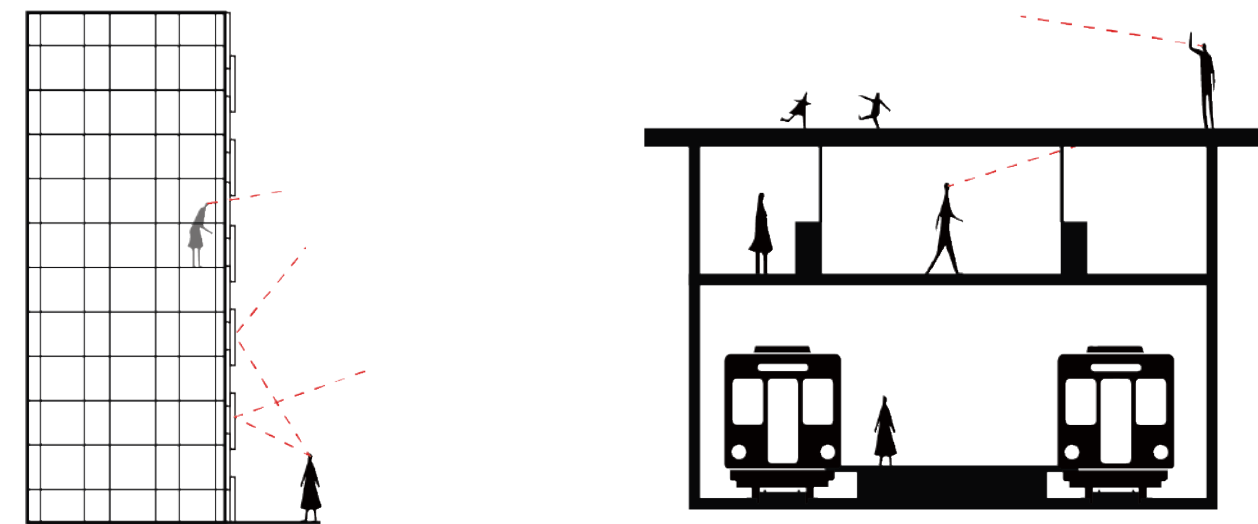
At the same time, development pressure is evident. The station is encircled by densely populated and capital-intensive buildings. According to current plans, much of the land freed by the undergrounding of the railway will be used for high-rise developments—an inevitable trend.



Surrounding Buildings: Proposed Connections



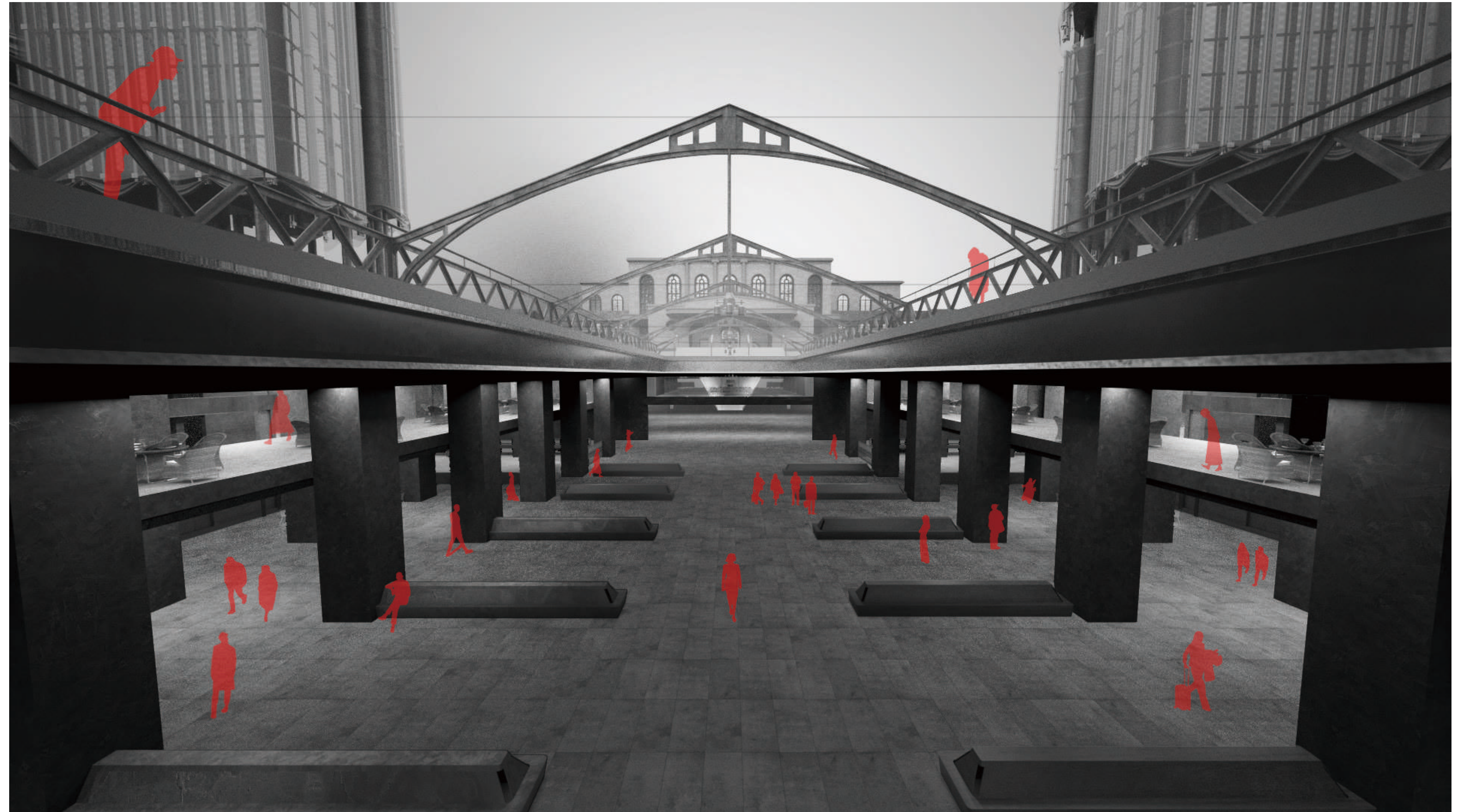
Spatial Relationships in Taiwanese Arcades

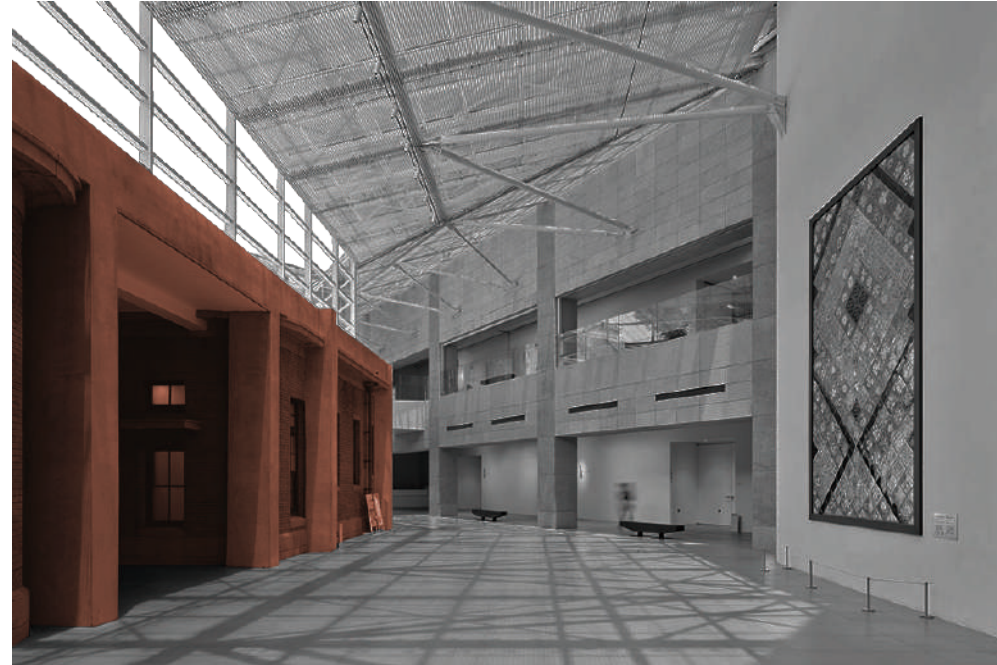


Spatial Relationships in Modern Architecture

Taiwanese Arcade

The arcade is a key element of Tainan's urban fabric. It reflects the city's architectural heritage and fosters close interactions between people and space. This unique feature has guided my design approach. I aim to bring this comfortable and characteristic spatial experience into the new station—Tainan's gateway—so that visitors immediately sense the city's distinctive atmosphere upon arrival.





Tainan Art Museum Building 1
Former Tainan Police Department Headquarters from the Japanese colonial period

Tainan Central and Western District Library
Former Tainan Prefectural Assembly Hall from the Japanese colonial period

Past X Future

As Taiwan's historic capital, Tainan faces ongoing challenges in heritage preservation. Across the city, examples show how the integration of historic and modern architecture can generate new future value. The relationship between the Tainan Railway Station heritage building and the proposed renovation project serves as a model for old-new integration. It also lays a foundational methodology for future heritage preservation efforts in Tainan.

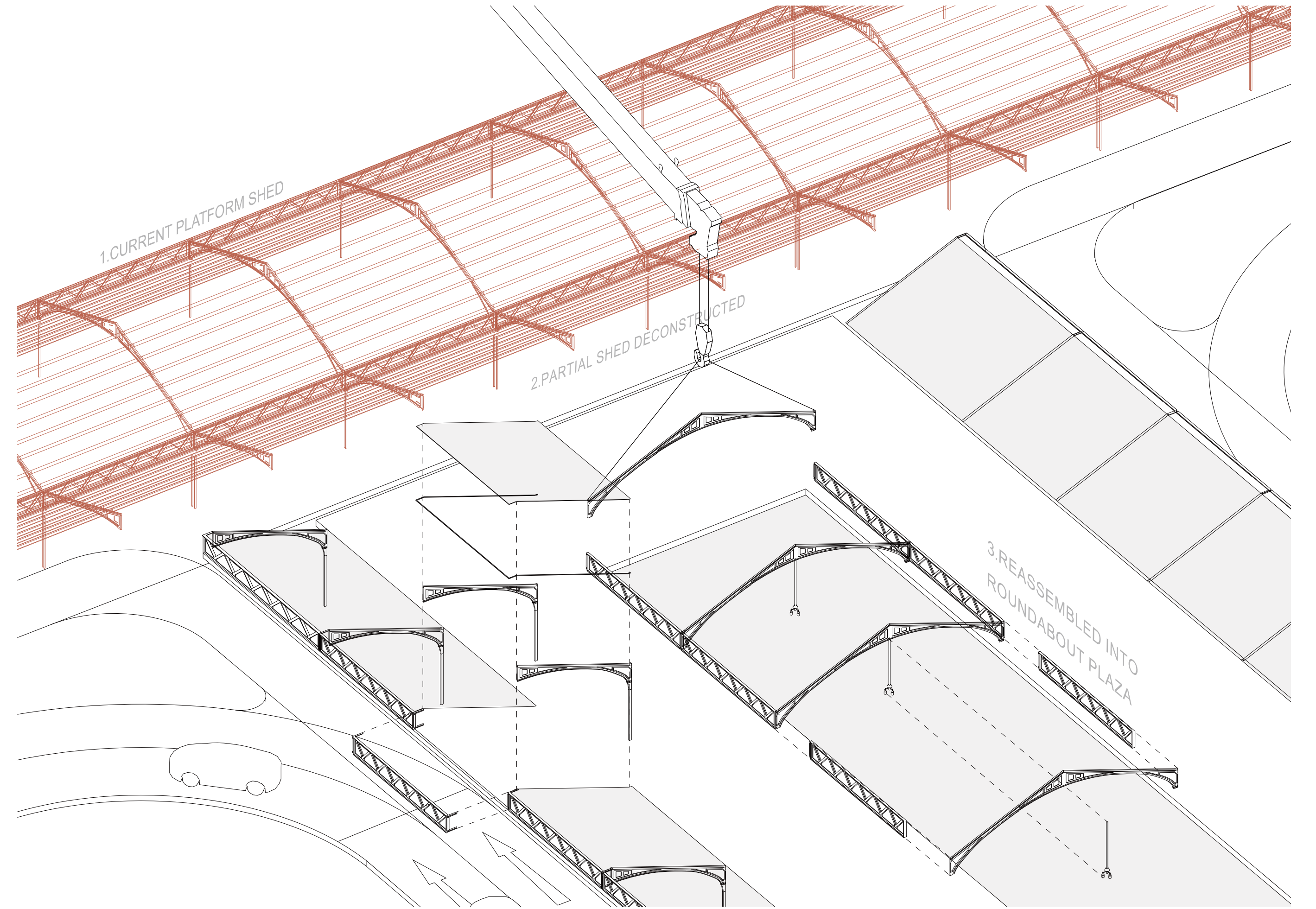




Tainan Station Current Platform Shed



Unofficial Building Extensions in Taiwan



Light Steel Structure and Adaptive Construction

Corrugated metal roofs are often viewed as a flaw of early Taiwanese architecture due to their impermanence and visual impact on the urban landscape. However, their true essence lies beneath the surface—in the lightweight steel structures that support them. Tainan’s climate, environment, and culture have never been suited to rigid international architectural styles. Early residents adapted sensitively to climatic conditions using light steel frameworks, a logic also visible in the platform sheds of Tainan Railway Station.

Principle I – Monumental Axis

"Historical building preservation is not only about preserving the building itself but also about honestly addressing the original intent behind its creation."

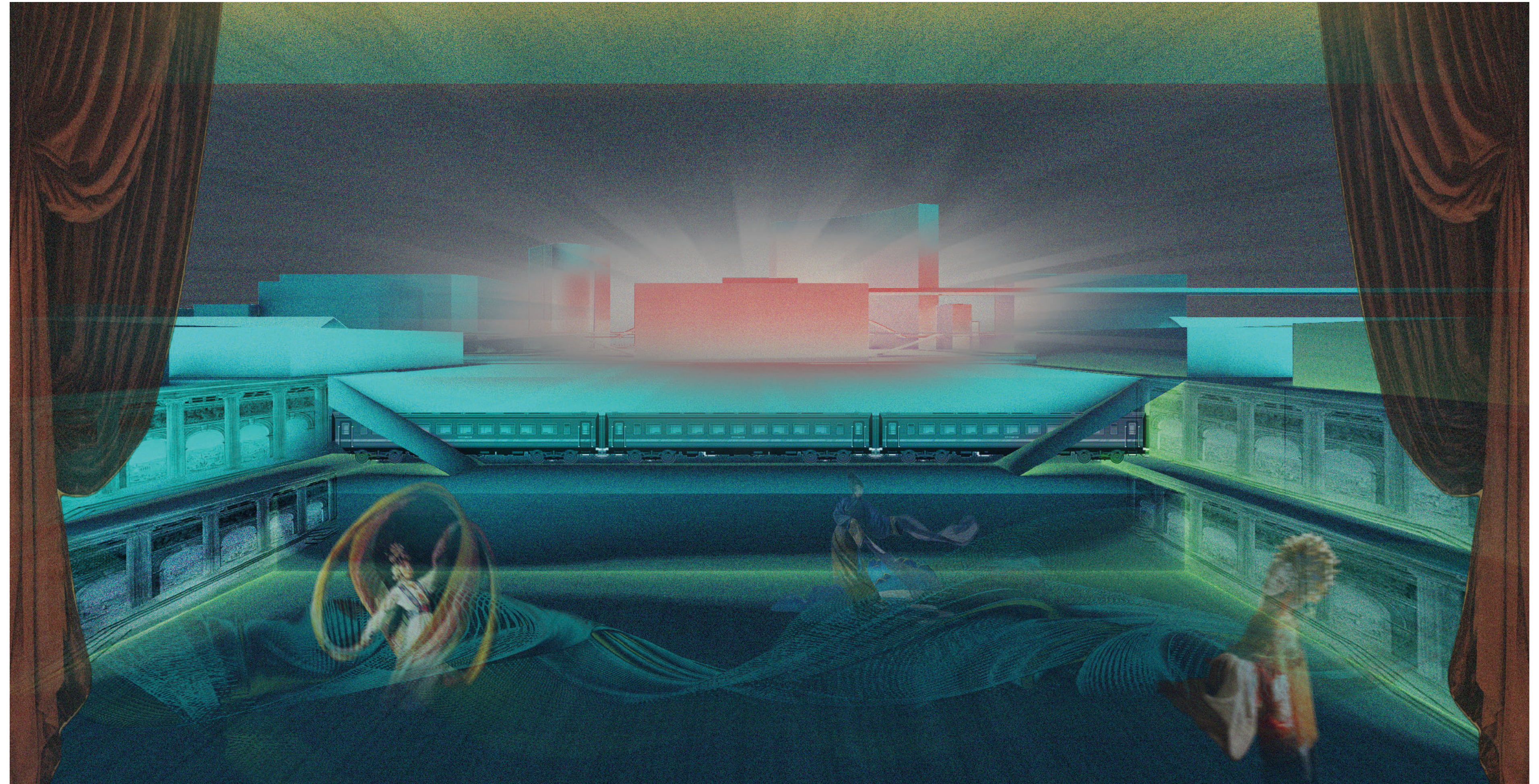
When Japanese architects designed the Tainan Railway Station during the Japanese colonial period, they embedded strong monumental intentions in its architecture. The station was meant to be the symbolic gateway to Tainan—ceremonial gates were erected in front of it during major celebrations, imperial visits, and send-offs, making it a true architectural monument of its time.

Almost every station renovation faces the same challenge: heritage preservation. Many architects attempt to strip these monuments of their original symbolic intentions in pursuit of a purely "modern" expression. Yet, whether in renderings or built reality, the commemorative essence remains—and often becomes even more pronounced. Monumentality, once rooted in a site, is resistant to erasure. Tainan Railway Station is no exception. Thus, preserving a heritage building means not only maintaining its physical structure but also honoring its original architectural intent.

In addressing monumentality, I studied the site plans of iconic monumental buildings worldwide and identified a common typology: a long axis culminating in a symbolic structure, flanked by buildings of significant function, with a central plaza where civic and cultural events unfold. Tiananmen Square in front of the Forbidden City, though different in ideology, reflects this spatial logic, as does the unbuilt but conceptually similar Volkshalle. The Chiang Kai-shek Memorial Hall in Taipei is a closer reference—at the axis's end stands the memorial; to its sides, the National Theater and Concert Hall; between them lies Liberty Square, a stage for historic protests, public movements, and art.

This is the vision for Tainan. At the end of a monumental axis stands the heritage station. Functional buildings line both sides, and the central open space—named the "City Stage"—is envisioned as a new site for history-making and artistic expression in Tainan.

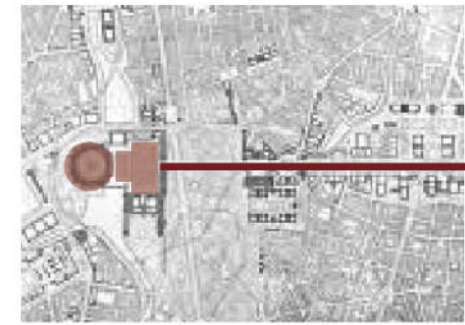
Architecturally, the area behind the station becomes a sunken plaza—the City Stage—while skywalks connect previously fragmented urban zones, re-stitching a city once divided by the traffic circle and railway. Functional station programs and high-rises are arranged symmetrically along the axis, acknowledging inevitable development demands. Yet, to ensure these towers do not compromise the openness or spatial quality of the design, I employ optimization tools to refine the form and address sustainability challenges.



The Commonality of Monument

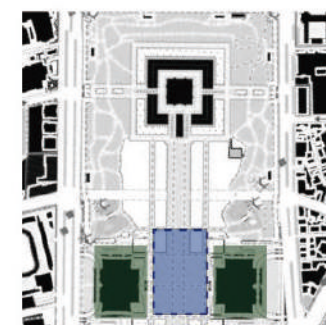
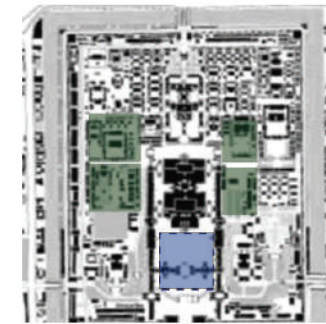
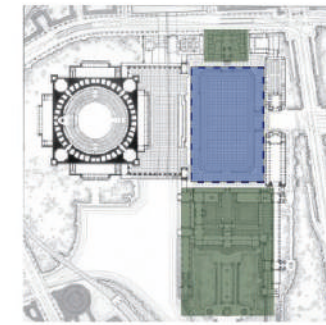
Monumental Axis

In the city, monumental axes often culminate in the most significant commemorative buildings.



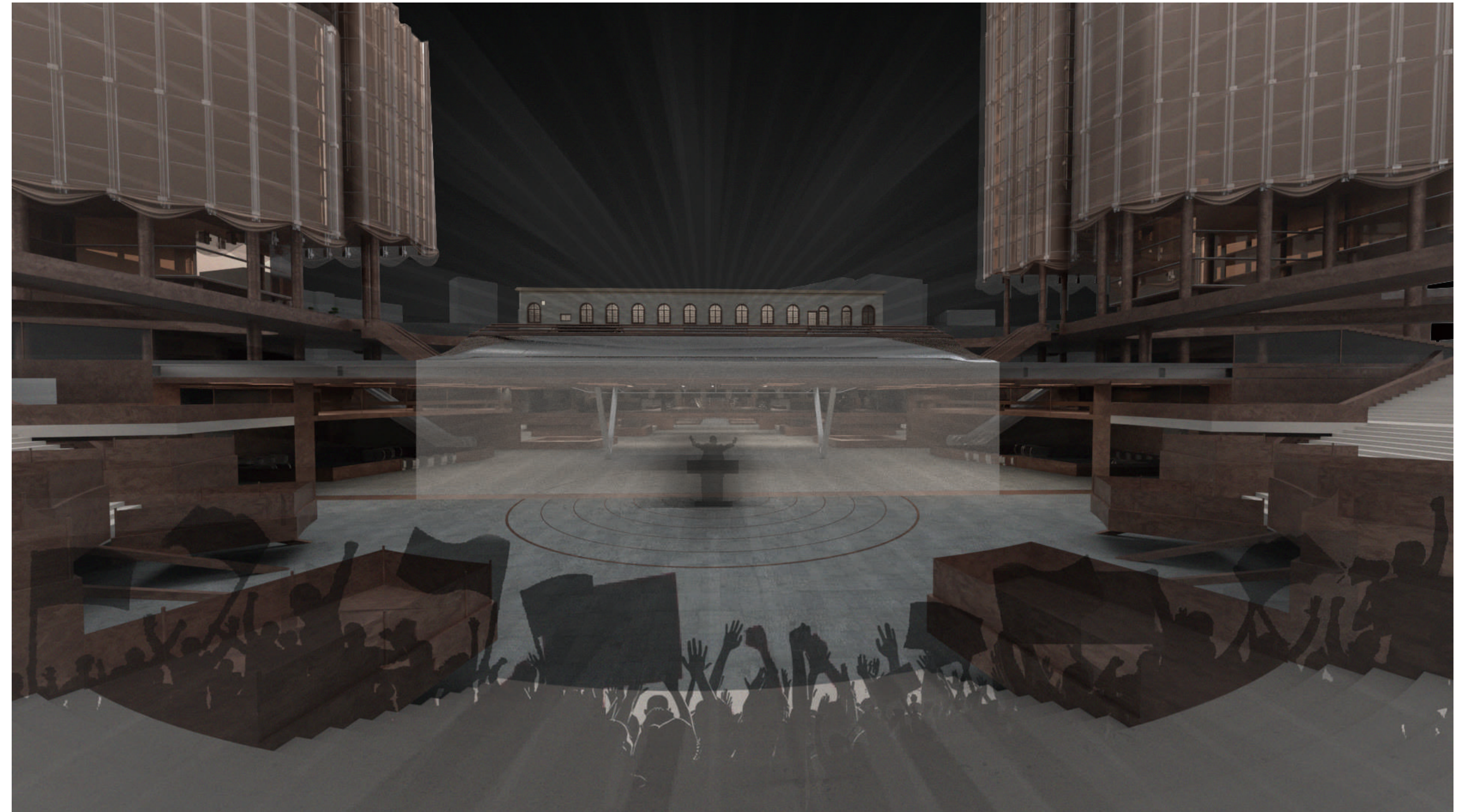
A Stage Framed by Institutions

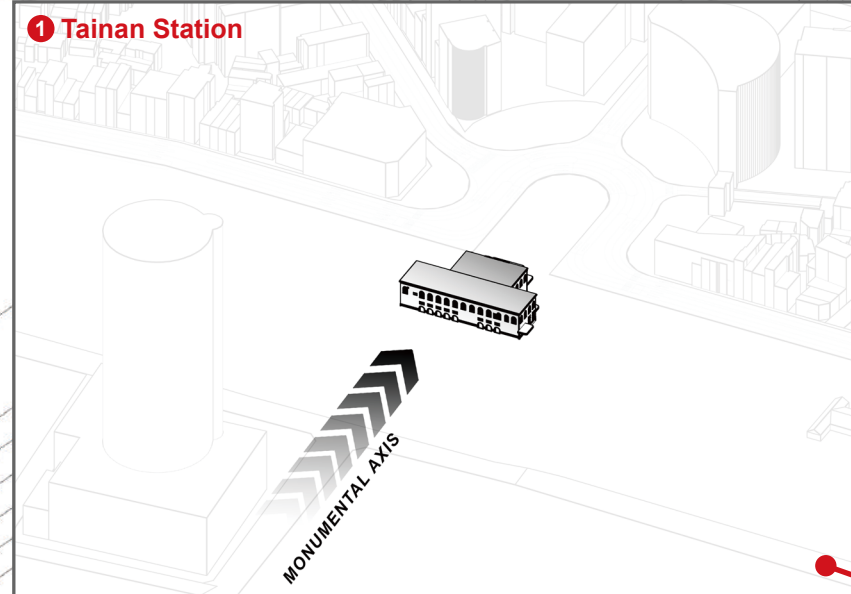
On either side of the grand axis are often major national institutions or cultural facilities, together with the commemorative building at the end, they define a central plaza.



Monumental Axis

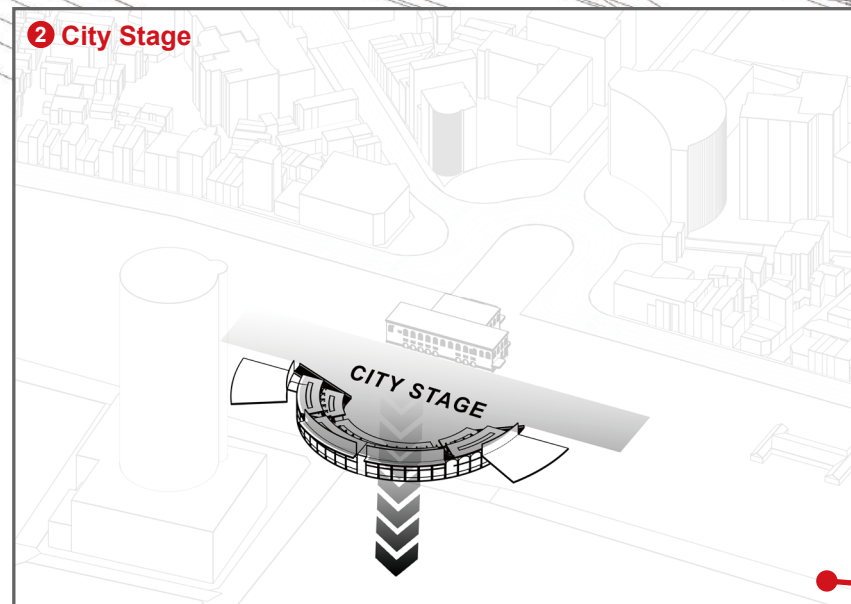
The central plaza I call it the City Stage, frequently serves as the stage for pivotal events—art, protests, and movements that redefine the city's or even the nation's trajectory





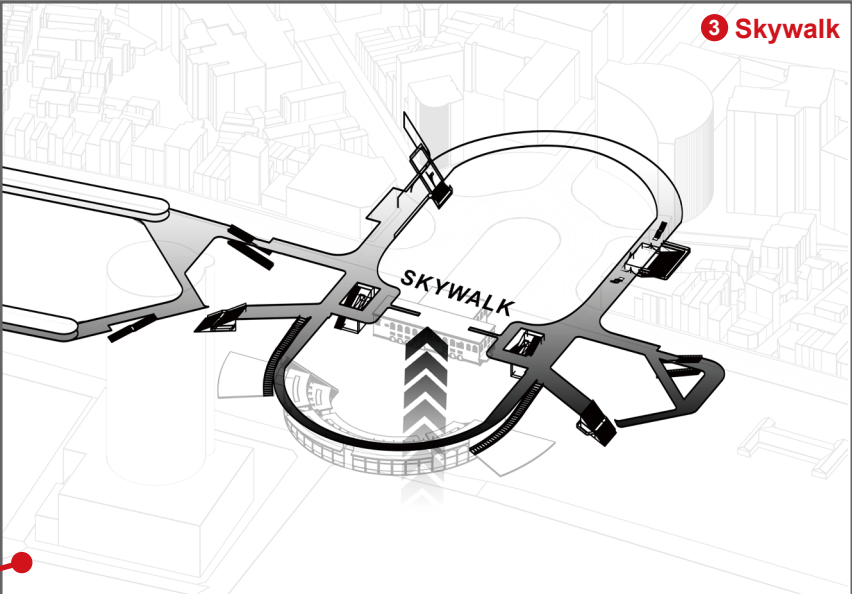
1 Tainan Station

The Tainan Station, designed by architect Takeo Ujiki during the Japanese colonial period, served as an important gateway to Tainan. The architectural intent emphasized high ceremonial significance, as major welcoming and farewell events were held in front of the station. During significant festivals or visits by members of the Japanese imperial family, a ceremonial gate would be erected in front of the station to mark the occasion with grandeur.



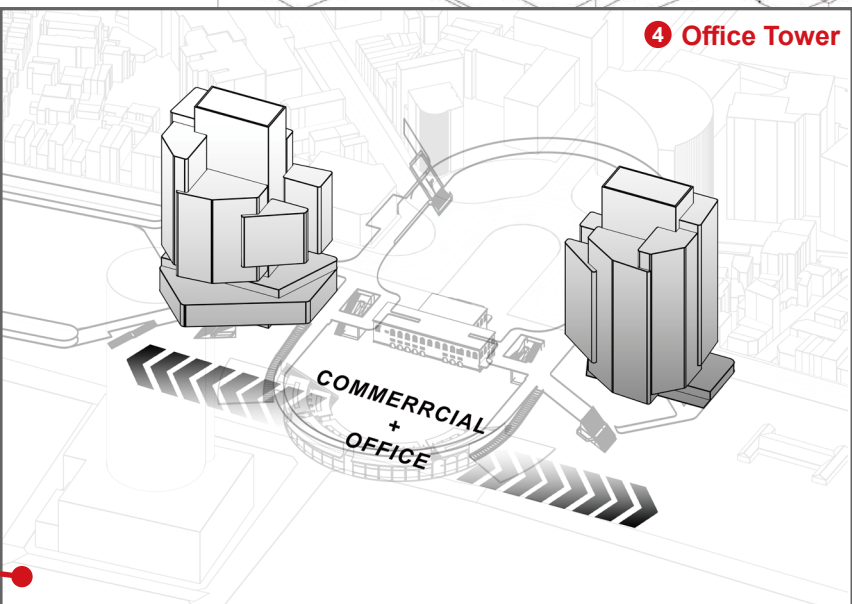
2 City Stage

Daxue Road, the central axis pointing to Tainan Railway Station, establishes key elements of the City Stage. The former platform space is sunken, transforming into a multifunctional area combining a theater, grandstand, retail zones, skywalk, and the plaza behind the station.



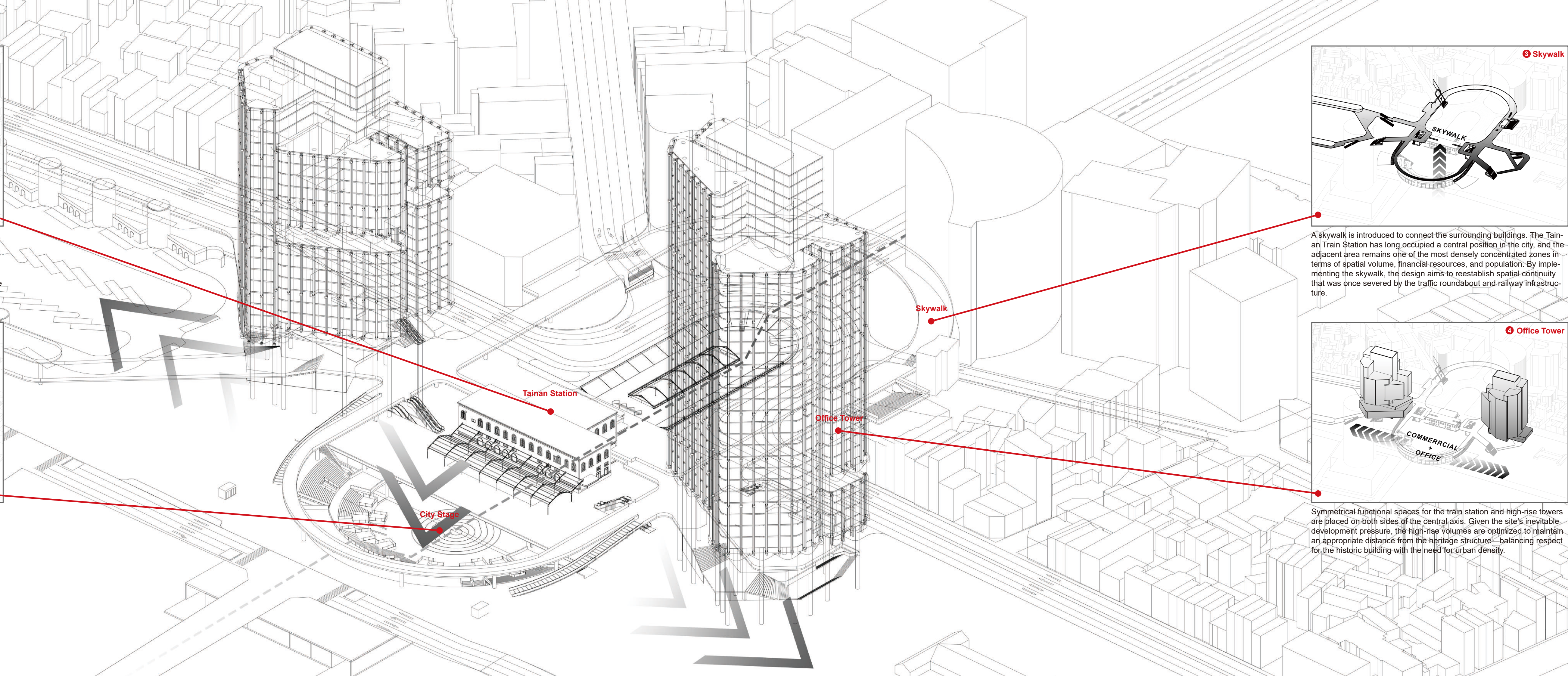
3 Skywalk

A skywalk is introduced to connect the surrounding buildings. The Tainan Train Station has long occupied a central position in the city, and the adjacent area remains one of the most densely concentrated zones in terms of spatial volume, financial resources, and population. By implementing the skywalk, the design aims to reestablish spatial continuity that was once severed by the traffic roundabout and railway infrastructure.



4 Office Tower

Symmetrical functional spaces for the train station and high-rise towers are placed on both sides of the central axis. Given the site's inevitable development pressure, the high-rise volumes are optimized to maintain an appropriate distance from the heritage structure—balancing respect for the historic building with the need for urban density.



Principle II - Authoritarian History Axis

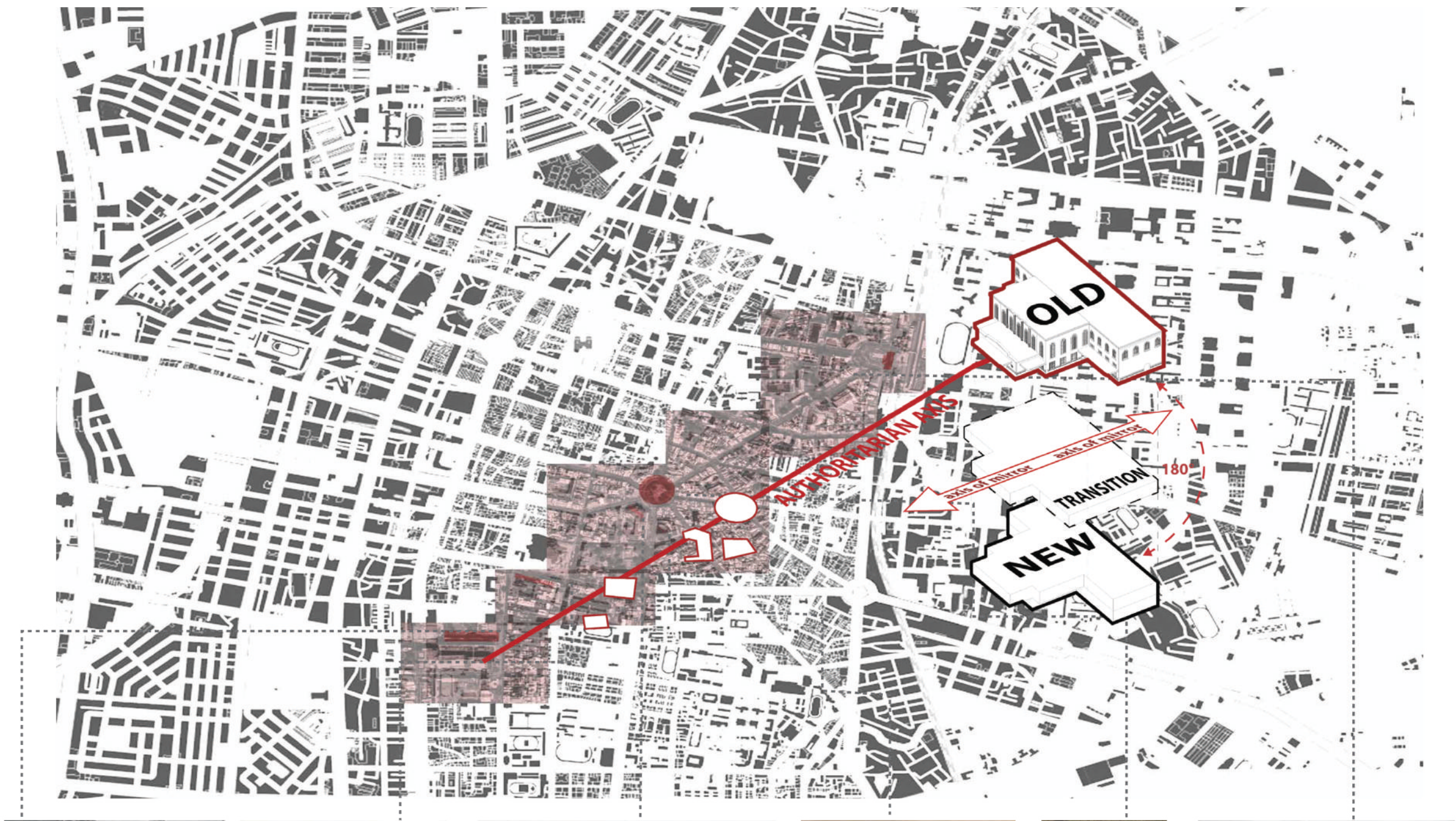
"Only through such honest, unflinching observation can these stories be remembered, reconciled, and transcended."

While studying the urban fabric surrounding the site, a critical phenomenon emerged: many of Tainan's authoritarian-era buildings are aligned along a straight road southwest of the traffic circle in front of Tainan Station. For example, the Tainan Literature Museum was once the Tainan Prefectural Government Office, the current Shin Kong Mitsukoshi department store was formerly the Tainan Prison, the Tainan Art Museum was the former police headquarters, and the Tang De Zhang Memorial Park was previously the Taisho Park. These buildings—all remnants of the authoritarian era—are situated along this same axis without exception.

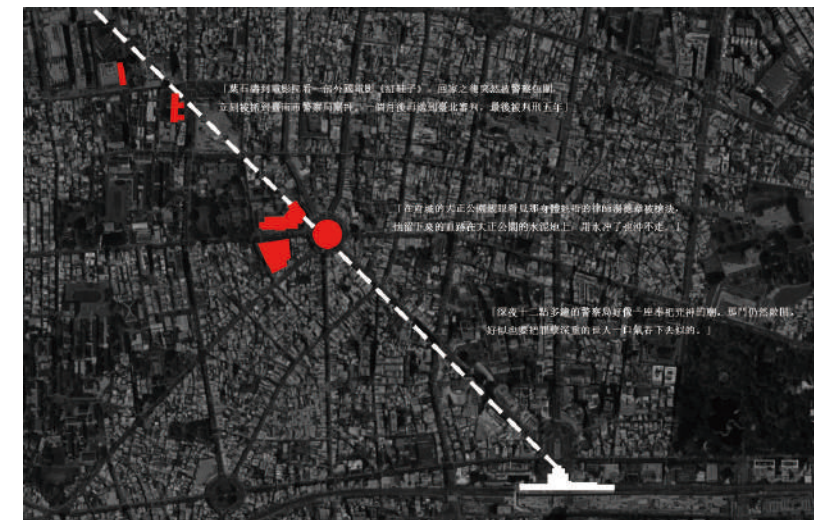
Notably, Tainan writer Yeh Shih-tao, known for his chronicling of everyday people under authoritarian rule, has left detailed accounts of events tied to these locations. "At Taisho Park in the city center, I saw with my own eyes the execution of the burly lawyer Tang De Zhang. The blood he left on the cement ground couldn't be washed away, no matter how much water was poured." This street continues to bear the weight of such memories—it is an axis of authoritarian history, and at its end stands Tainan Station.

We regard the station, therefore, as the endpoint of this axis—symbolically, the end of authoritarian history. The oppressive legacies and stories of that era converge here to be recorded, commemorated, and confronted. In response, an exhibition space is placed beneath the heritage station at the B1 level. This space mirrors the layout of the station's first floor above. The upper level—the historic station—represents the "old history," while the mirrored lower level commemorates the memories of authoritarian rule. This mirroring creates a spatial dialogue between past and present, between heritage and reflection, reminding us that only through honest confrontation with history can we move forward.

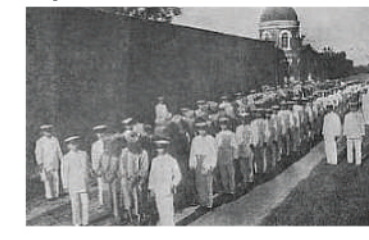
Furthermore, the design of all elements emphasizes visibility—allowing the heritage building to be viewed from multiple angles with no blind spots. This 360-degree approach symbolizes the transparent and multifaceted examination of authoritarian history. Only through such honest, unflinching observation can these stories be remembered, reconciled, and transcended.



Yeh Shih-tao's writings provide detailed records of the authoritarian history connected to Tainan's authoritarian-era architecture.



Yeh Shih-tao's writings capture the oppressive atmosphere along the axis of authoritarian-era architecture in Tainan, reflecting the tension and fear embedded in these historic spaces.



Current Shin Kong Mitsukoshi:
Tainan Prison during the Japanese colonial period



Tainan Judicial Museum:
Tainan District Court during the Japanese colonial period



Tainan Literature Museum:
Tainan Prefectural Office and Air Force Supply Command during the Japanese colonial period

Until the city government relocated in 1997, this building had long symbolized state authority. In 2022, the Tainan City Government also announced a change of the museum's address from "No. 1, Zhongzheng Road" to "No. 1, Tang De Zhang Boulevard," gradually shedding the remnants of the authoritarian era.



Tainan Art Museum Building 1:
Tainan Police Department during the Japanese colonial period

In *The Red Shoes*, writer Yeh Shih-tao described being abruptly arrested after watching a foreign film. Late at night, a red jeep rushed him to the police station near Taisho Park. The station, ominous and open, seemed ready to swallow him whole. Yeh was detained at the Tainan Police Department, then transferred to Taipei for trial. He was sentenced to five years in prison and released early in September 1954.



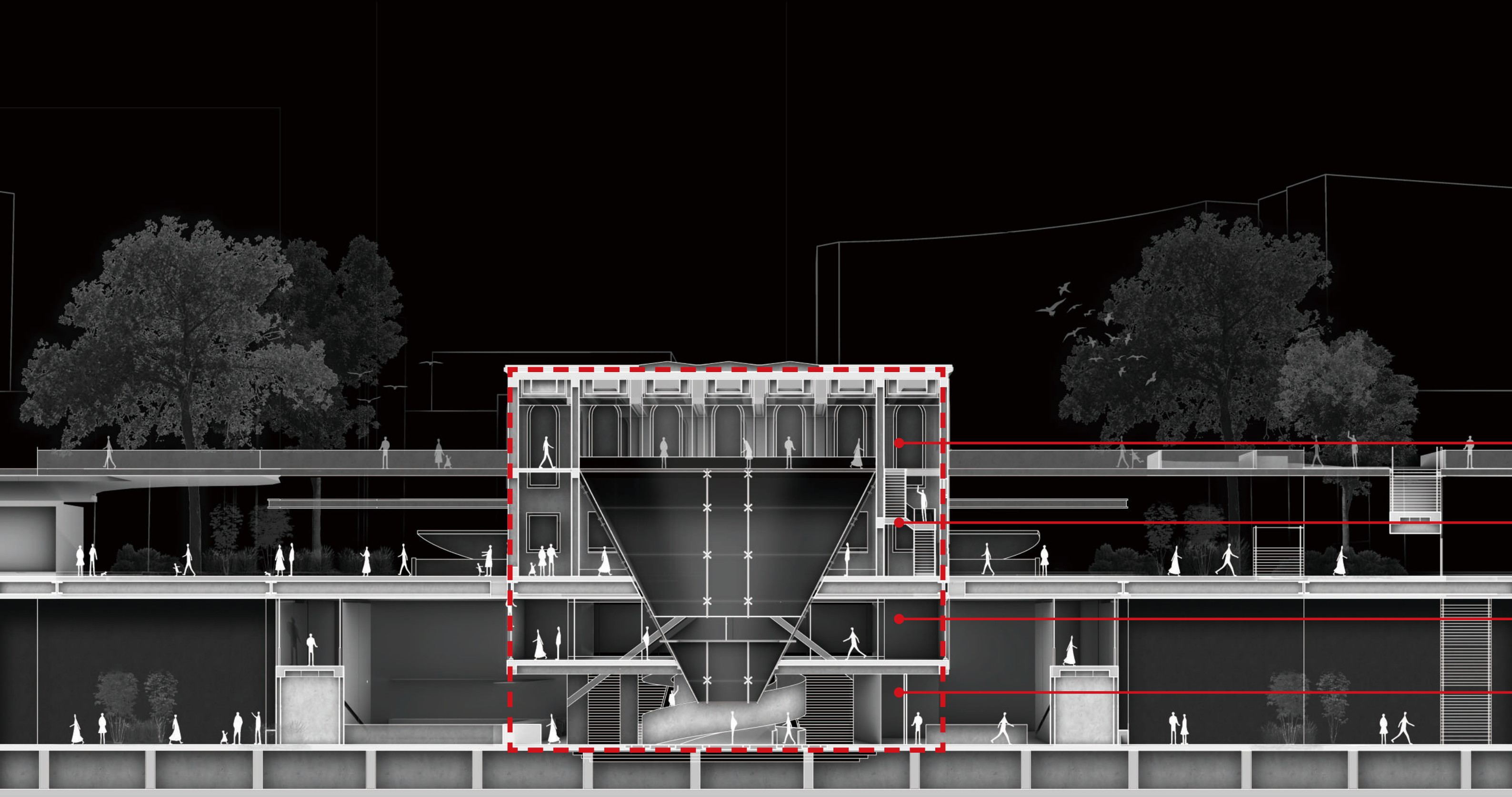
Tang Te-chang Memorial Park:
Taisho Park during the Japanese colonial period

After arriving in Keelung, the military reportedly opened fire indiscriminately, killing many civilians. A province-wide crackdown followed. Though many executions remain unconfirmed, writer Chien Ah-tao witnessed lawyer Tang Te-chang being executed in Taisho Park. The bloodstain on the concrete remained, unable to be washed away.



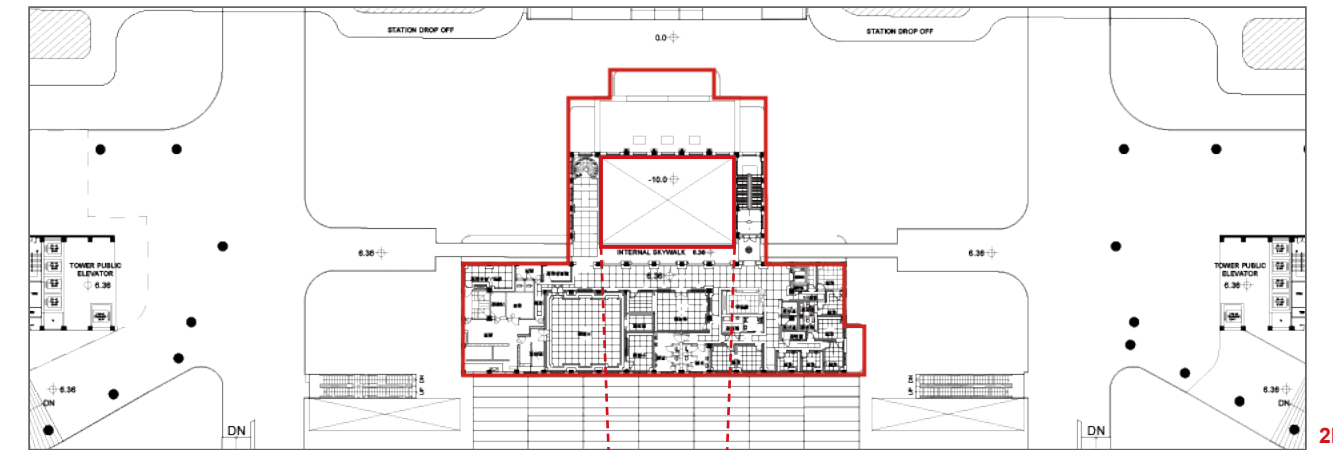
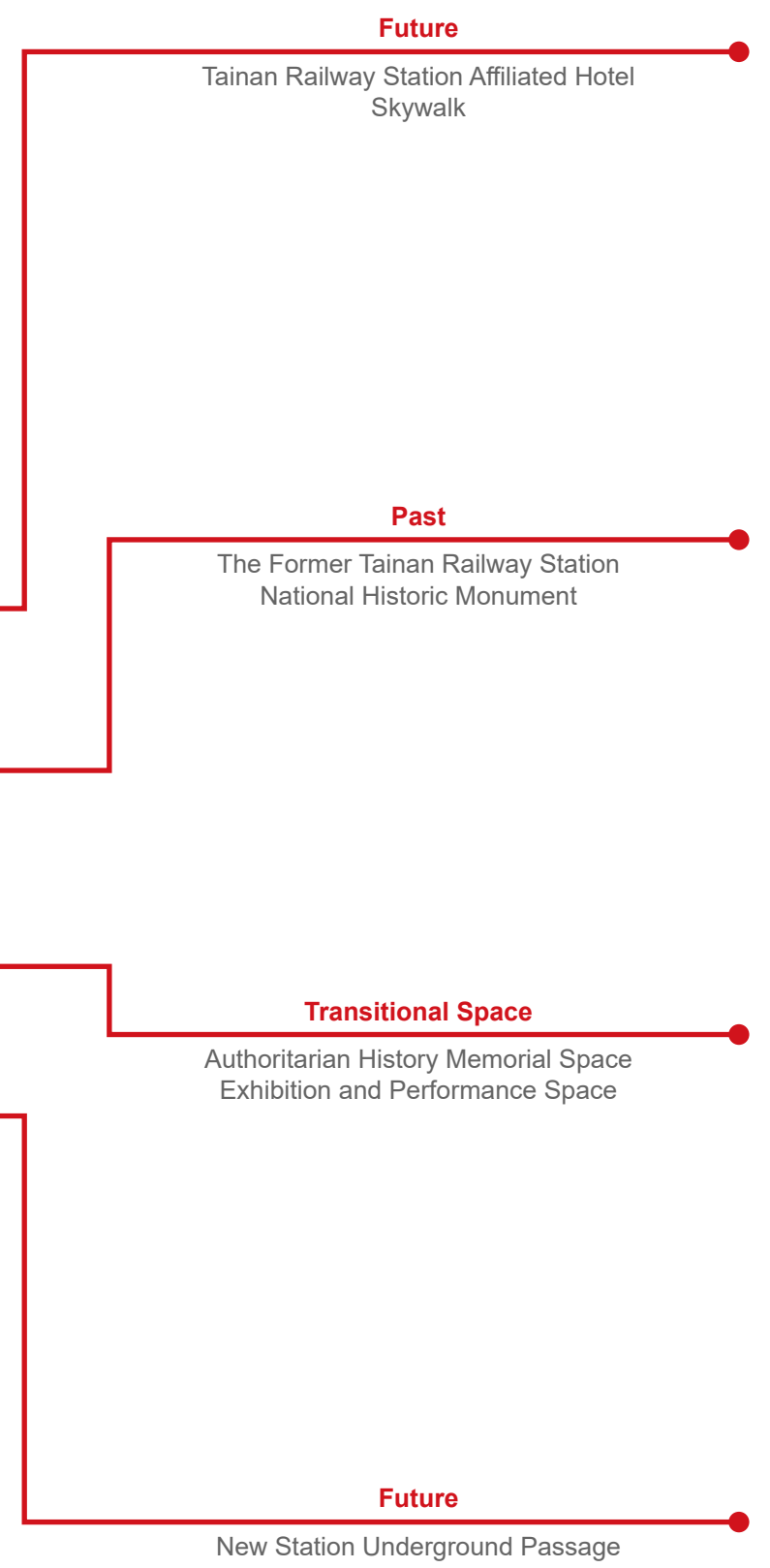
Tainan Train Station:
Built during the Japanese colonial period

Completed in 1900, Tainan Station served as a major gateway connecting southern Taiwan to the north. Its Baroque-style architecture reflected Japan's efforts to modernize the island's infrastructure. Over time, it became not only a transportation hub but also a symbolic landmark of Tainan's urban development.



Where the Past is Uncovered and the Future Begins

Only when the authoritarian past is confronted with honesty and viewed from all angles — across spaces, perspectives, generations, ethnicities, and ages — can it truly be acknowledged and concluded. As the endpoint of the authoritarian memory axis, the train station becomes a place where this history is unveiled and preserved — a threshold between Tainan's past and its renewed future. "It is only by facing this history fully and transparently that Tainan can close this chapter and move forward into a better, more inclusive future."

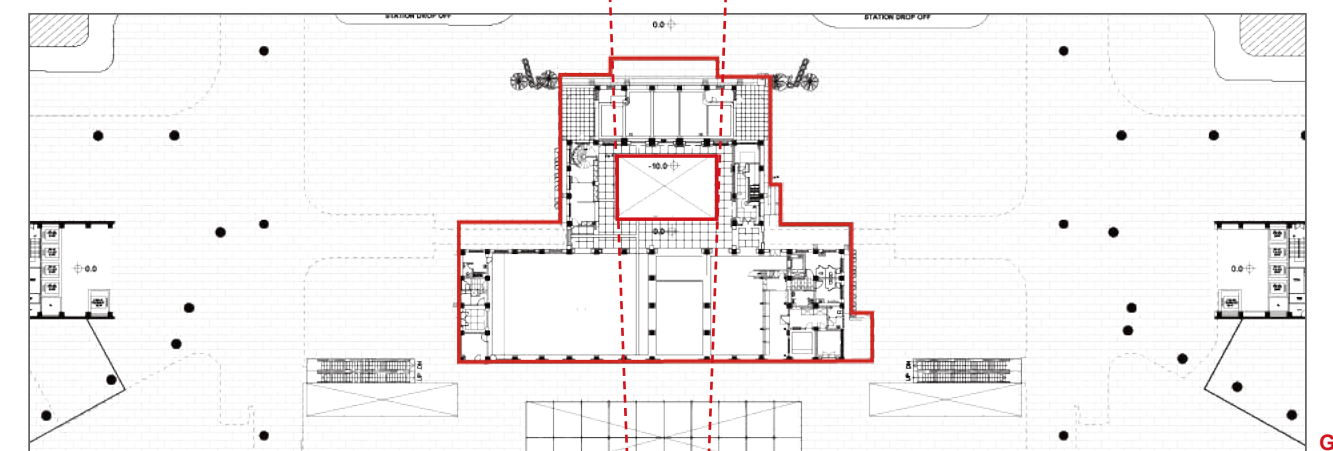


2F PLAN

At a height of 6.36 meters, the skywalk penetrates the historic facade of the Tainan Train Station, entering through the original window openings on the second floor.

Inside, it connects to what was once Taiwan's only hotel located within a train station. After years of renovation, this space is set to reopen as a restaurant and exhibition venue. Meanwhile, a void has been inserted into the GL main waiting hall of the old station, providing direct access to the new underground train station—seamlessly linking historical and contemporary spaces.

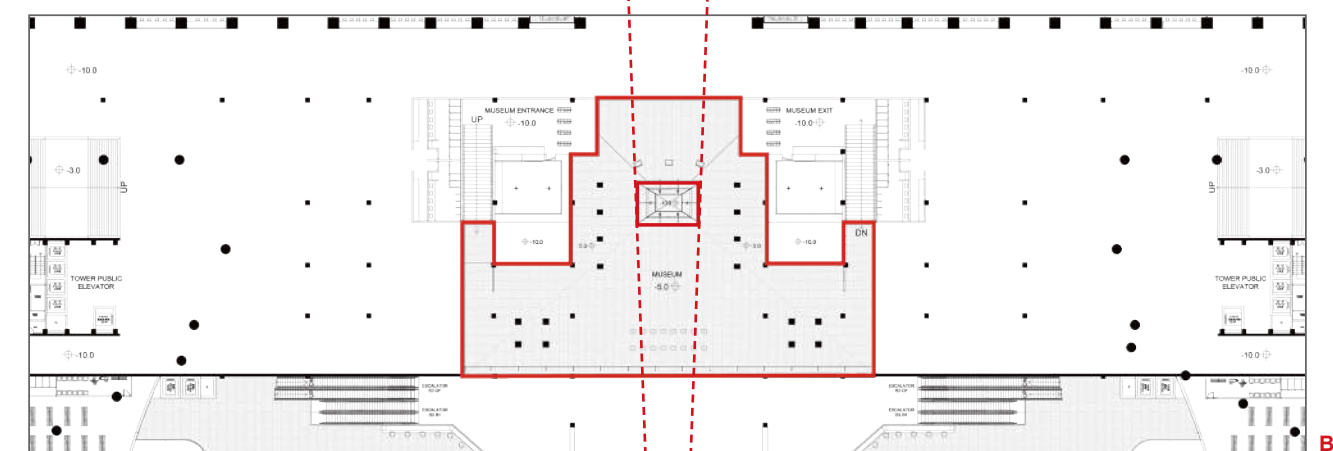
The second floor becomes the starting point for new functions, circulation, views, and experiences—symbolizing the **future** of the Tainan Train Station.



GF PLAN

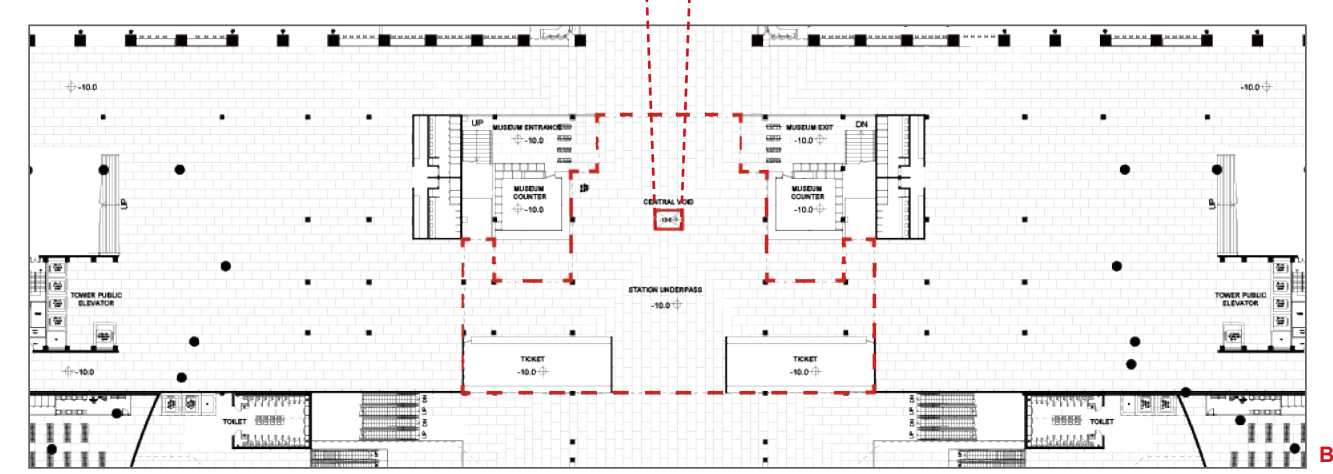
The ground floor of the former train station, once serving as the main entrance and waiting hall, has undergone a transformation in function with the establishment of the new station. It no longer operates as a hub of activity, but instead stands as a symbolic space of collective memory, with the **past** anchored in the presence of the former train station itself.

A large void has been inserted into the center of the old waiting hall, clearly redefining this level's spatial and emotional significance.



B1 PLAN

The old train station, as the endpoint of the authoritarian history axis, utilizes its historic building foundations on B1 to create an intermediate mezzanine space dedicated to commemorating authoritarian history. This exhibition space represents a **transition** between past and present—only by remembering this history can Tainan's future truly begin here.

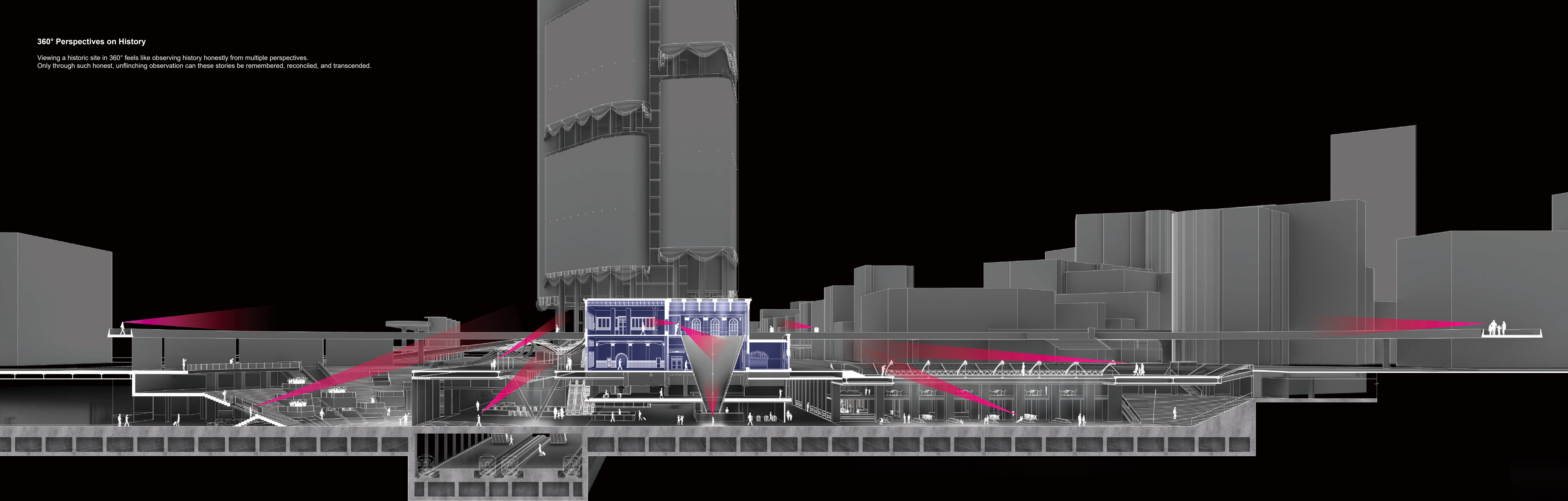


B2 PLAN

B2 is the main level of the new Tainan Train Station, built on a foundation of high-efficiency infrastructure and layered with experiences and memories spanning multiple eras and histories. The Tainan Train Station here leads the city toward a **better future**.

360° Perspectives on History

Viewing a historic site in 360° feels like observing history honestly from multiple perspectives.
Only through such honest, unflinching observation can these stories be remembered, reconciled, and transcended.



Voids

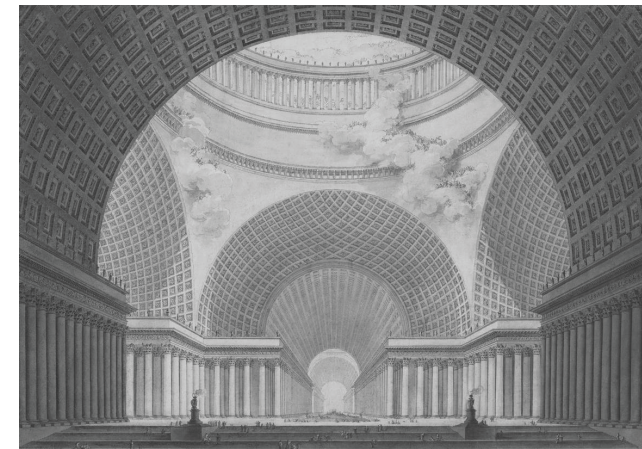
Intuitive Circulation × Sunlight Penetration × Overlapping Eras

While studying the urban fabric surrounding the site, a critical phenomenon emerged: many of Tainan's authoritarian-era buildings are aligned along a straight road southwest of the traffic circle in front of Tainan Station. For example, the Tainan Literature Museum was once the Tainan Prefectural Government Office, the current Shin Kong Mitsukoshi department store was formerly the Tainan Prison, the Tainan Art Museum was the former police headquarters, and the Tang De Zhang Memorial Park was previously the Taisho Park. These buildings—all remnants of the authoritarian era—are situated along this same axis without exception.

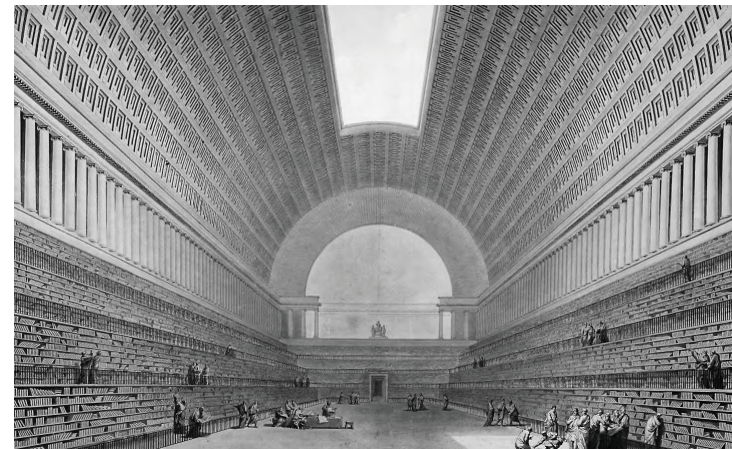
Notably, Tainan writer Yeh Shih-tao, known for his chronicling of everyday people under authoritarian rule, has left detailed accounts of events tied to these locations. "At Taisho Park in the city center, I saw with my own eyes the execution of the burly lawyer Tang De Zhang. The blood he left on the cement ground couldn't be washed away, no matter how much water was poured." This street continues to bear the weight of such memories—it is an axis of authoritarian history, and at its end stands Tainan Station.

We regard the station, therefore, as the endpoint of this axis—symbolically, the end of authoritarian history. The oppressive legacies and stories of that era converge here to be recorded, commemorated, and confronted. In response, an exhibition space is placed beneath the heritage station at the B1 level. This space mirrors the layout of the station's first floor above. The upper level—the historic station—represents the "old history," while the mirrored lower level commemorates the memories of authoritarian rule. This mirroring creates a spatial dialogue between past and present, between heritage and reflection, reminding us that only through honest confrontation with history can we move forward.

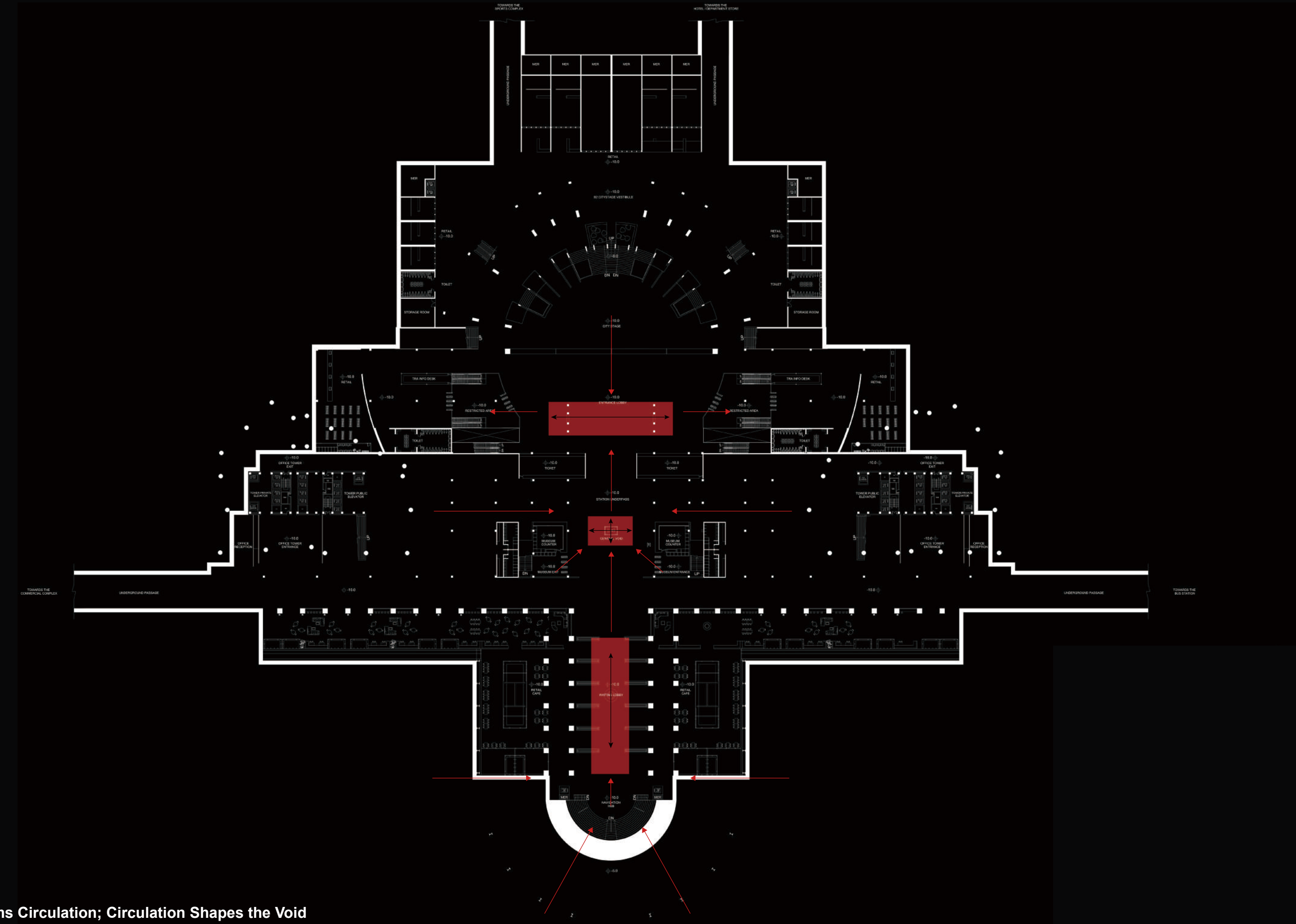
Furthermore, the design of all elements emphasizes visibility—allowing the heritage building to be viewed from multiple angles with no blind spots. This 360-degree approach symbolizes the transparent and multifaceted examination of authoritarian history. Only through such honest, unflinching observation can these stories be remembered, reconciled, and transcended.



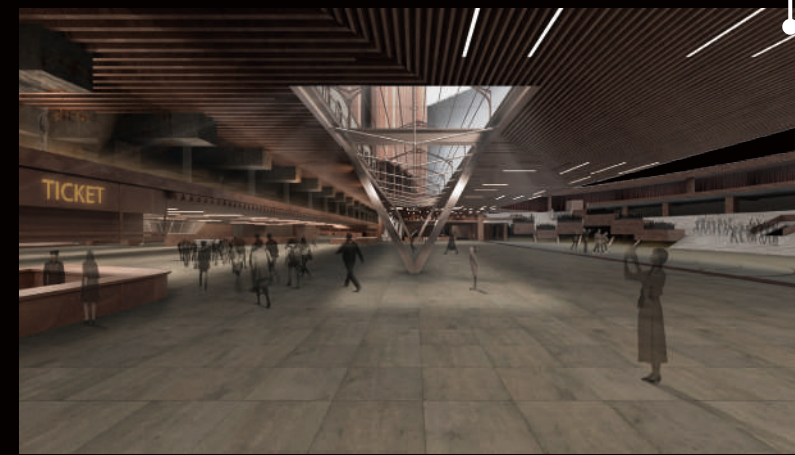
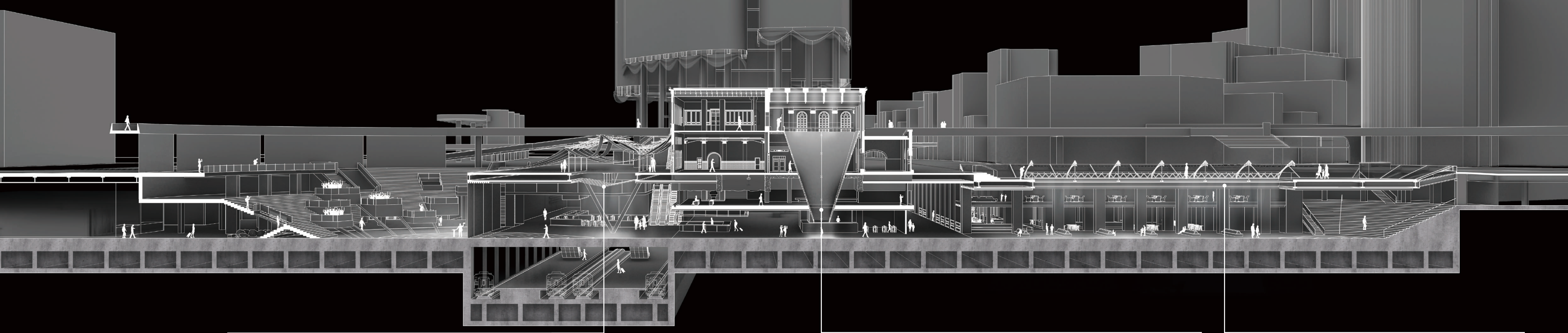
Metropolitan Church



Projet de bibliothèque royale



Void Informs Circulation; Circulation Shapes the Void



Entrance Void - Arrival First View

The Entrance Void guides passengers' circulation as they first arrive at Tainan Train Station. While moving toward the central Void, passengers can experience Tainan's two most important qualities: Future and Past.



Entrance Void

Looking from the City Stage toward the Entrance Lobby, the Entrance Lobby guides circulation and introduces natural light. At the same time, the unique upward view of the historic train station subtly reminds people of the monument's past presence and historical significance.



Central Void - Station Underpass

The central void receives circulation from multiple directions—such as the office tower, roundabout, museum, and platform entrance—making it a centripetal void. As a result, its form tends to be close to a square.



Central Void - Museum

The central void also cuts into the center of the museum, providing soft natural light and a sacred memorial atmosphere to the museum, which is primarily structured around the historic train station.

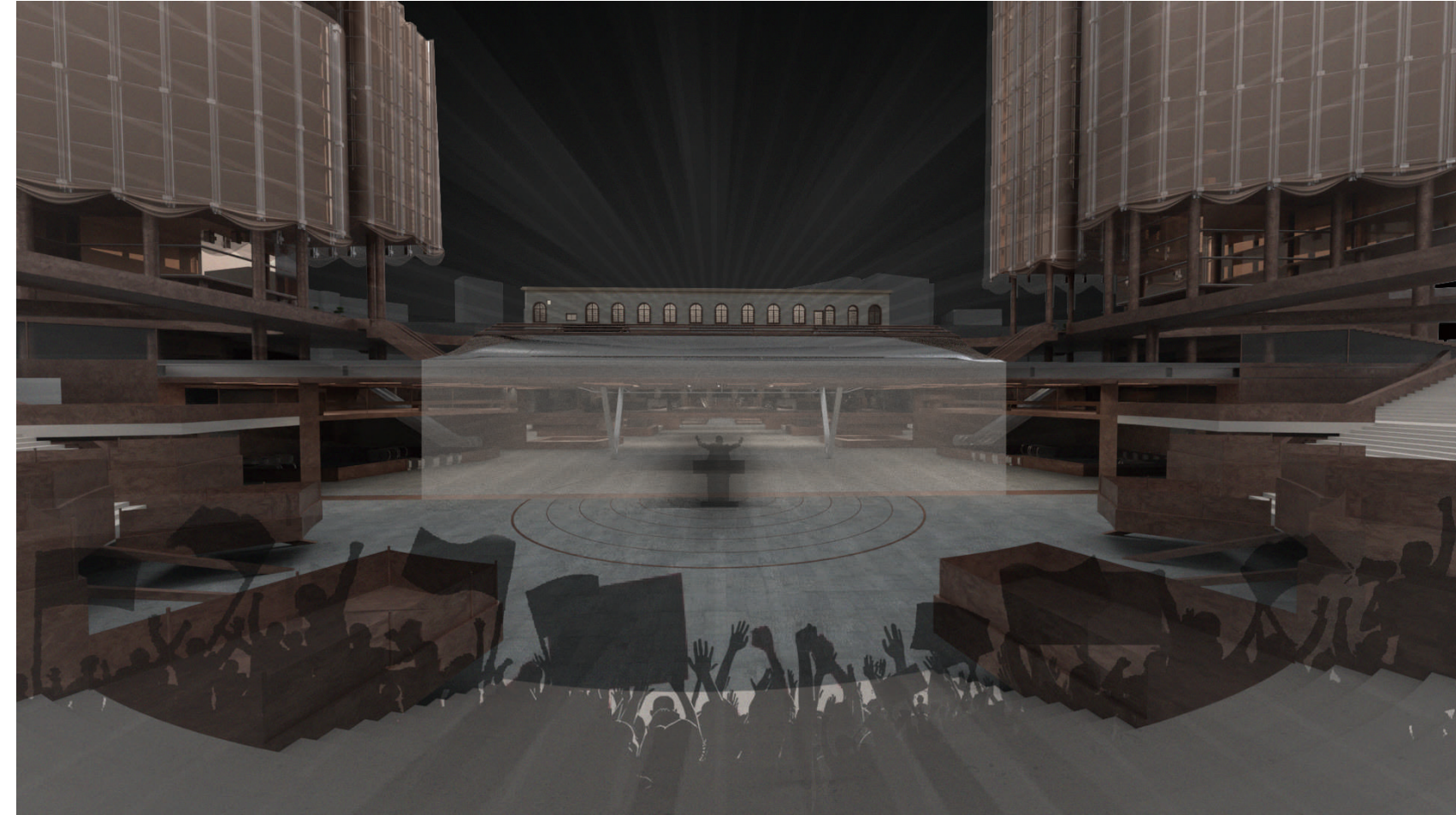


Central Void

The Roundabout Void allows people coming from the front station underground passage to intuitively feel the wayfinding. At the same time, it brings natural light into the underground waiting lobby and lounge. Above it, the structure of the old platform canopy is repurposed as support, bringing the past experience of waiting for the train back to the next-generation train station.

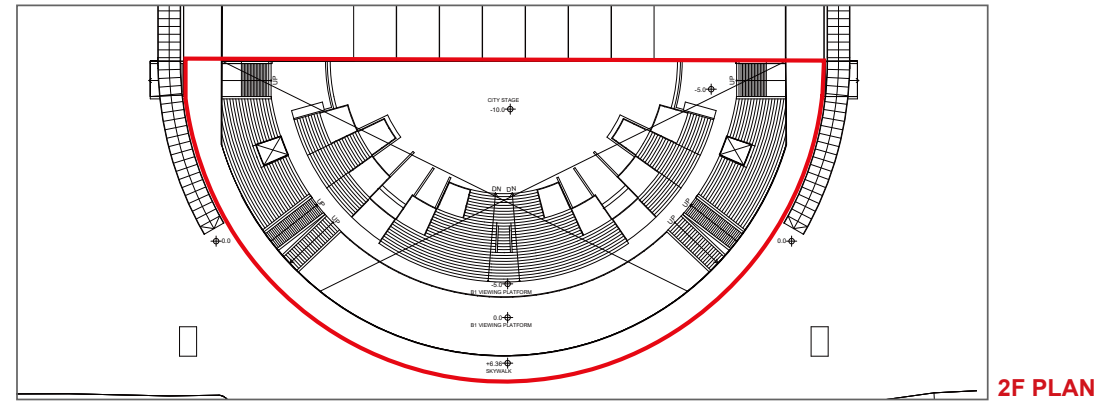
City Stage

Theatrical Space X Circulatory Hub

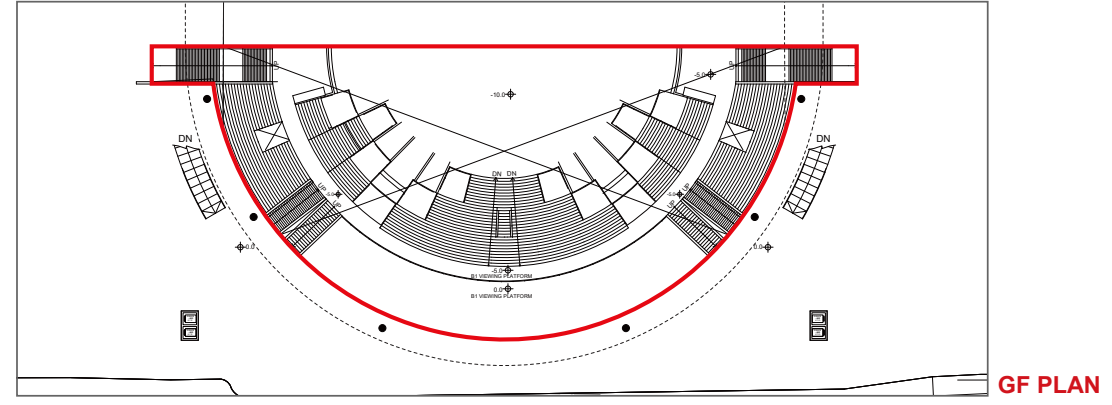


Circulation x Form

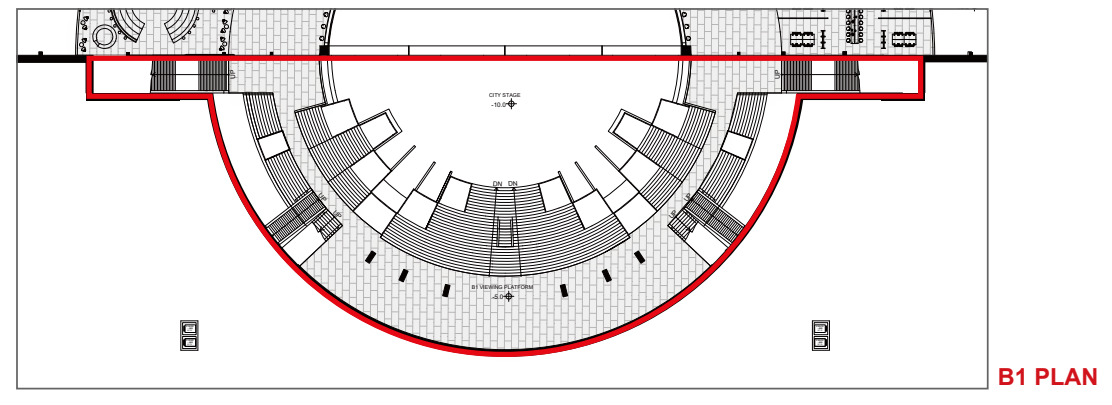
Daxue Road, the central axis pointing to Tainan Railway Station, establishes key elements of the City Stage. The former real platform space is sunken, transforming into a multifunctional area combining a theater, grandstand, retail zones, skywalk, and the plaza in front of the station. Functional spaces required by the railway station are distributed along both sides of the axis. These strategies enhance urban transportation, optimize infrastructure, preserve Tainan's historical and future elements, and reimagine the city's layout following the railway's undergrounding.



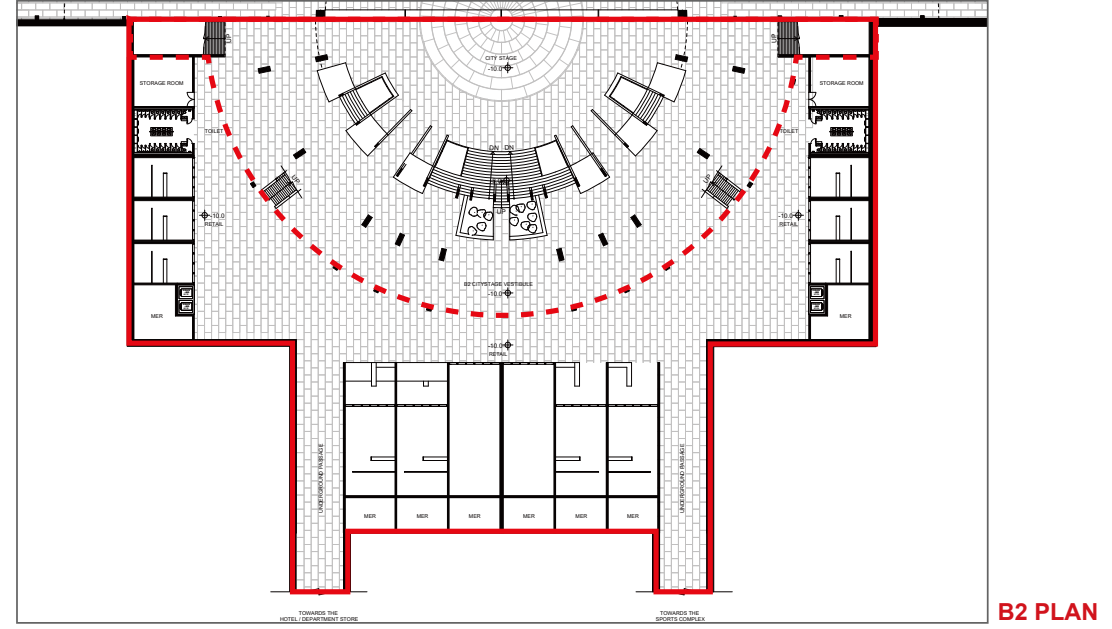
2F PLAN



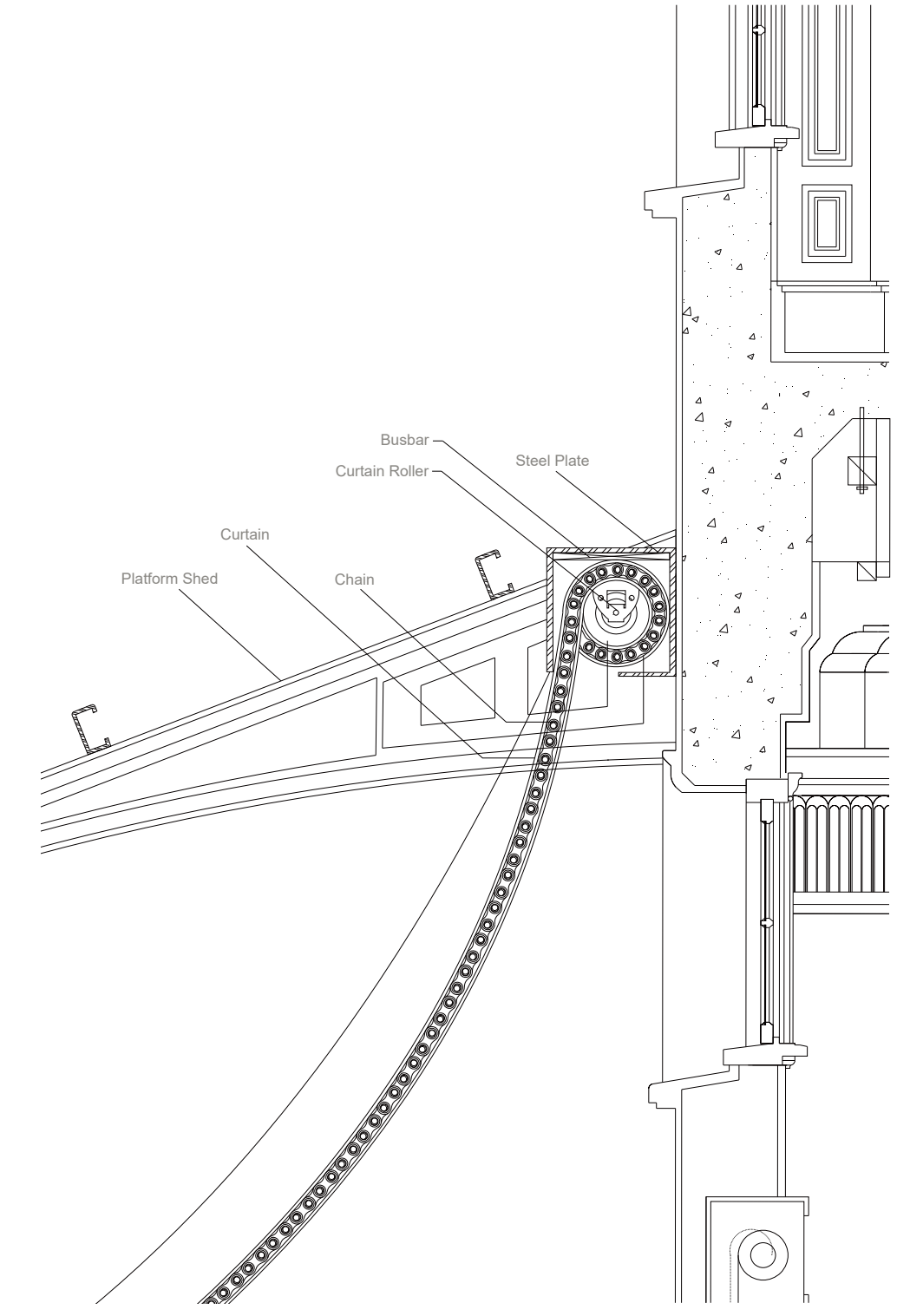
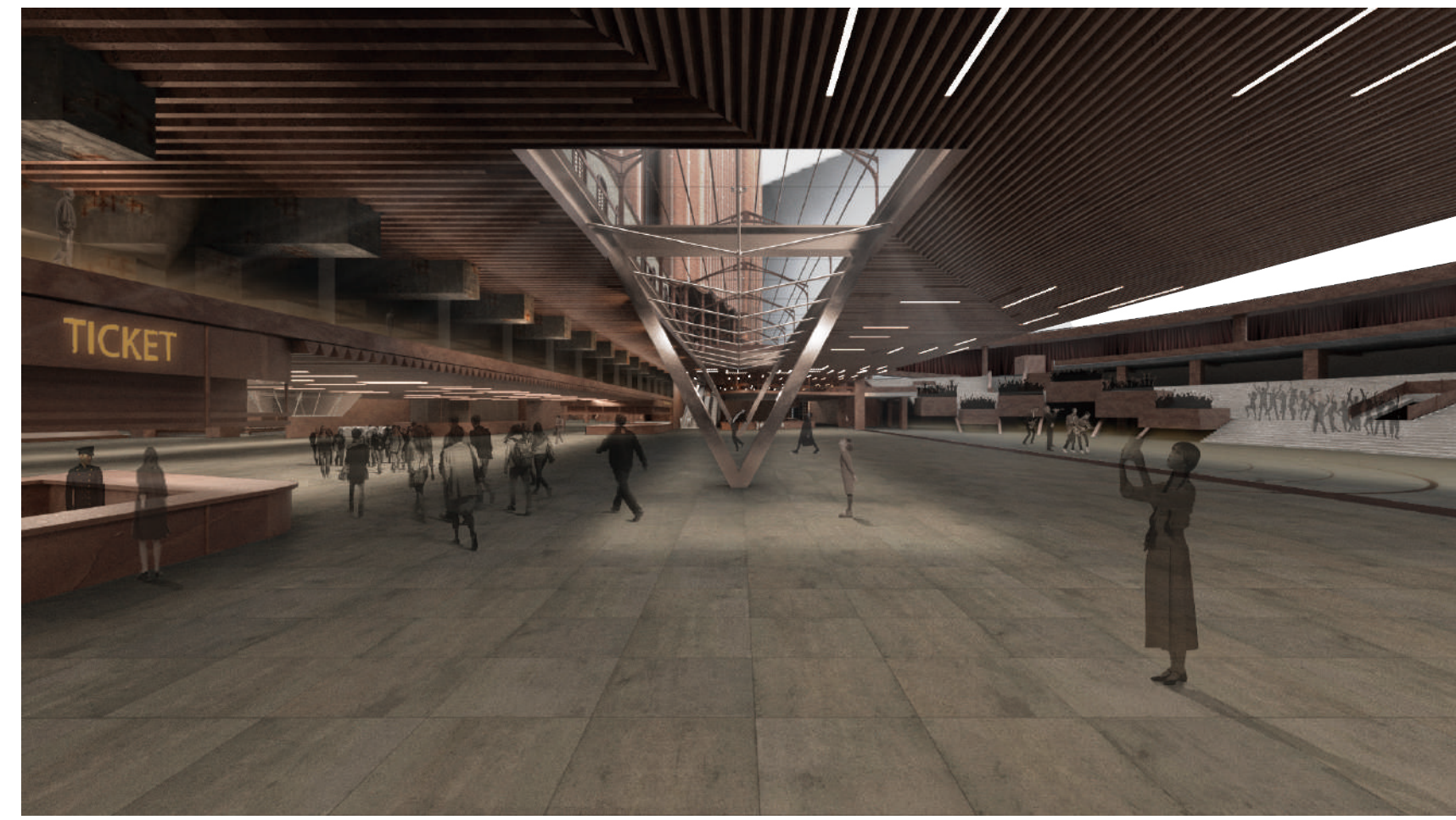
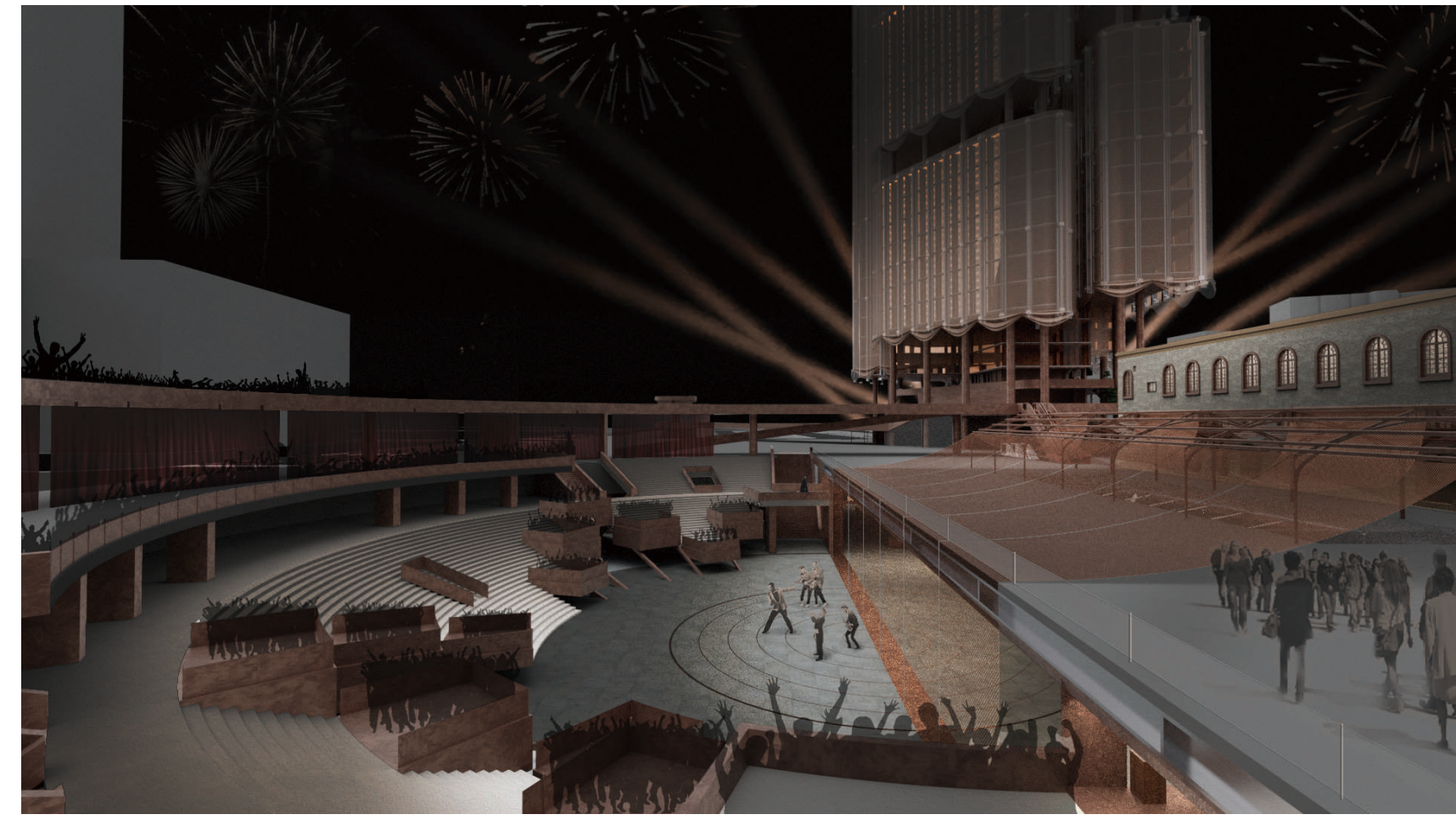
GF PLAN



B1 PLAN



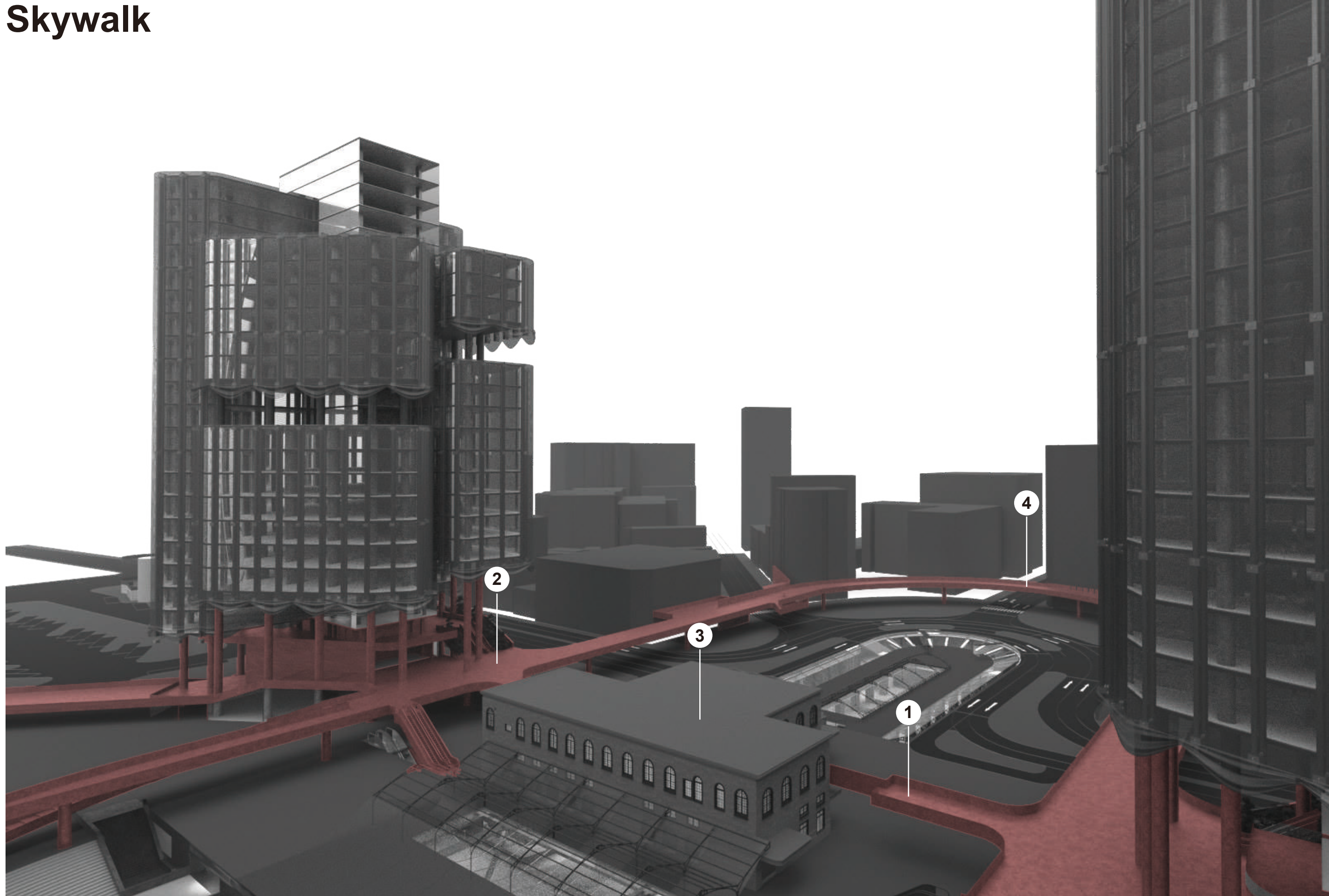
B2 PLAN



Adaptive Spatial Partitioning

At the City Stage near the station's main entrance, the two spaces are typically open and continuous, forming a large entryway that maximizes circulation flexibility. During events, however, their functions require separation. To achieve this, an adaptive curtain system was designed to interact with the heritage platform canopy. As the curtain expands or retracts, the curvature of the upper fabric dynamically adjusts. This system introduces a transformable boundary that redefines the spatial experience at both ground level and the underground space.

Skywalk



Key Node of the Skywalk



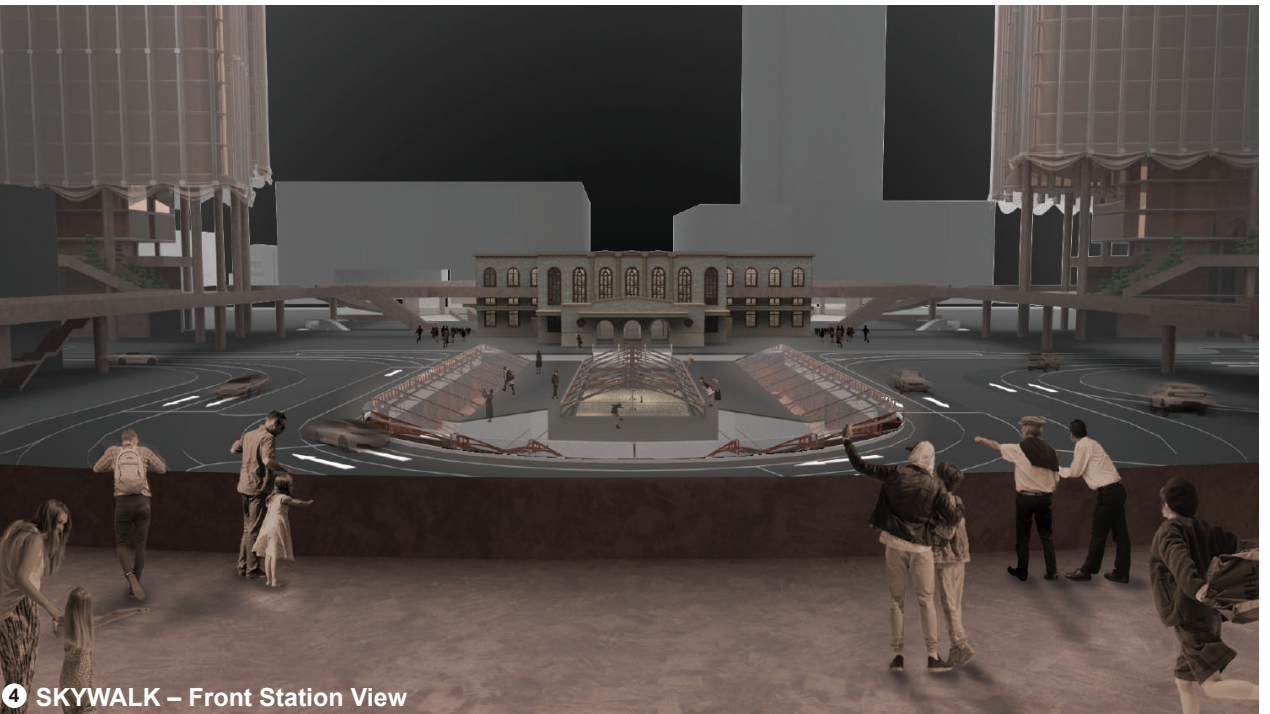
1 SKYWALK – Inserting into the Historic Station



2 SKYWALK – Connecting the Office Tower and the Historic Station



3 SKYWALK – New Interior Corridor within the Historic Station

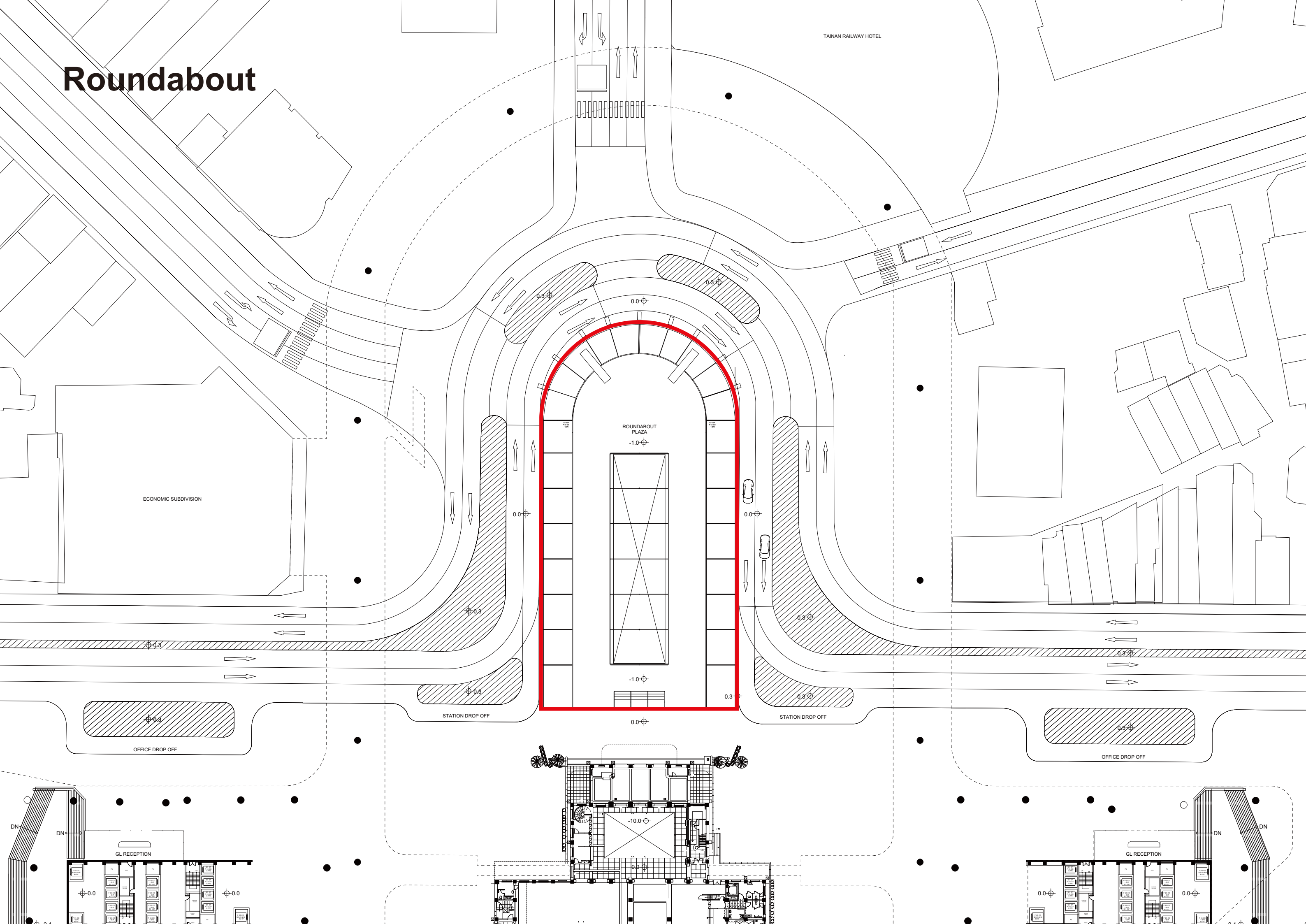


4 SKYWALK – Front Station View

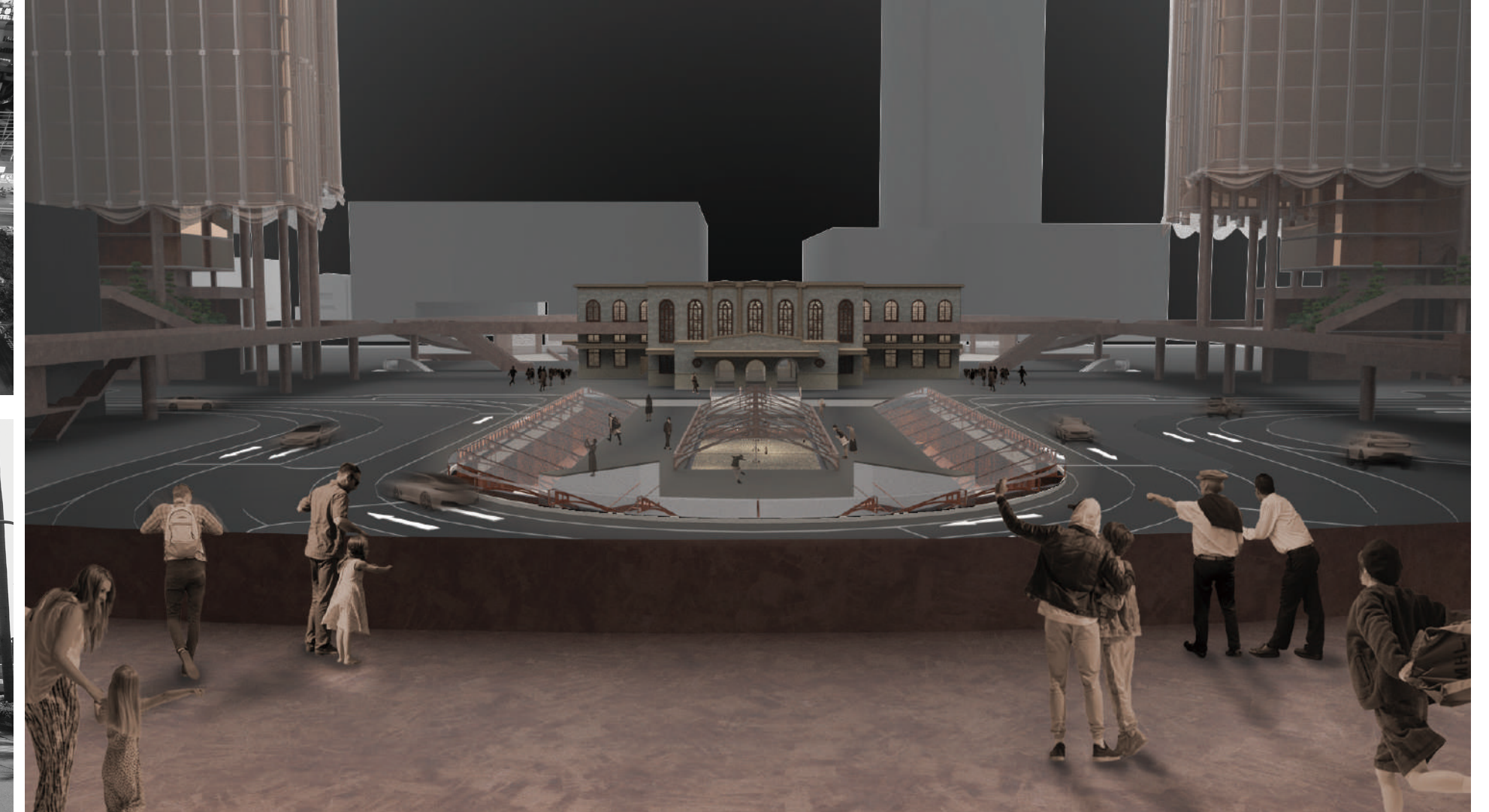
Bridging Disconnected Circulation and Time

The Skywalk connects all functional spaces and surrounding buildings around Tainan Train Station, stitching back together the urban circulation network once severed by train tracks and the old roundabout. But it does more than link circulation—it weaves together the new and the old, bridging across different times and spaces. It also creates diverse viewpoints and architectural experiences that were never possible before.

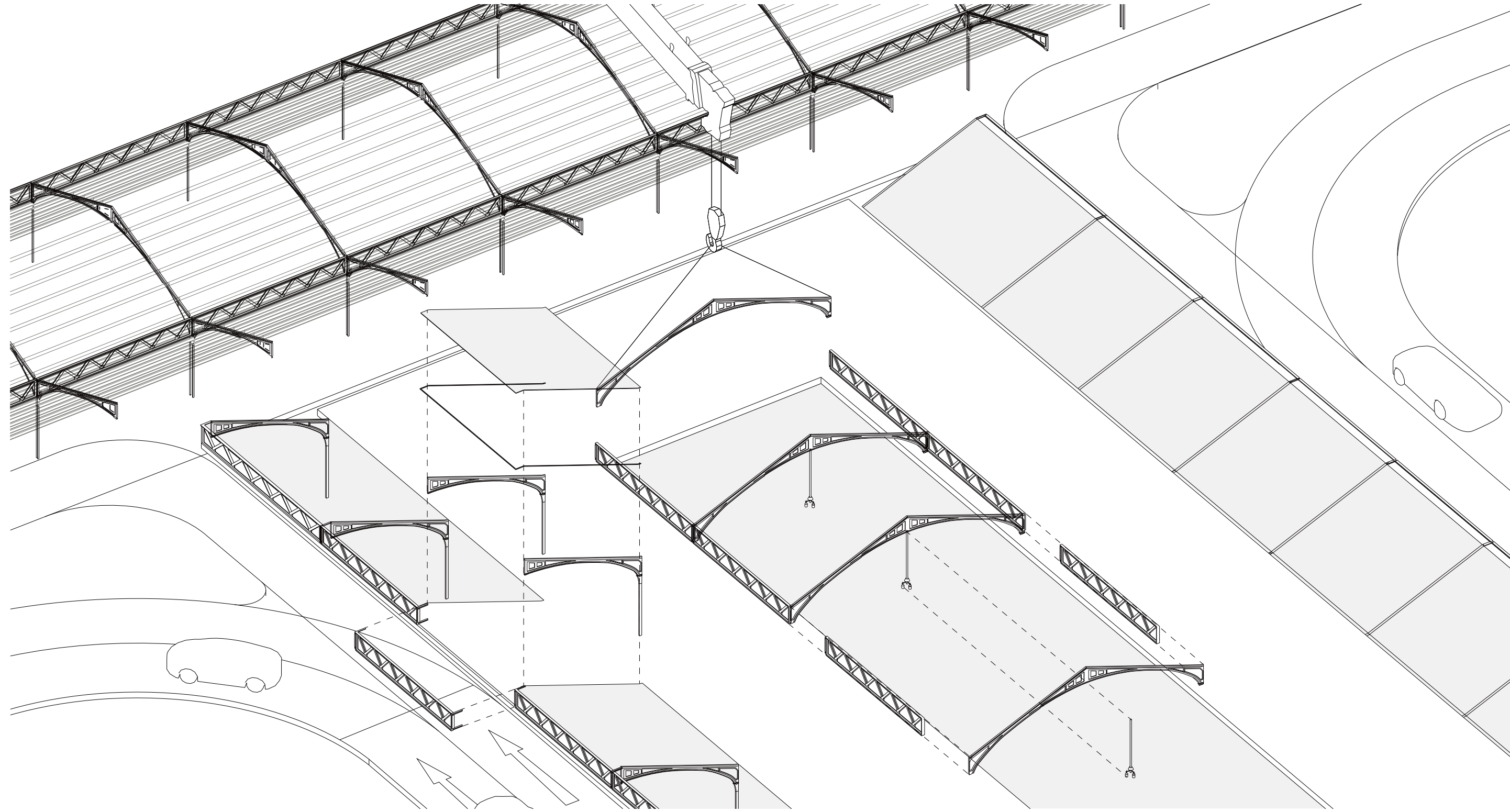
Roundabout



Current Roundabout Condition



Future Roundabout Design



Deconstruction & Reconstruction Of Platform Shed



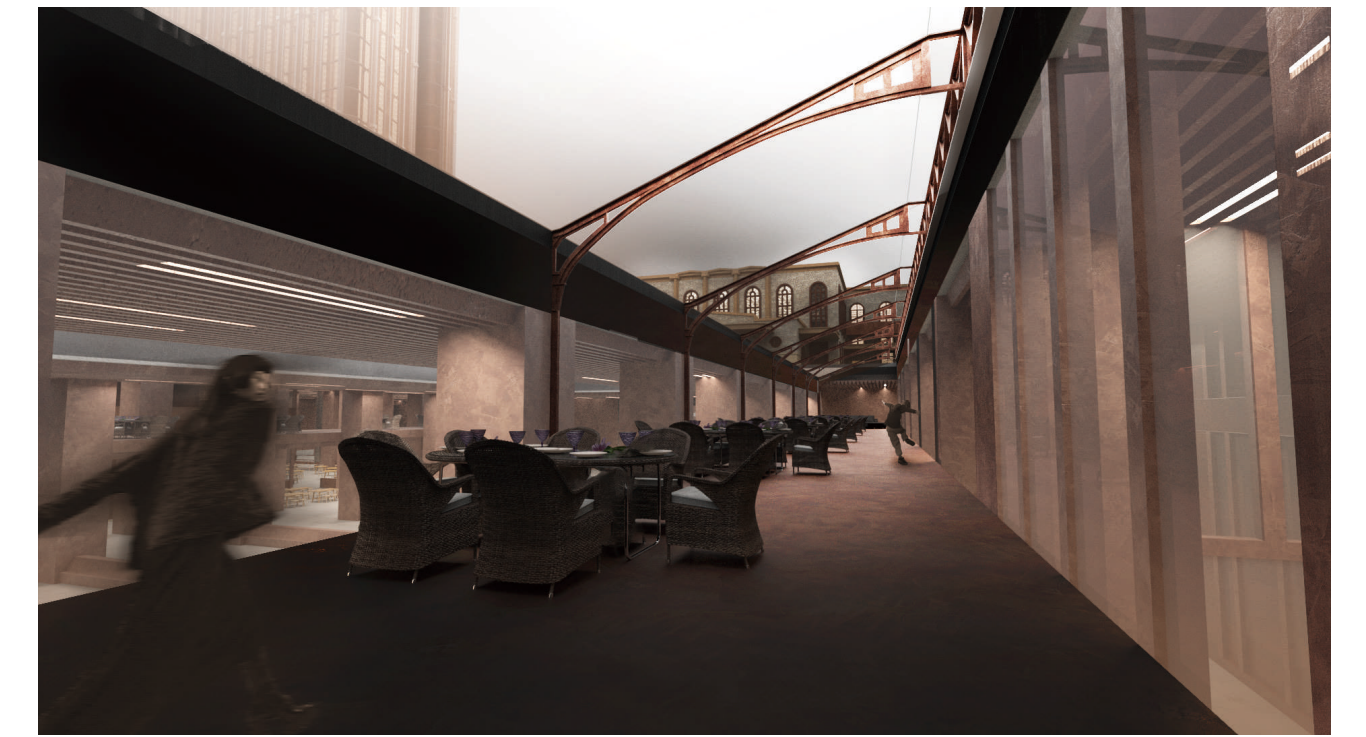
Waiting Under the Old Platform Shed



Steel Structure Design of the Past Shaped the Image of Tainan's Historic Station

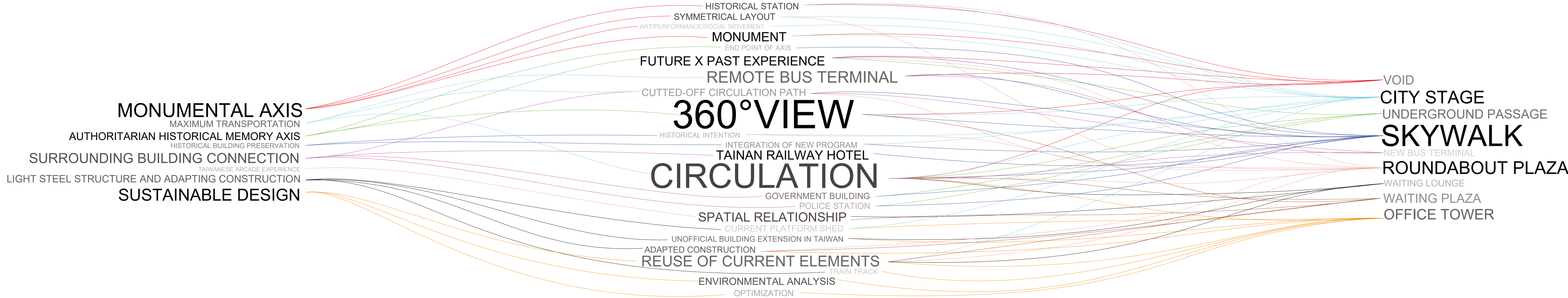


Future Waiting Hall

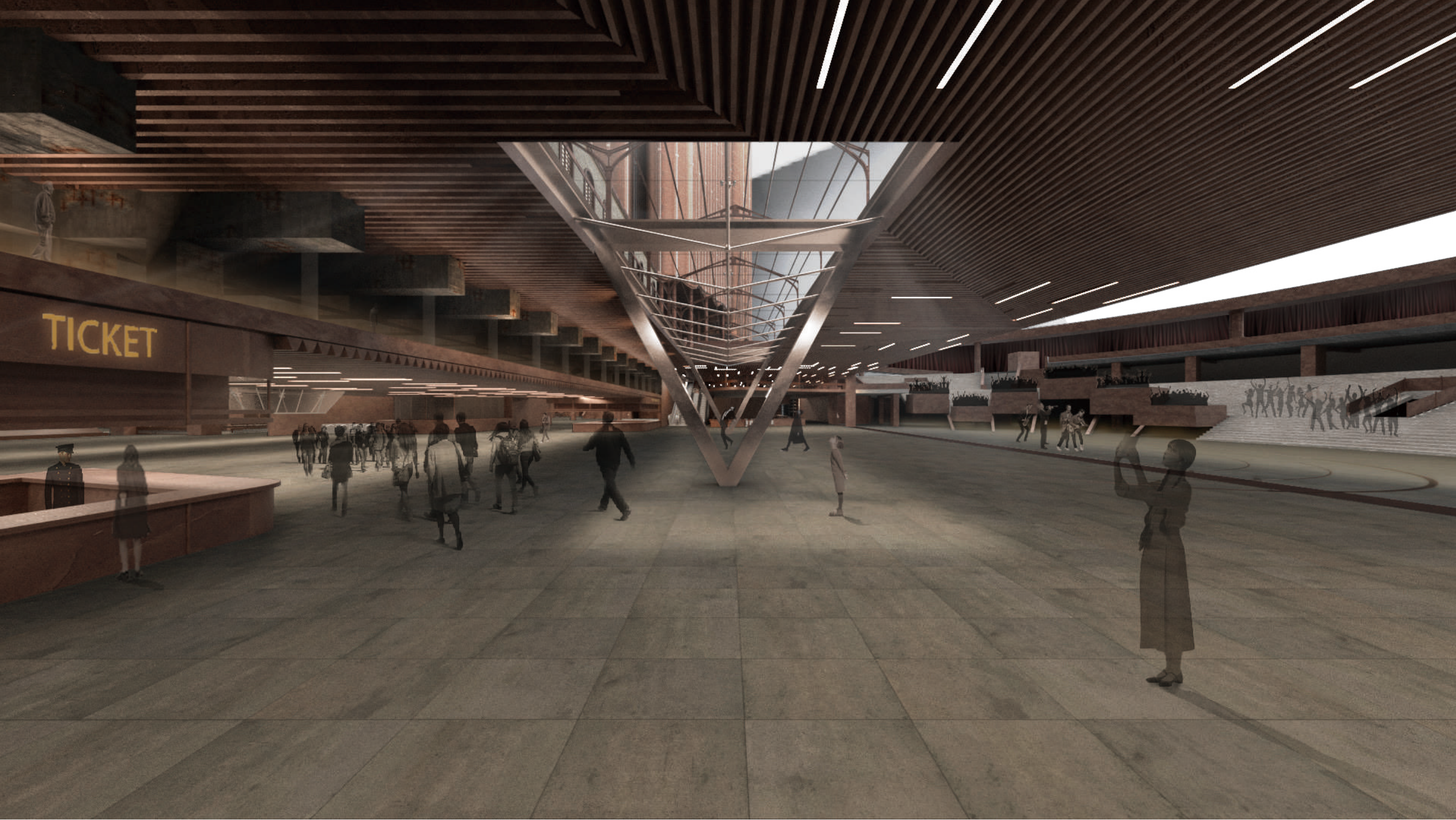


Future Waiting Lounge

Principles + Implementation



Circulation + Experience + Details



Entrance Void - Arrival First View



Entrance Void - A View Through The Past And The Future



Central Void - B2 Station Underpass



Central Void - B2 Station Underpass



Central Void - B1 Museum



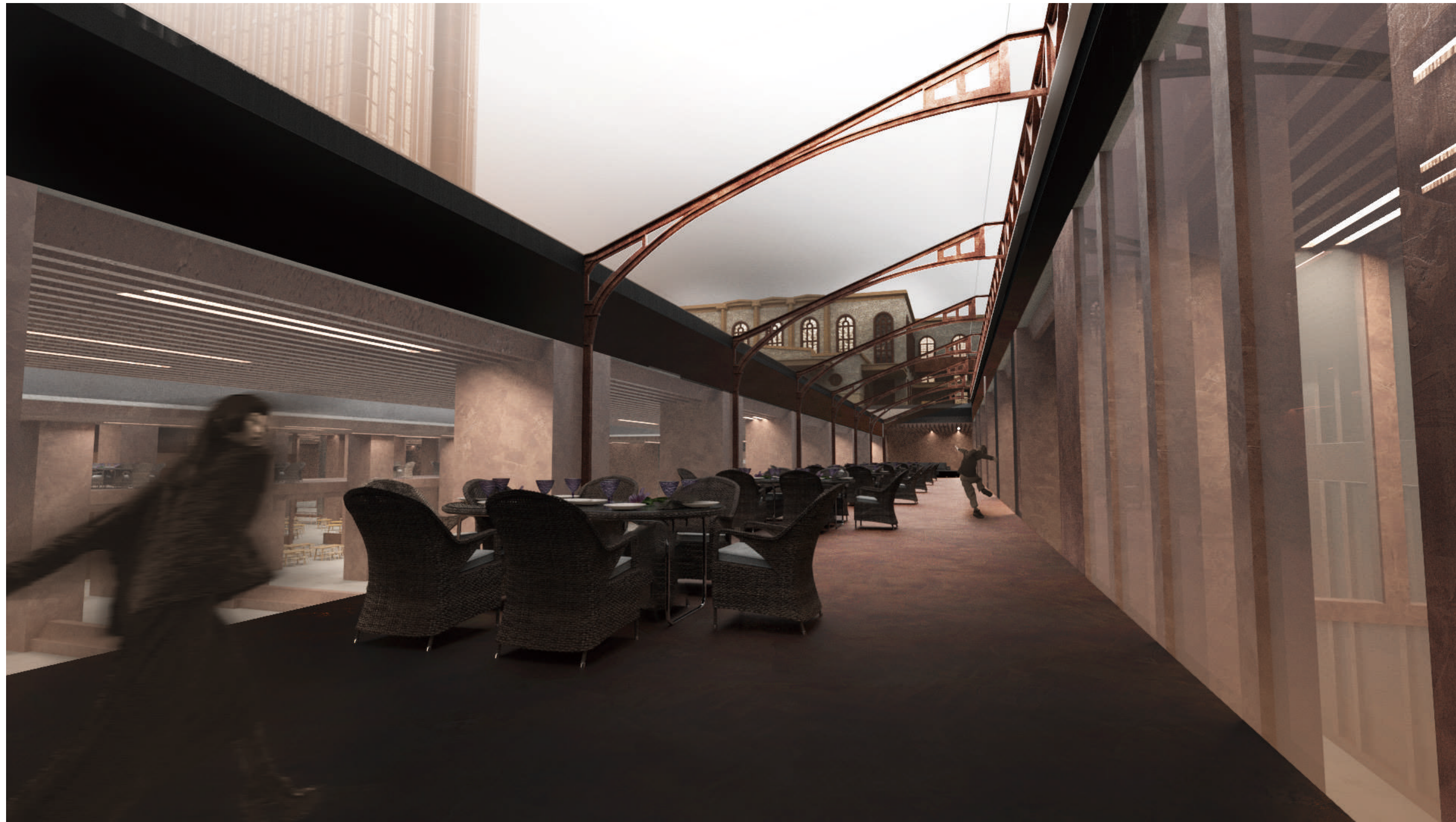
Central Void - 2F Interior of Tainan Station Heritage Building



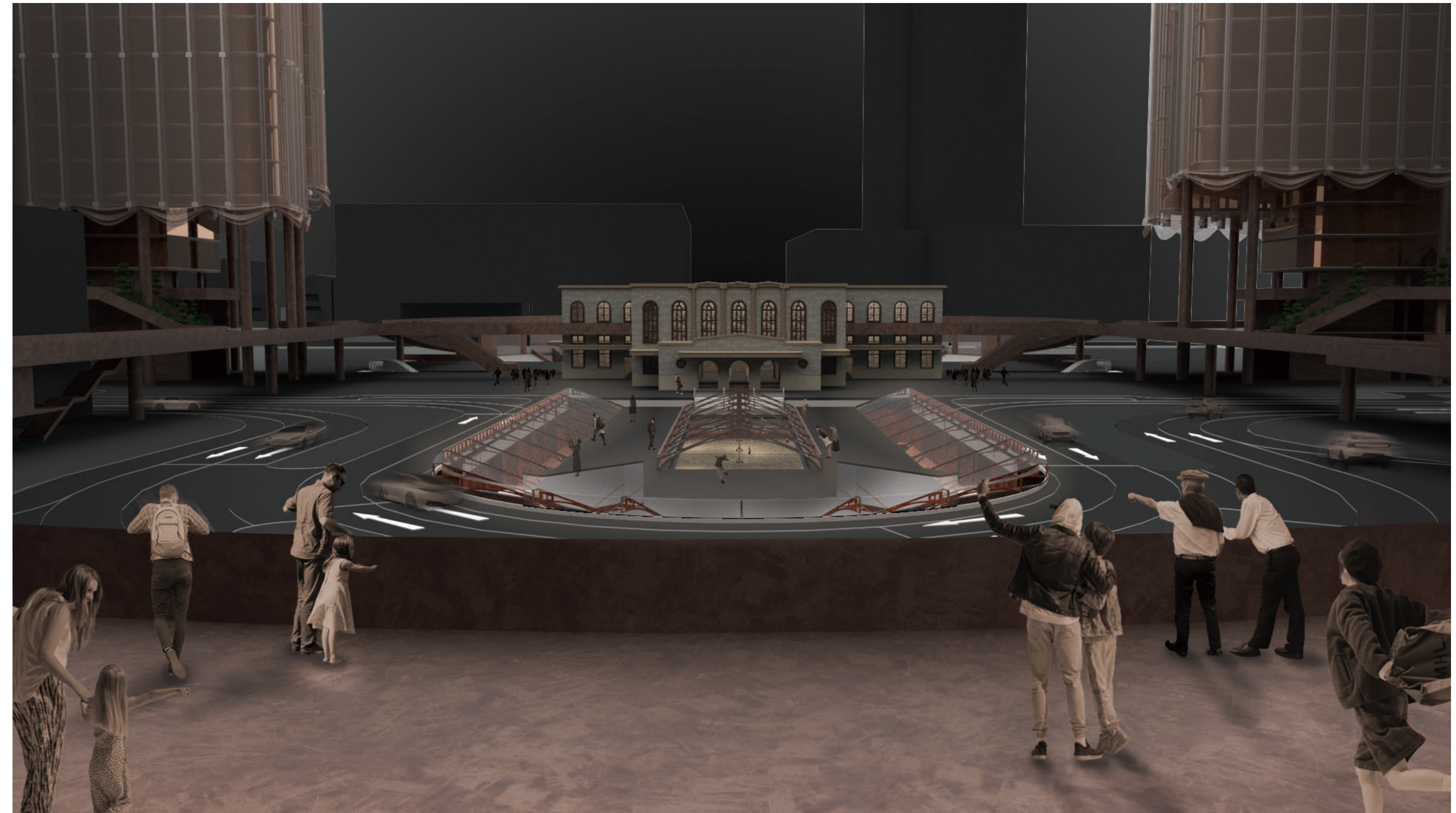
Central Void - Dialogue Across Time And Space



Roundabout Void - Future Waiting Hall



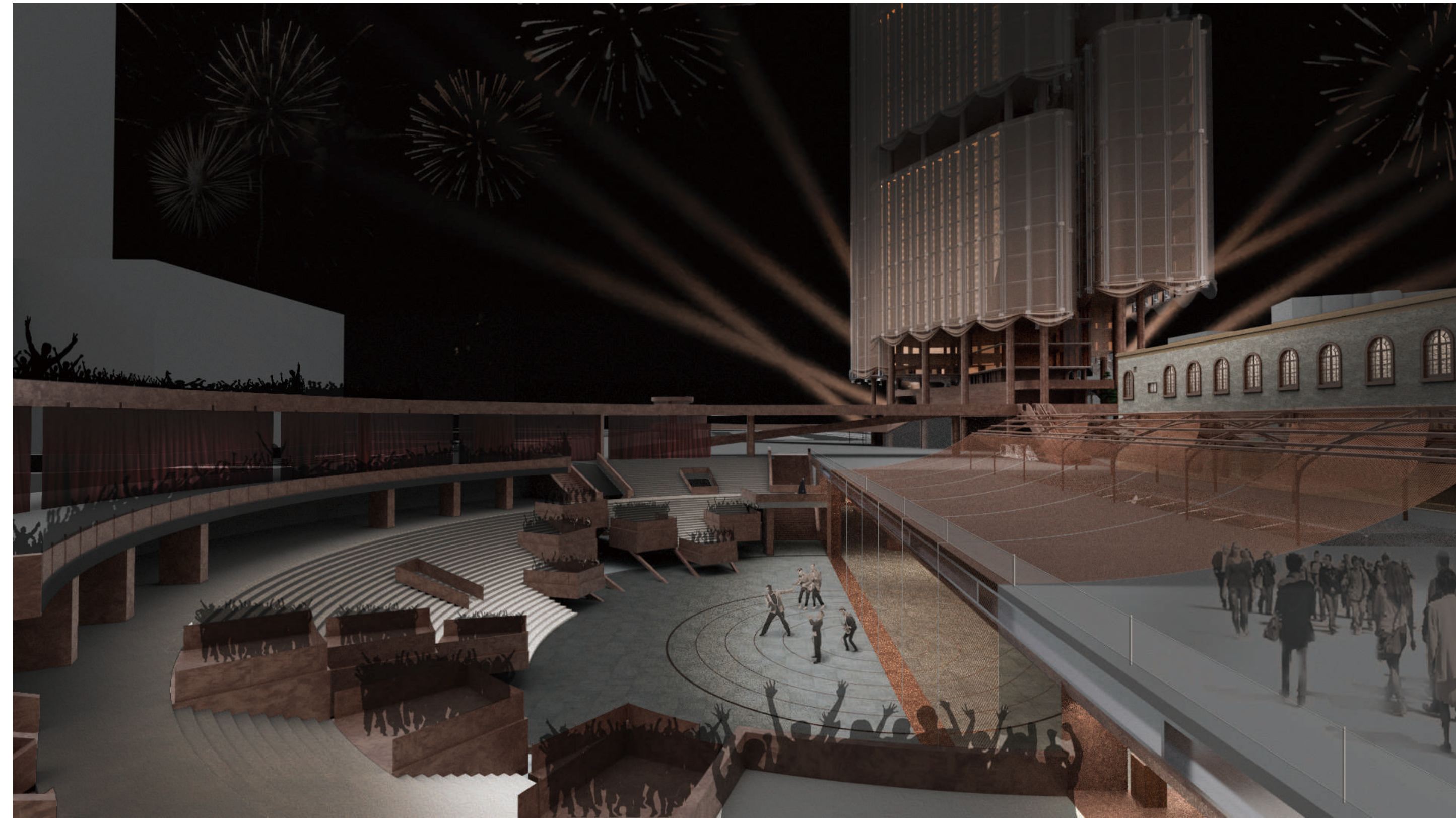
Roundabout Void - Future Waiting Lounge



Future Roundabout Design - From The Perspective Of The Skywalk

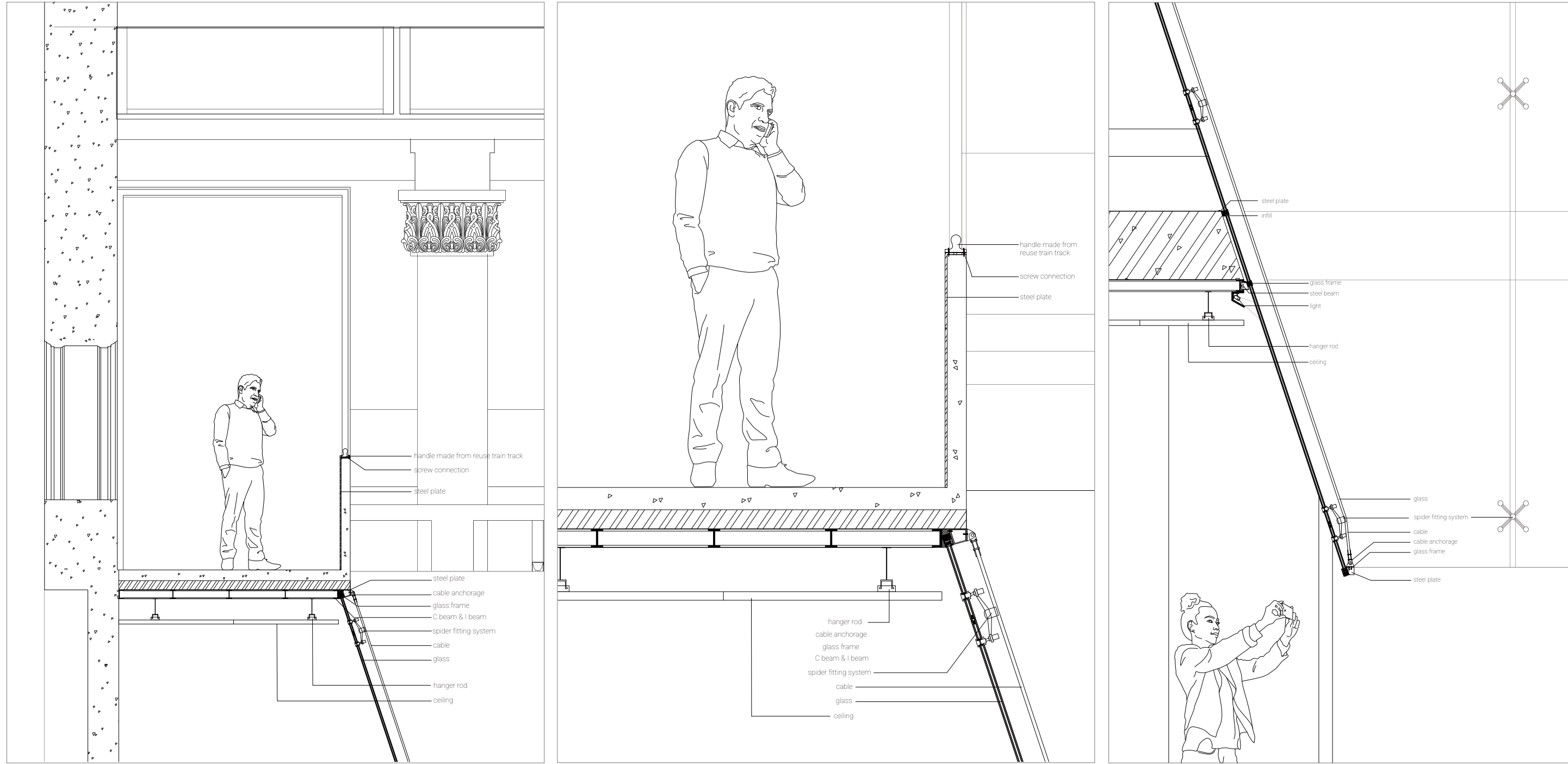


Office Tower Public Floor / Skywalk Connection



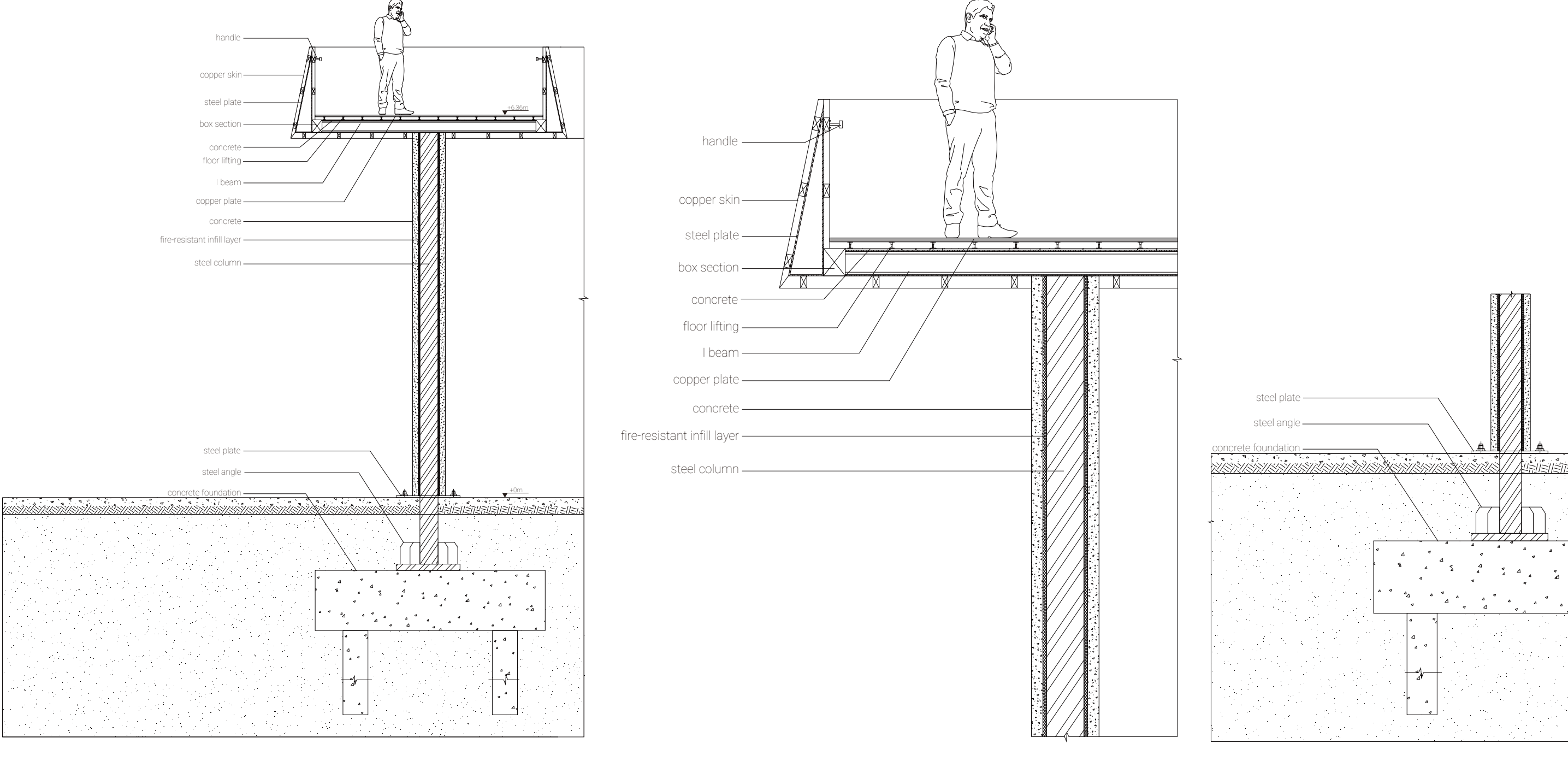
City Stage

Structure + MEP



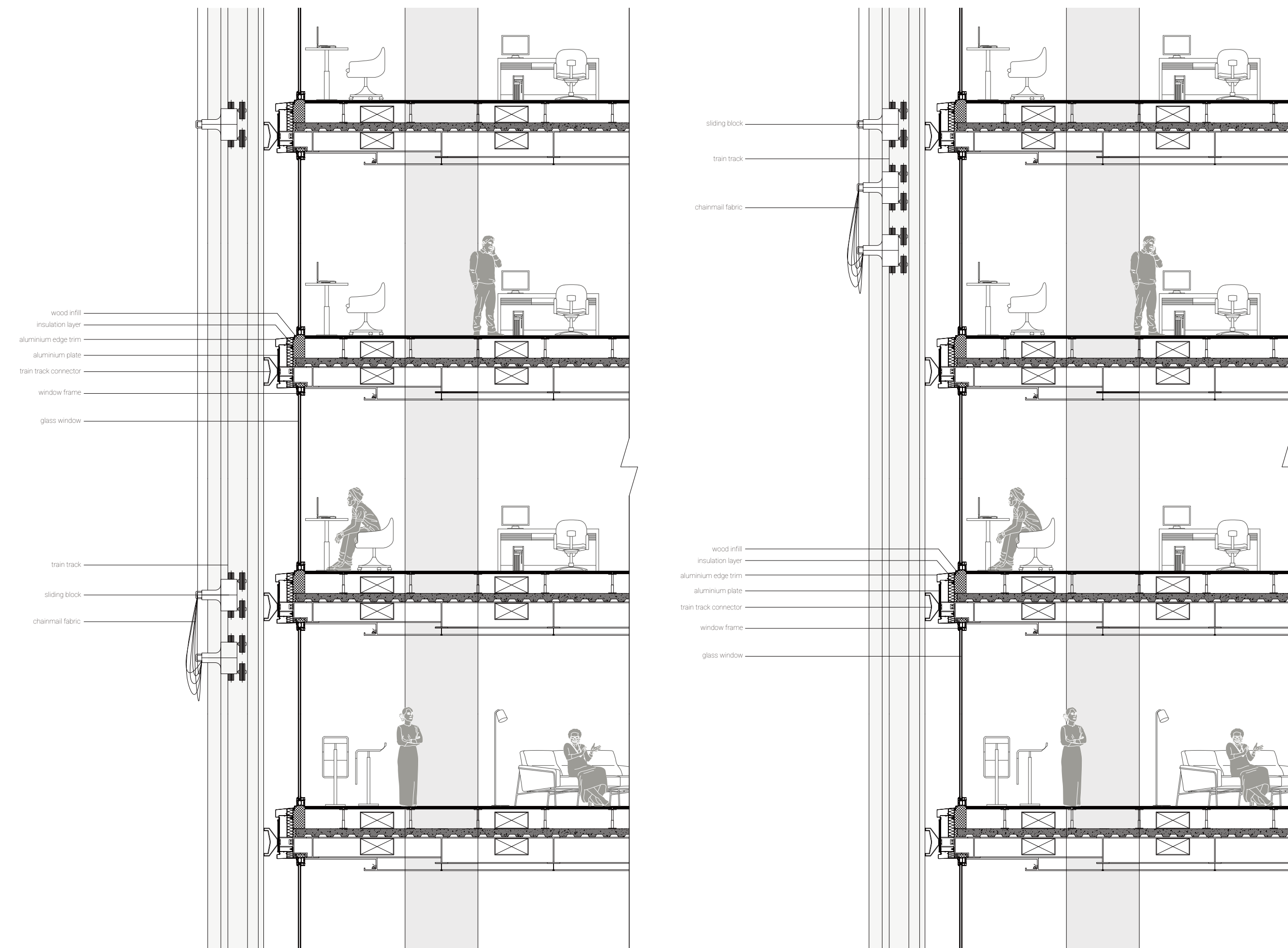
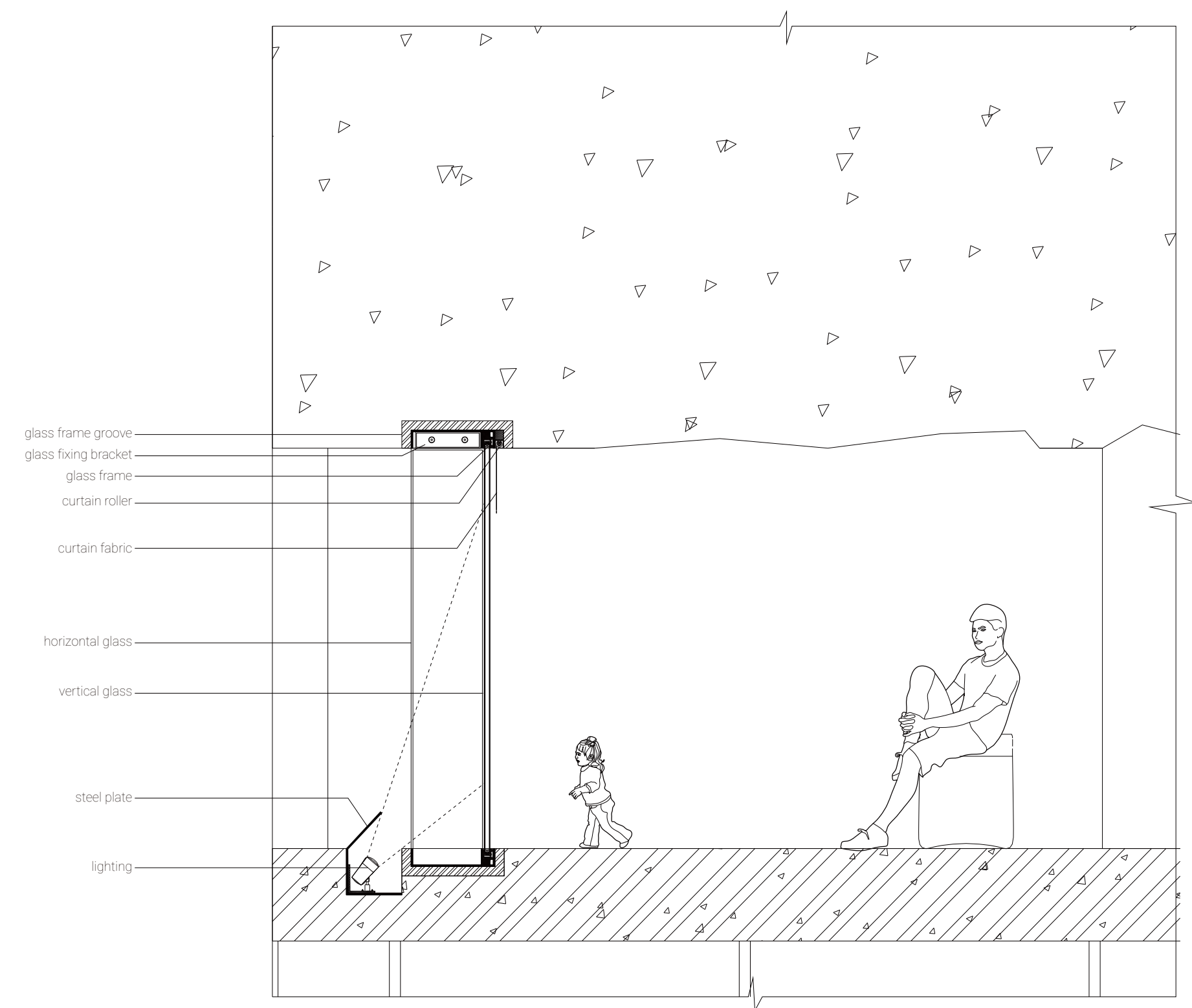
Center Void

The central void is inserted into the historic building, structurally relying on the existing framework for support. Visually, it is designed to be understated so as not to obstruct views of the train station. To achieve this, the structure is supported using suspended glass panels, with most of the load-bearing elements concealed beneath the Skywalk.



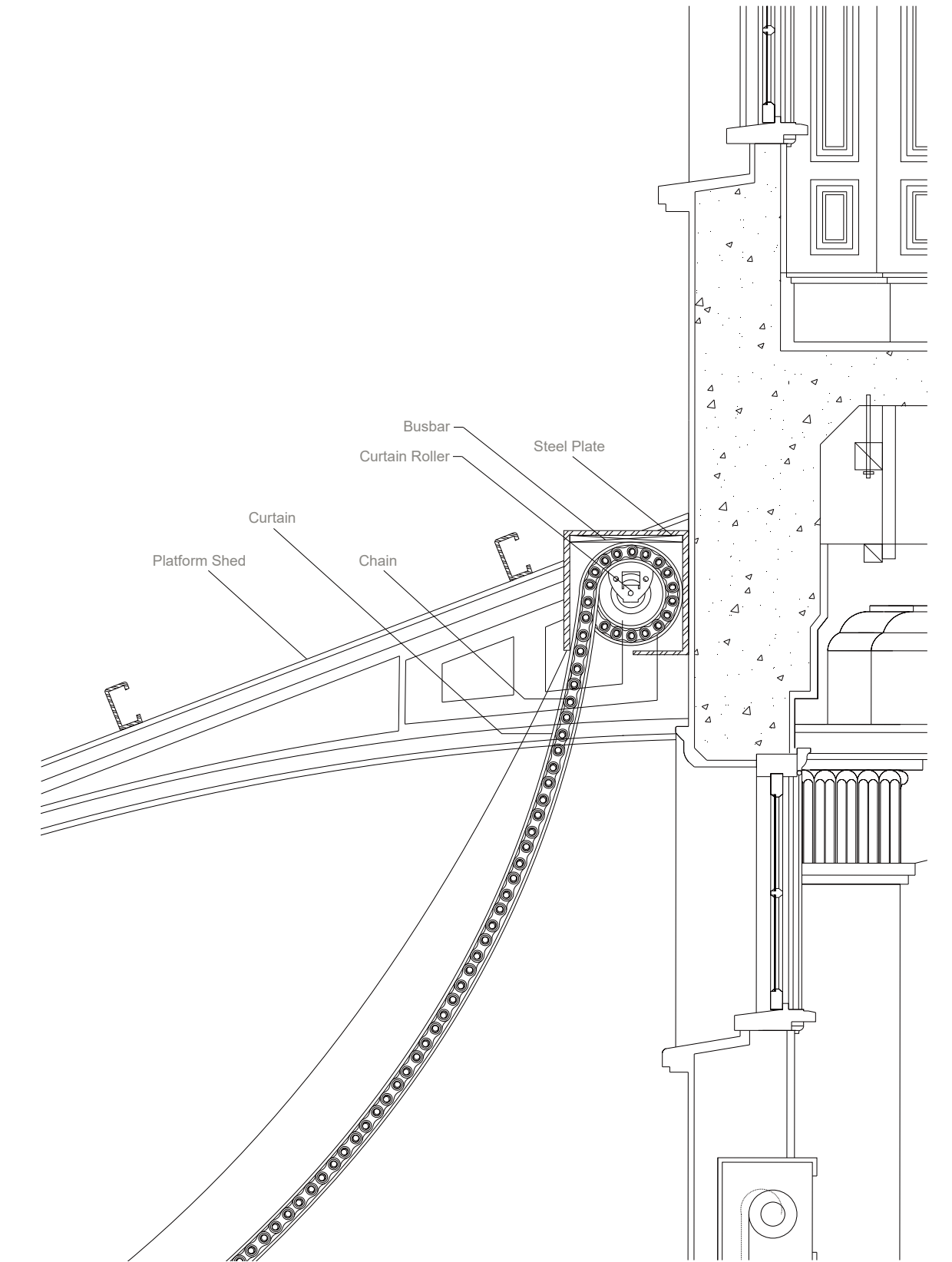
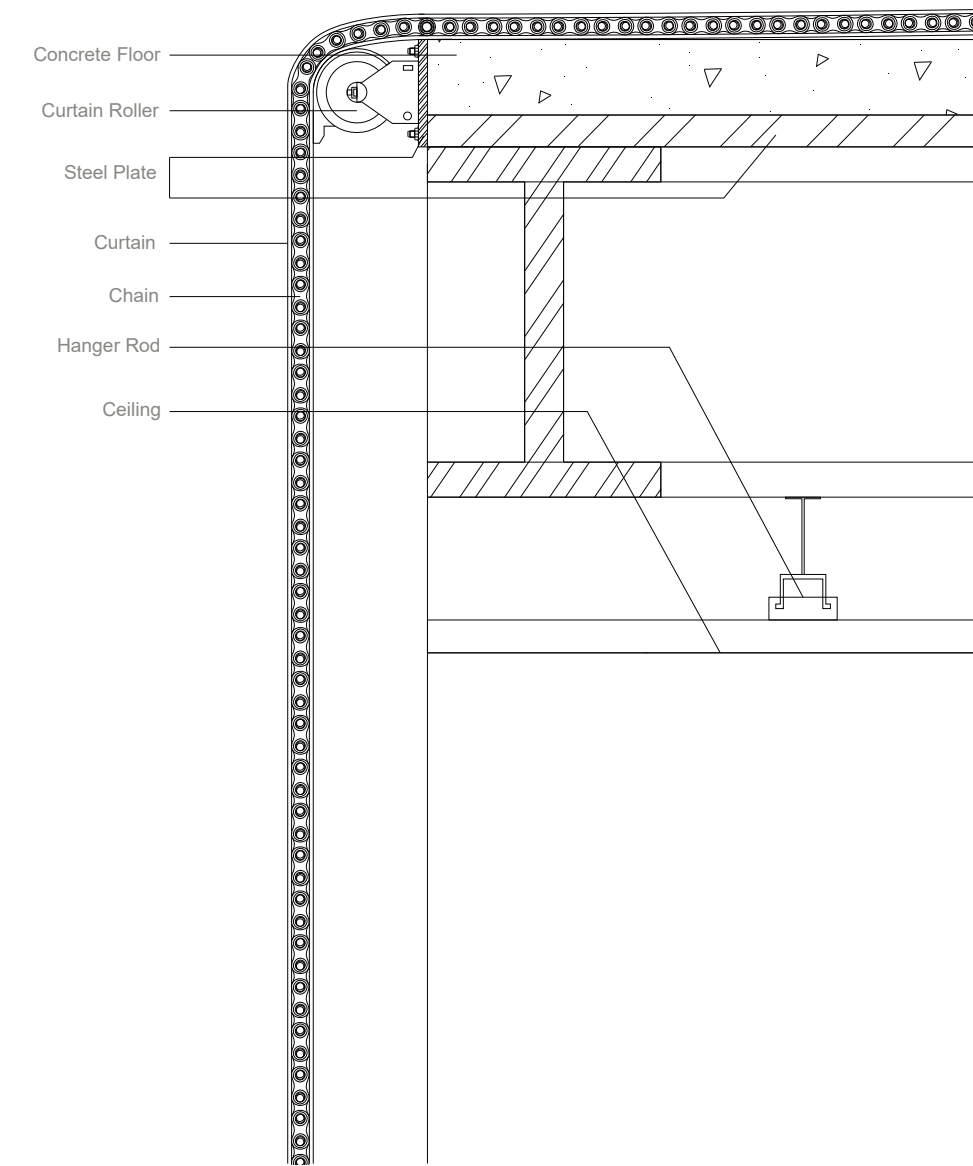
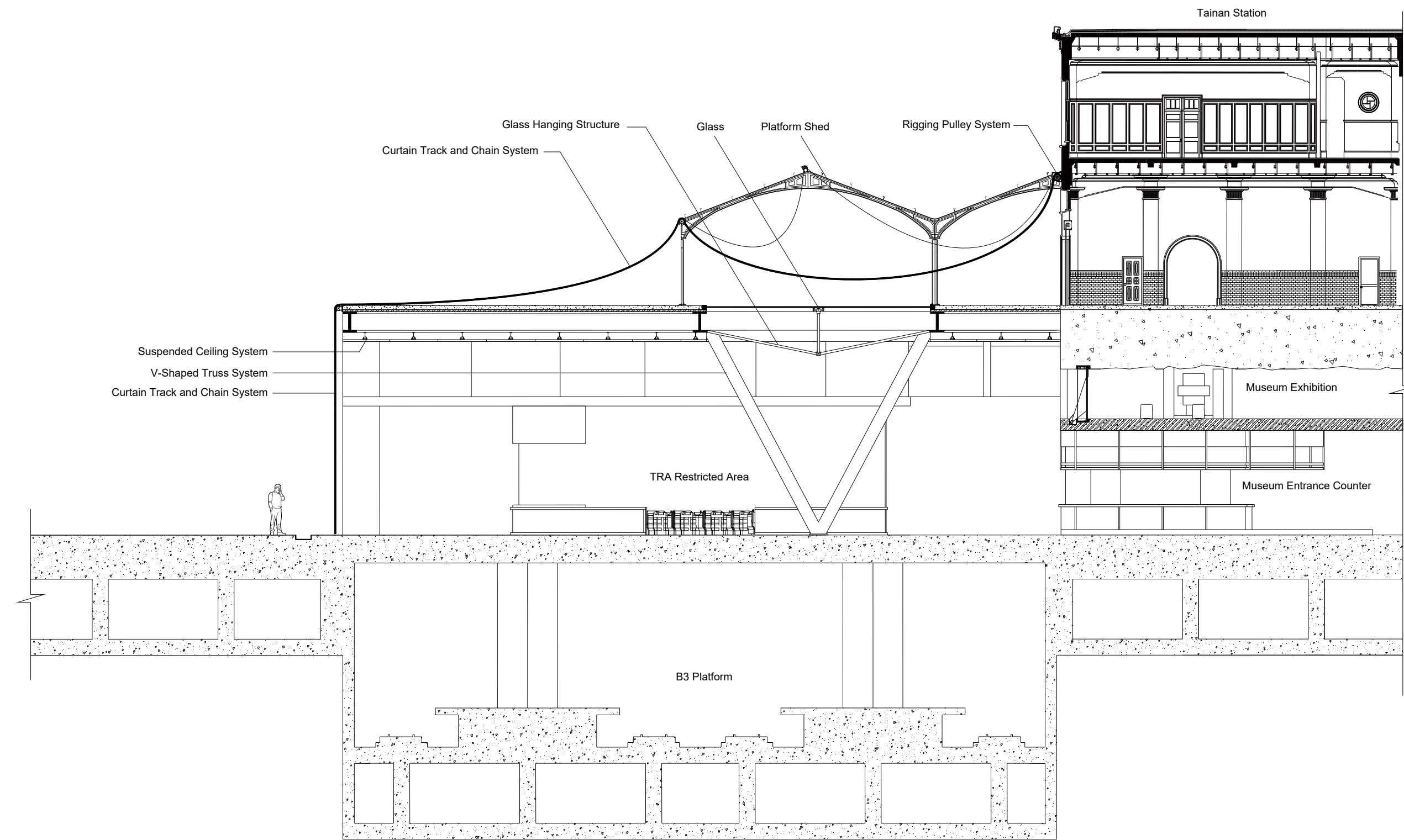
Skywalk

Skywalk columns are distributed throughout the site, designed with simple and understated structural solutions. The overall visual expression of the Skywalk is wrapped in a metallic skin, with a steel frame as the primary structural system. Its foundations are anchored deep into the ground, aiming to keep the Skywalk visually subtle so as not to draw attention away from other architectural elements.



Museum Curtain Wall

At the boundary between the B1 museum and the interior space, a glass wall is required to define the spatial separation and to isolate sound and air conditioning. This glass wall is anchored beneath the raft foundation of the historic train station, where the uneven surface must be leveled and treated. Additionally, lighting grooves are added along the base to draw the attention of external users and highlight the presence of the museum.



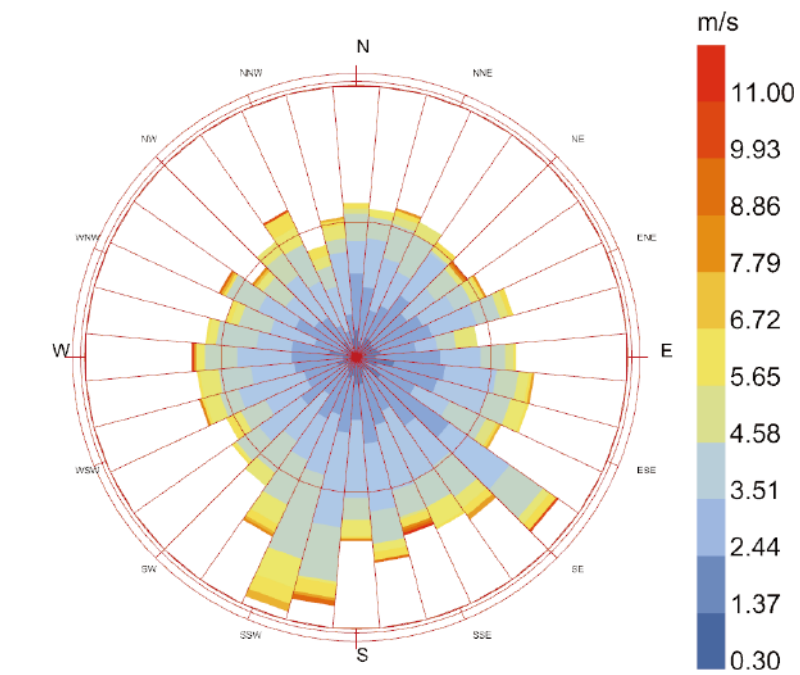
Curtain mechanism

At the City Stage near the station's main entrance, the two spaces are typically open and continuous, forming a large entryway that maximizes circulation flexibility. During events, however, their functions require separation. To achieve this, an adaptive curtain system was designed to interact with the heritage platform canopy. As the curtain expands or retracts, the curvature of the upper fabric dynamically adjusts. This system introduces a transformable boundary that redefines the spatial experience at both ground level and the underground space.

Sustainability

Outdoor Comfort Analysis + CFD Simulation Summer

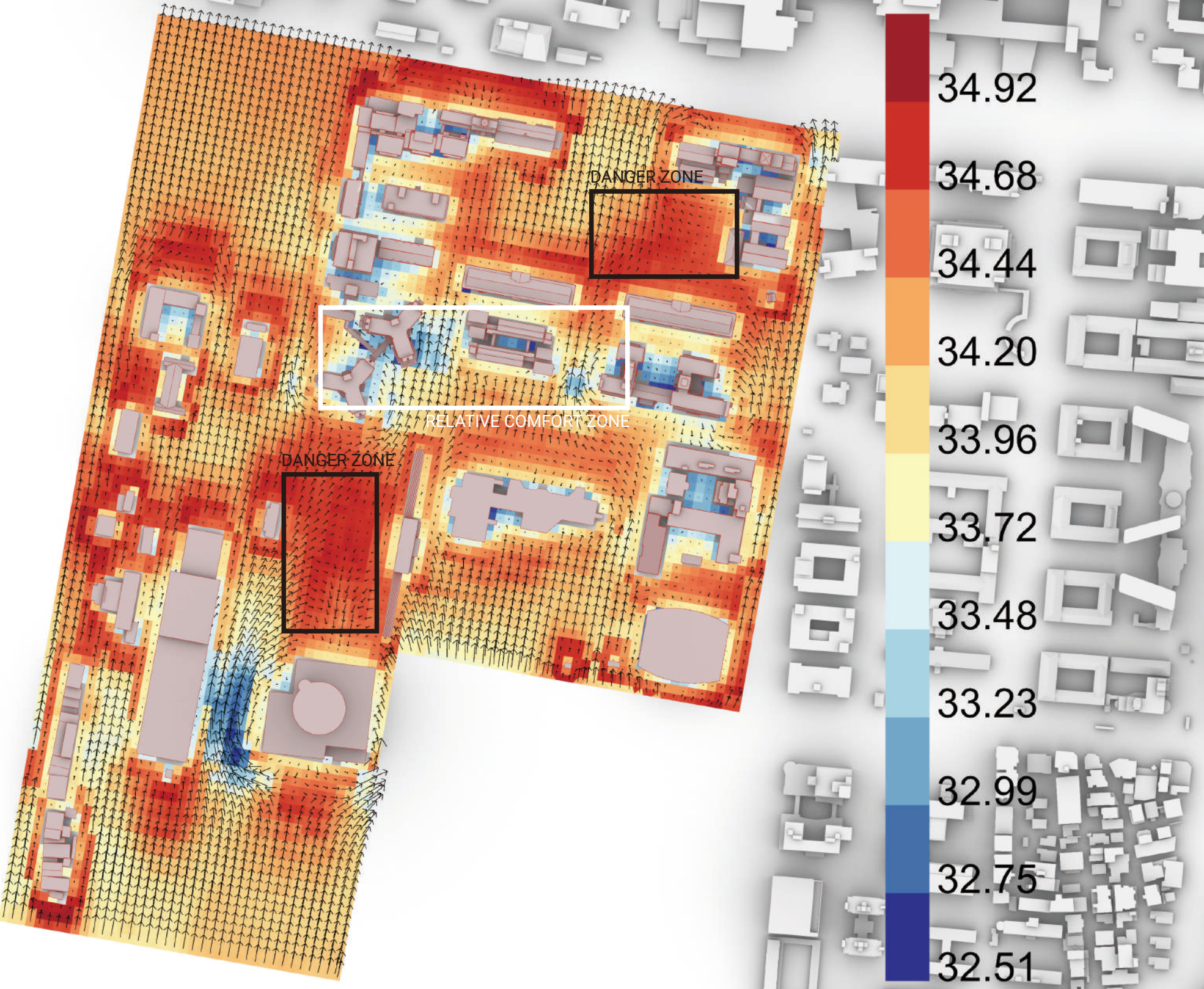
Time Period: 6/1-8/31 0-23
 Main Wind Direction: 200(Ssw)
 Max Wind Speed: 11.0 M/S
 Utci: 32.51-34.92°C



Wind Speed (m/s)
 city: Tainan
 country: TWN
 time-zone: 8.0
 source: Custom-593580
 period: 6/1 to 8/31 between 0 and 23 @1
 Calm for 0.14% of the time = 3 hours.
 Each closed polyline shows frequency of 2.3% = 50 hours.

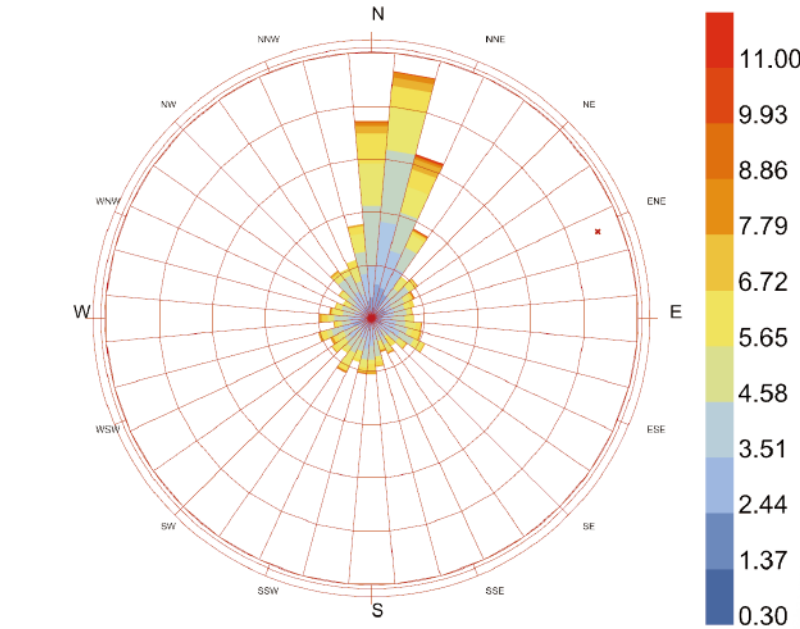
UTCI (°C)	> 46	38 to 46	32 to 38	26 to 32	9 to 26
Stress classes	Extreme heat stress	Very strong heat stress	Strong heat stress	Moderate heat stress	No thermal stress
Abbr.	EHS	VSHS	SHS	MHS	NTS

Source: Błażejczyk et al. (2013).



Outdoor Comfort Analysis + CFD Simulation Winter

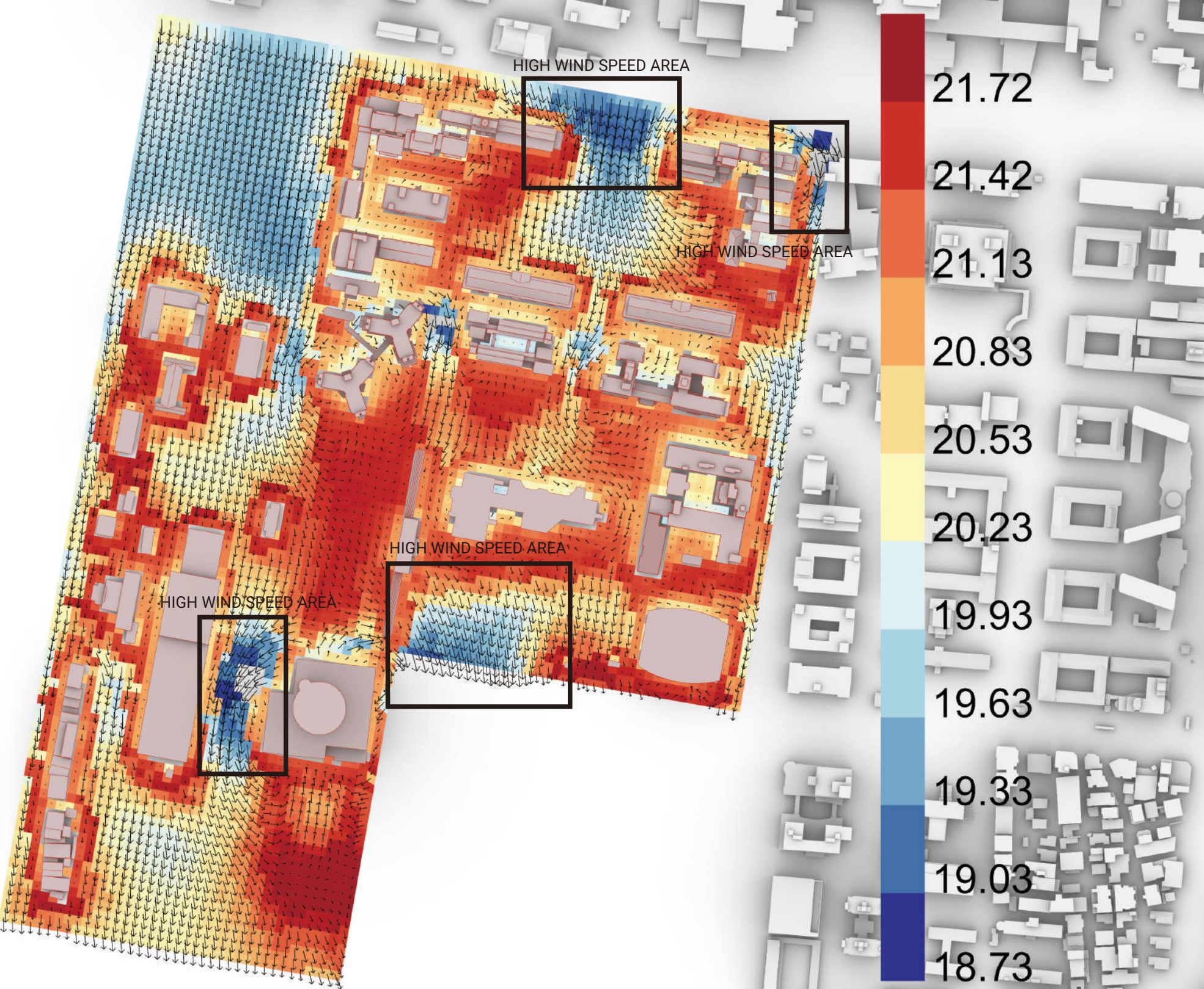
Time Period: 12/1-2/28 0-23
 Main Wind Direction: 10(Nne)
 Max Wind Speed: 11.0 M/S
 Utci: 18.73-21.72°C



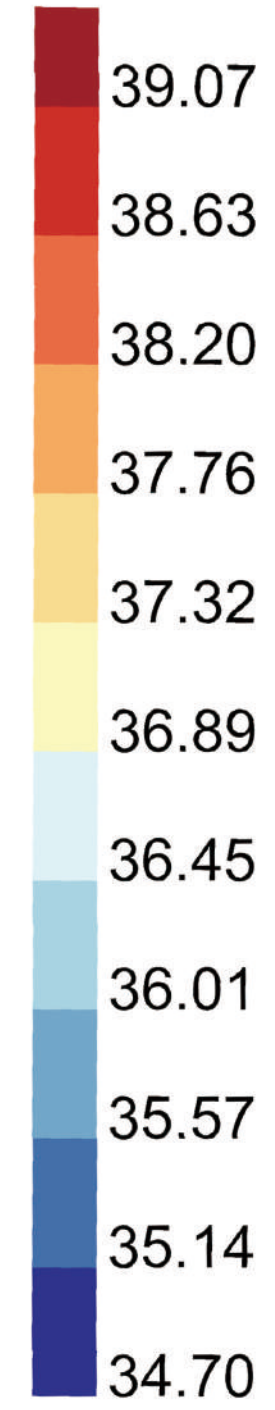
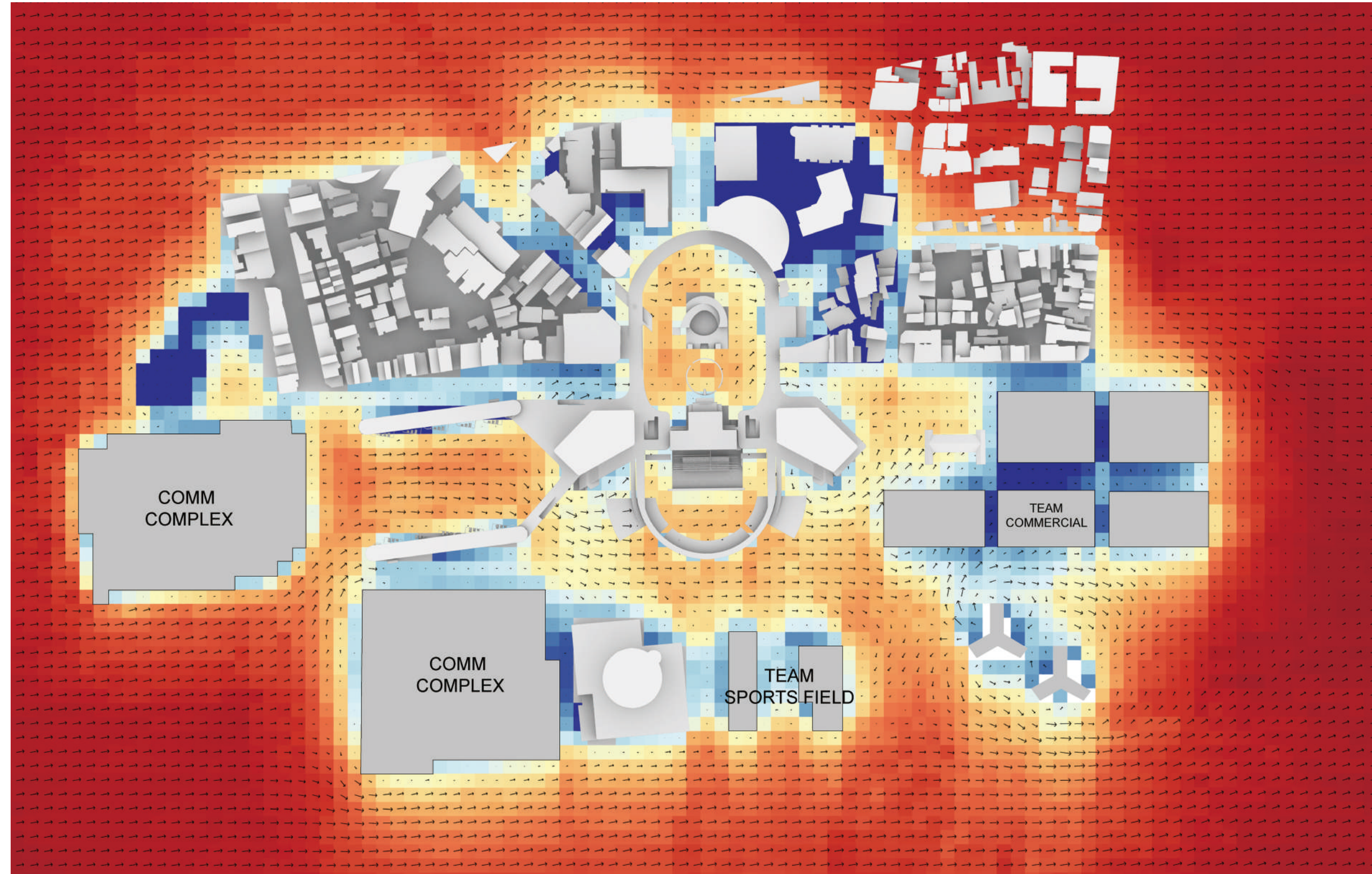
Wind Speed (m/s)
 city: Tainan
 country: TWN
 time-zone: 8.0
 source: Custom-593580
 period: 12/1 to 2/28 between 0 and 23 @1
 Calm for 0.46% of the time = 10 hours.
 Each closed polyline shows frequency of 2.3% = 50 hours.

UTCI (°C)	> 46	38 to 46	32 to 38	26 to 32	9 to 26
Stress classes	Extreme heat stress	Very strong heat stress	Strong heat stress	Moderate heat stress	No thermal stress
Abbr.	EHS	VSHS	SHS	MHS	NTS

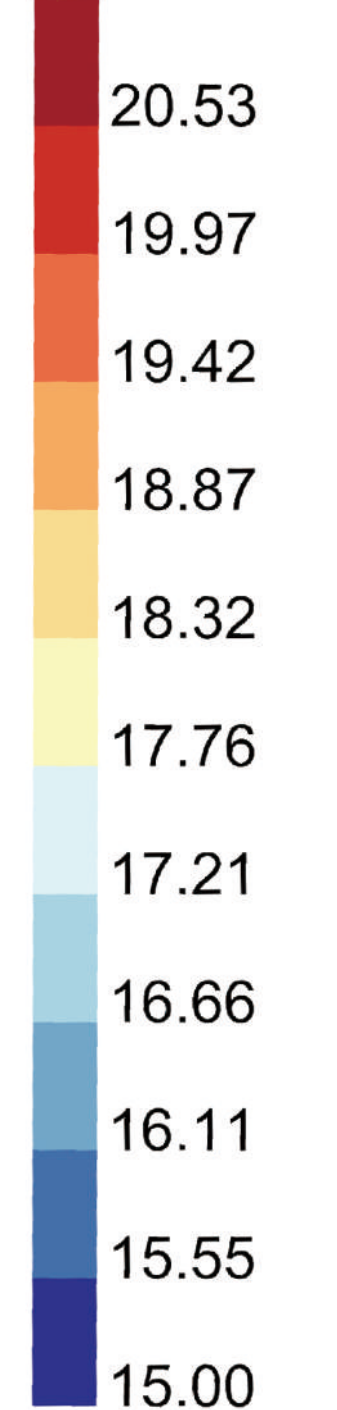
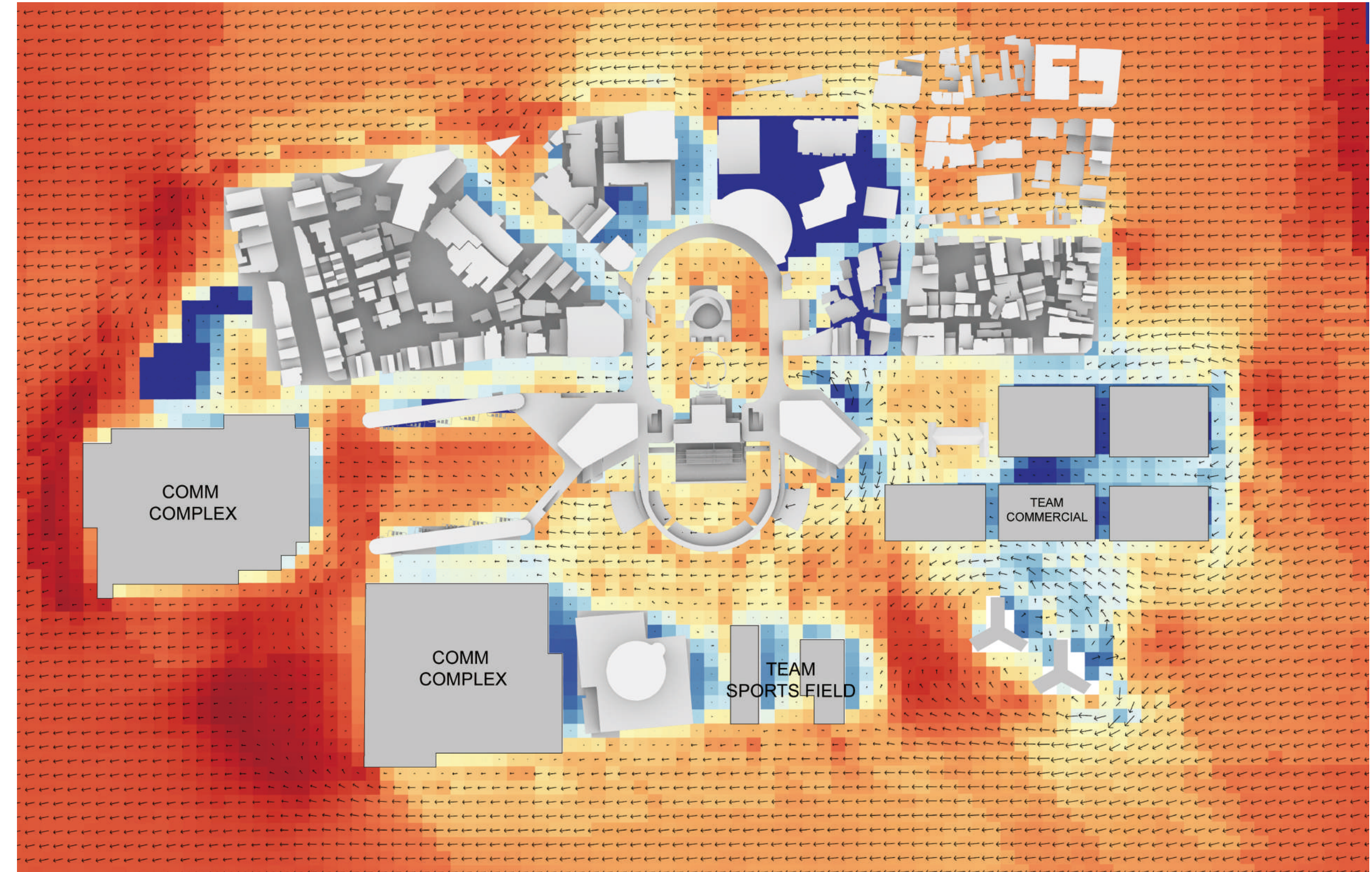
Source: Błażejczyk et al. (2013).



Post Design Review
Summer



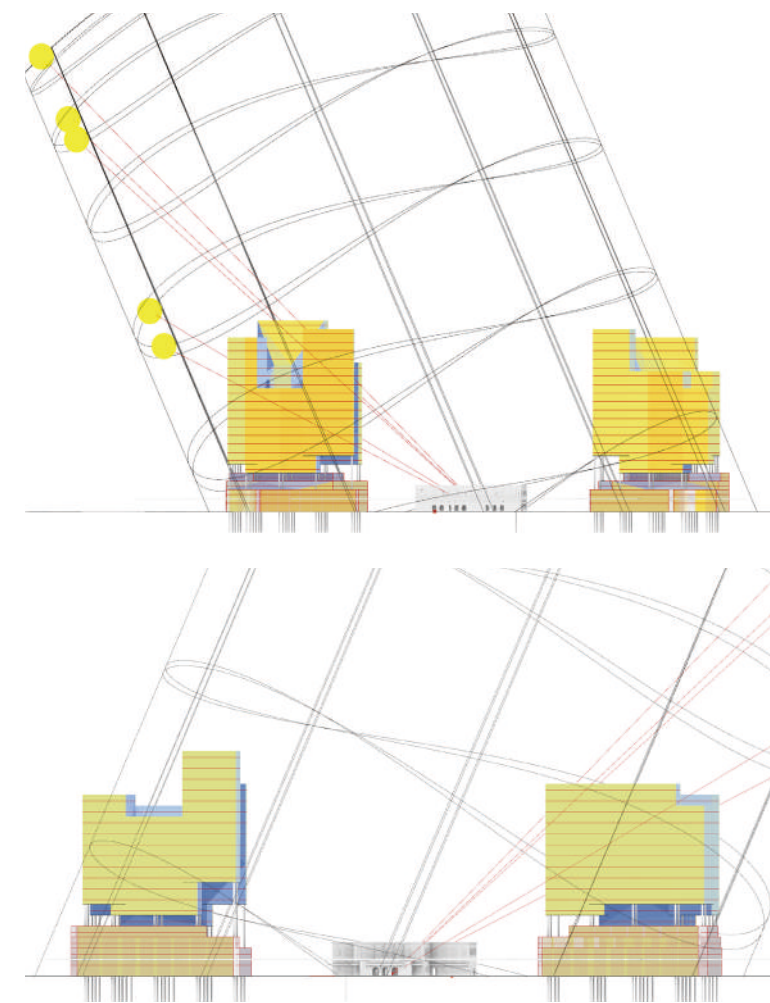
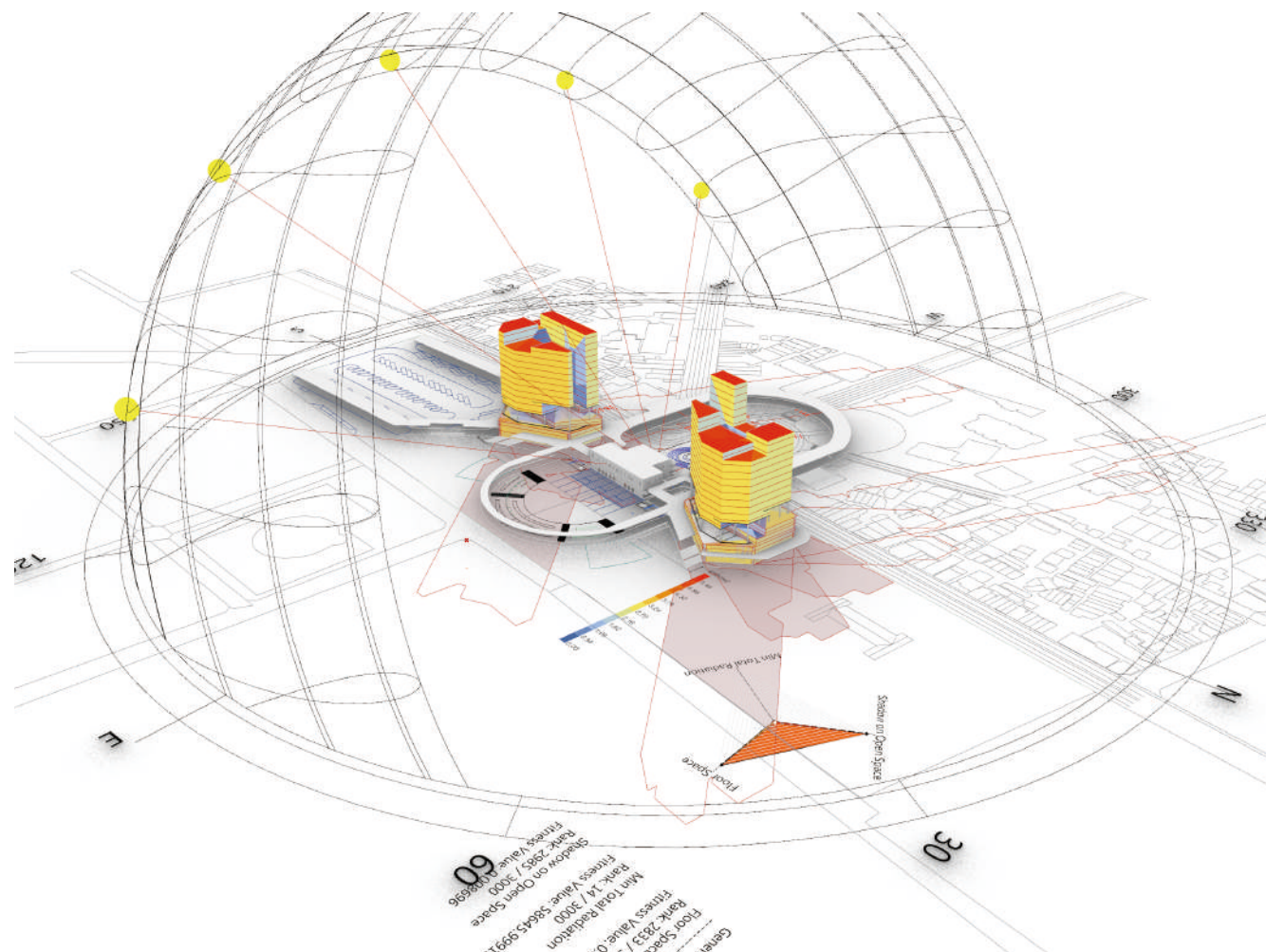
Post Design Review
Winter



Tainan Station Renovation

Tower Massing Optimization Type 01

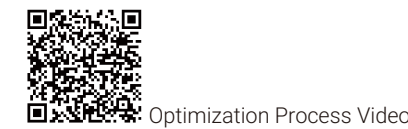
After the railway was moved underground, the original track land became a large area available for development—a new virgin land in the city center that inevitably invites large-scale projects. However, to ensure that development does not negatively impact the physical environmental quality of the open spaces and green areas surrounding the railway station, optimization methods are employed. These methods aim to maximize land utilization (BCR/FAR) while minimizing environmental damage to the land. By generating thousands of massing iterations through computational evolution and analyzing them to identify the optimal solution set, I was able to make a subjective selection of the most suitable massing. This chosen form then served as the foundation for further design development.



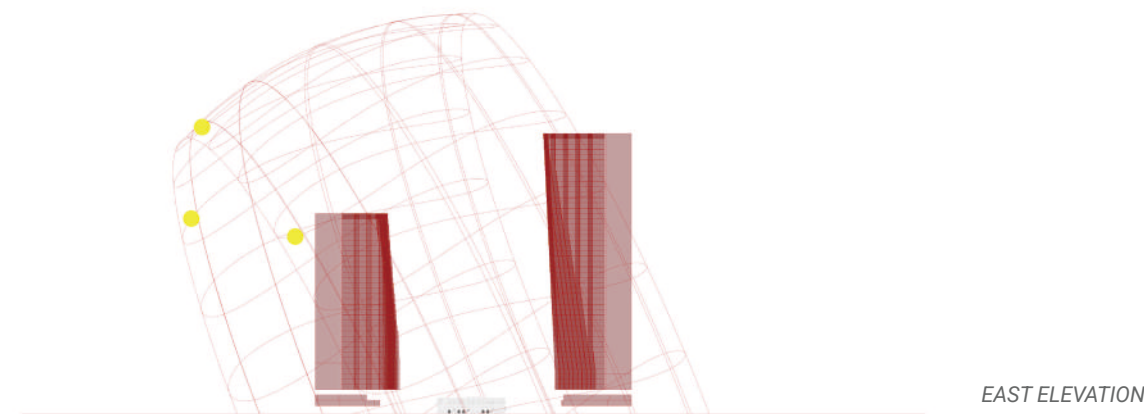
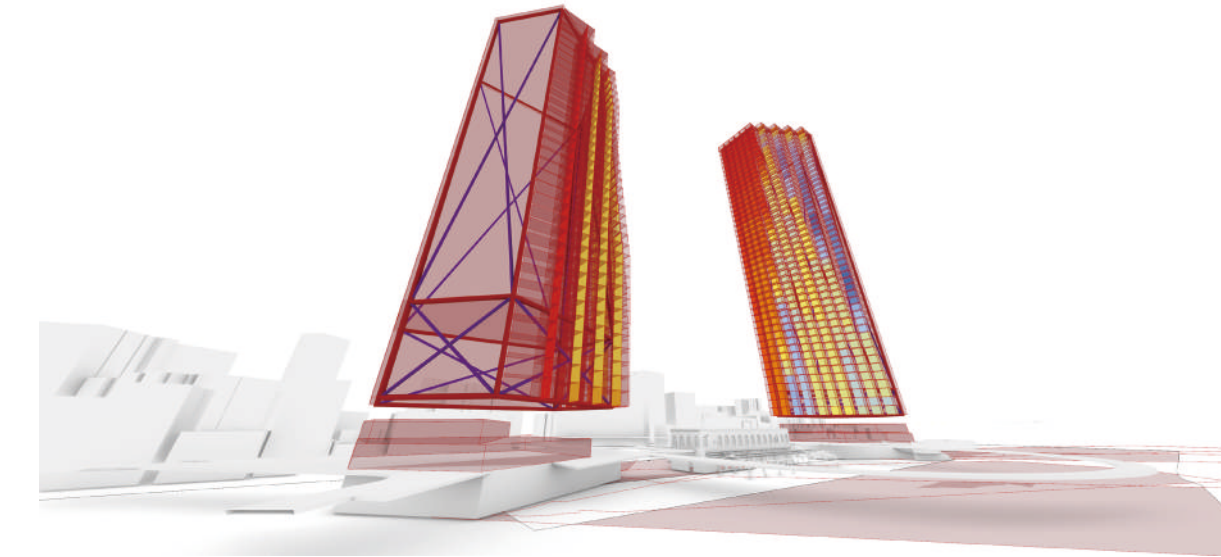
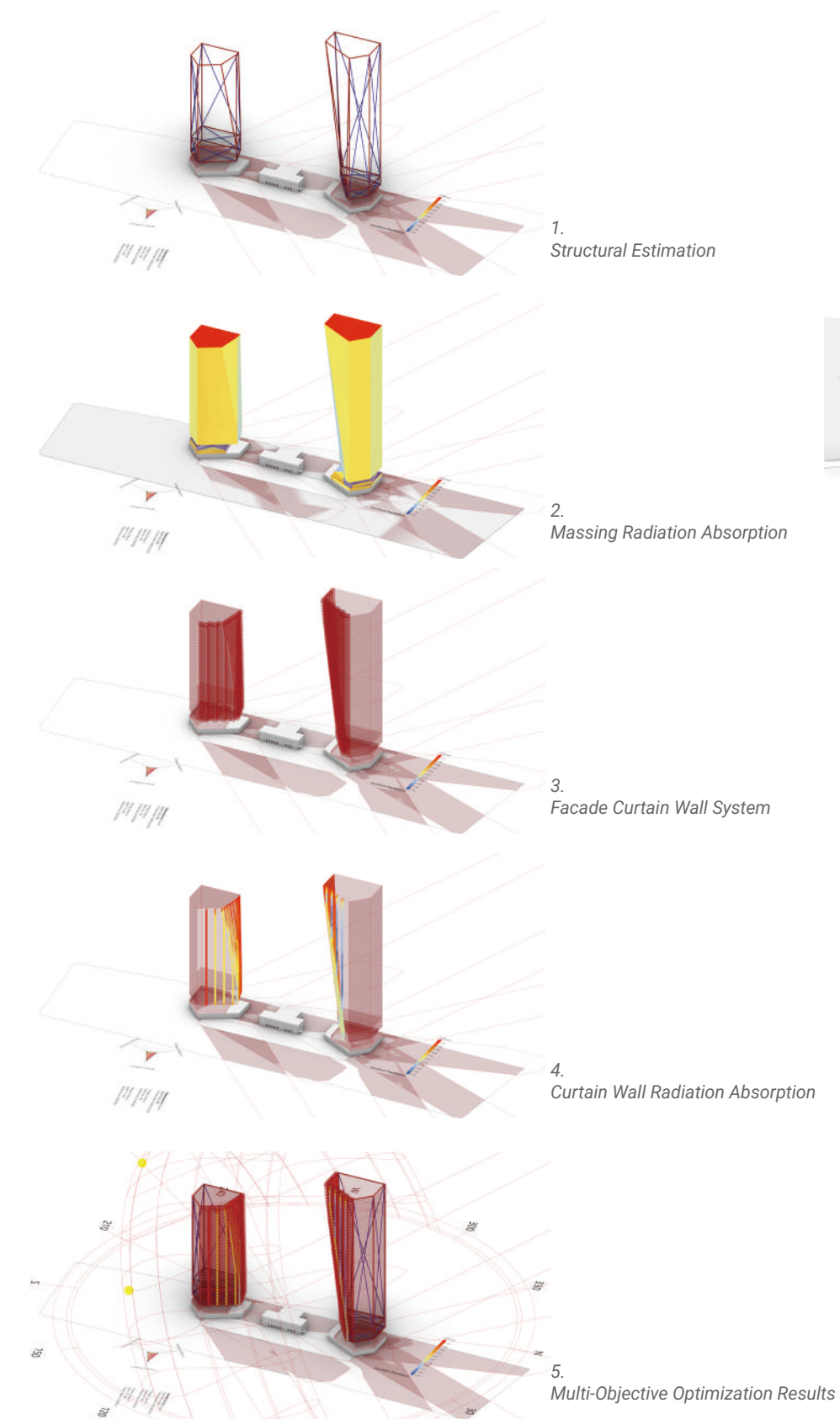
Tainan Station Renovation

Tower Massing Optimization Type 02

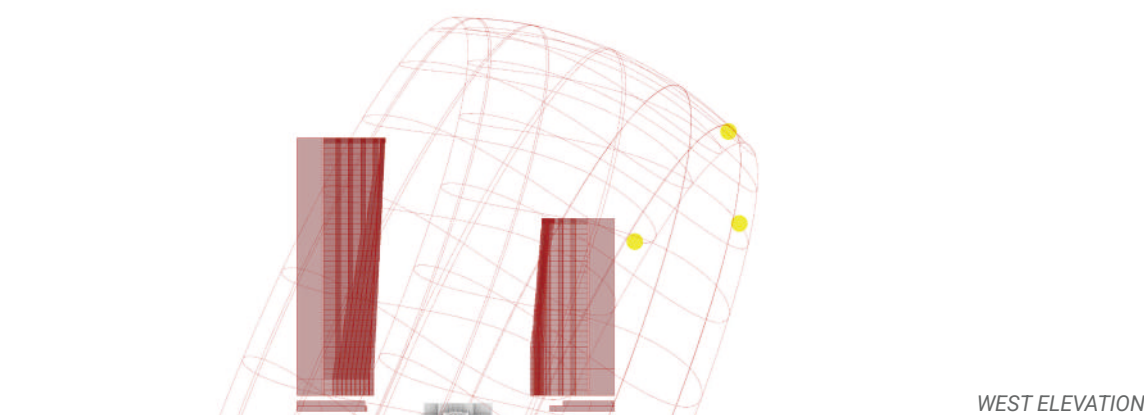
In the optimization of high-rise buildings, even slight variations in massing can lead to significant changes in sustainability-related data. By simultaneously estimating structural materials, building energy absorption, and facade heat absorption, a multi-objective optimization approach allows for the best balance between these demands. This method offers greater logic and adaptability compared to traditional approaches.



Optimization Process Video



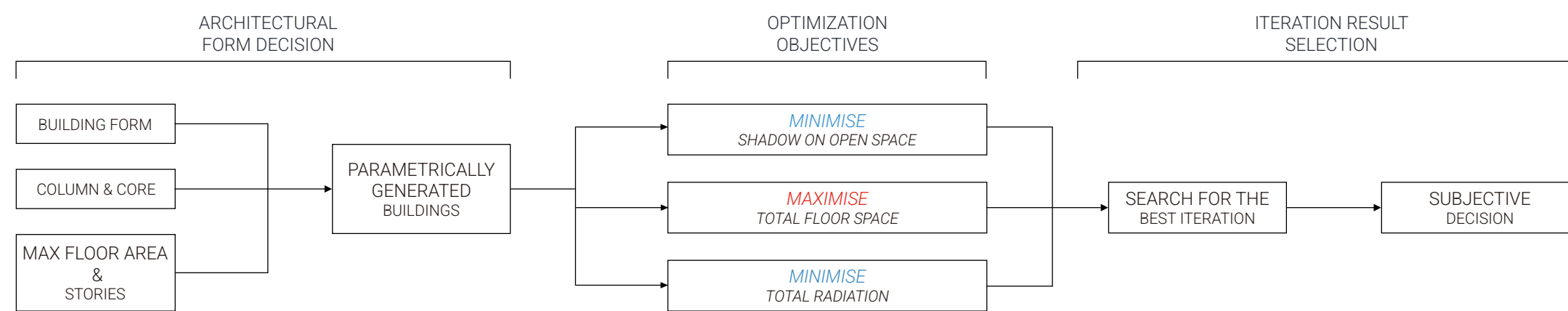
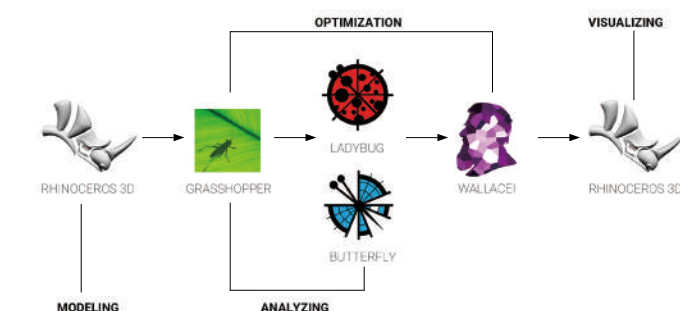
EAST ELEVATION



WEST ELEVATION



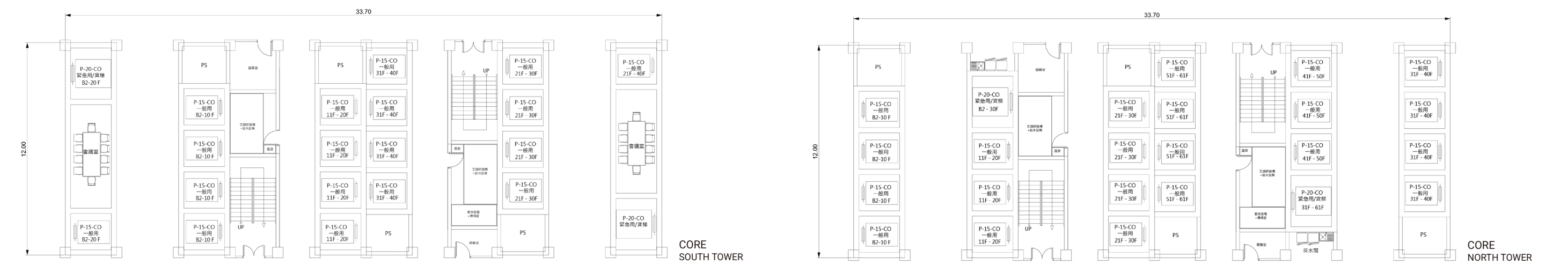
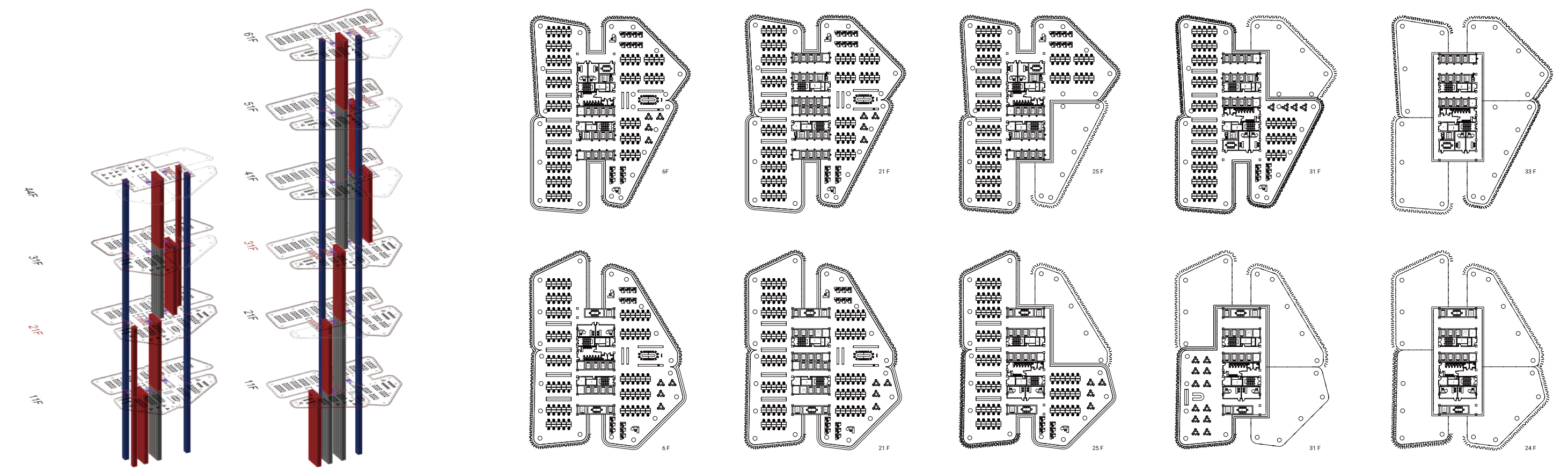
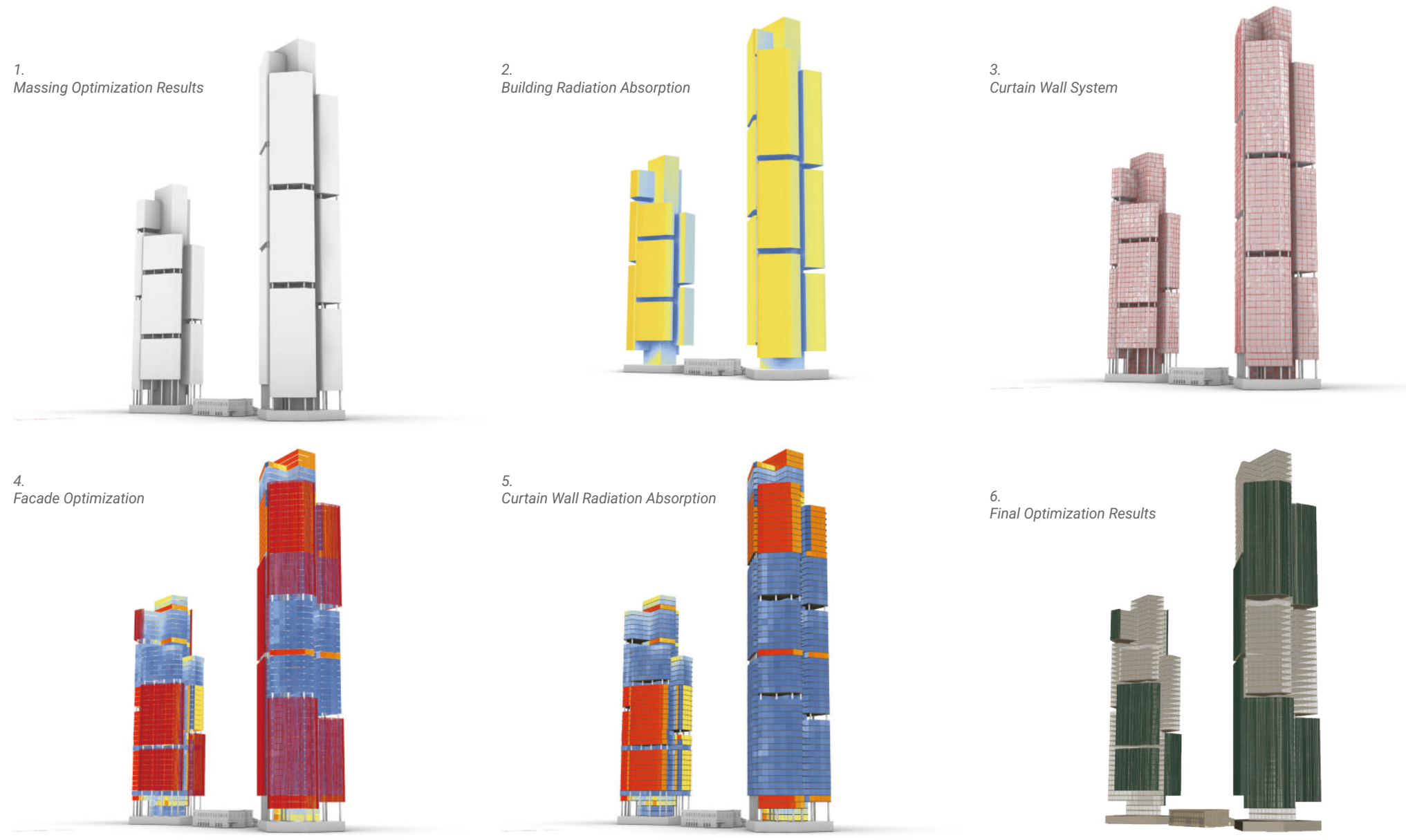
Optimization Process Video



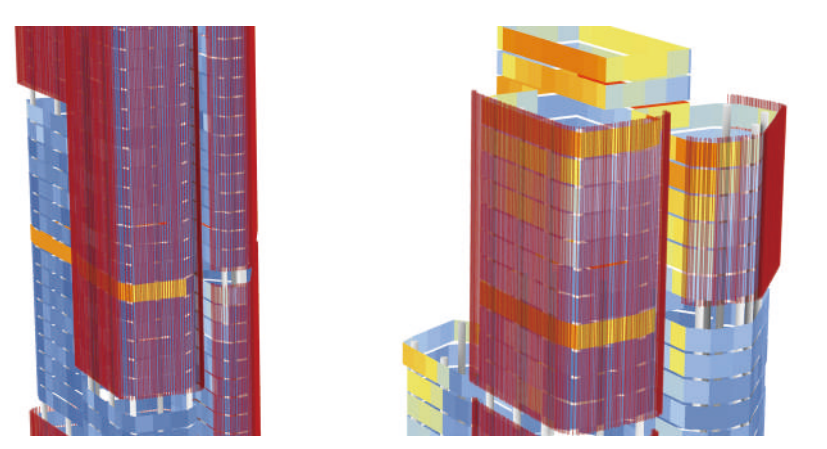
Tainan Station Renovation

Tower Massing Optimization Type 03

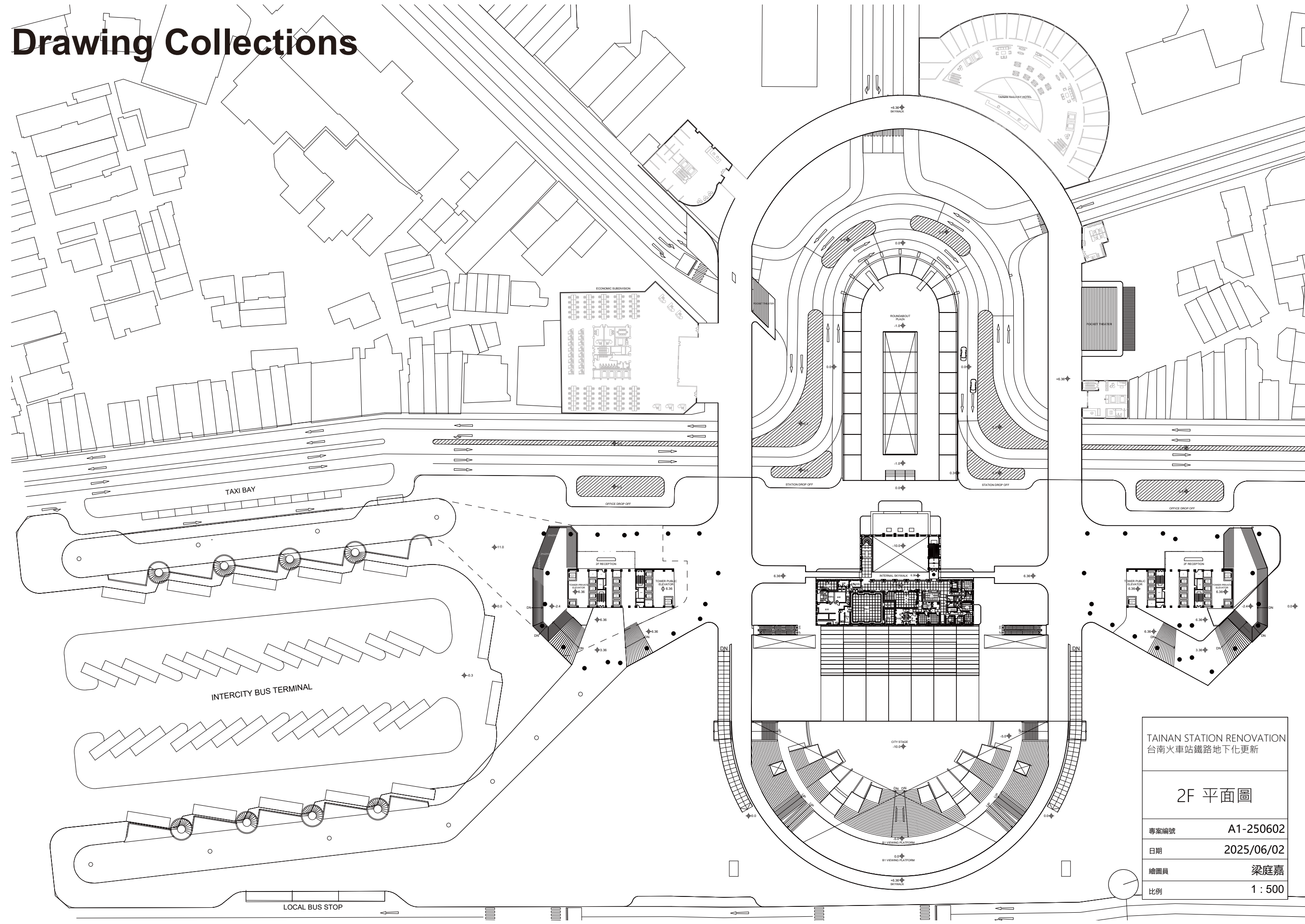
For the final version of Tower Massing Optimization, a more detailed approach was applied in both massing variation and computational methods. The process was divided into two phases: massing optimization and facade optimization. Based on the structural core of the tall building, the massing was divided and subjected to multi-objective optimization under local building code parameters (such as building height, floor area, number of vertical circulation elements, emergency floors, etc.). Following the results of massing optimization, facade optimization was carried out, focusing on changes in facade systems and the configuration of facades in high sunlight areas. This facade approach aimed to achieve energy efficiency while reducing material usage.



In the facade optimization phase, the design process prioritized both environmental performance and architectural expression. By analyzing solar radiation and exposure levels, facade systems were strategically adjusted to enhance shading in high-exposure areas while maximizing daylight penetration where needed. Parametric design techniques were employed to refine panel arrangements, ensuring an optimal balance between energy efficiency, material usage, and aesthetic coherence.



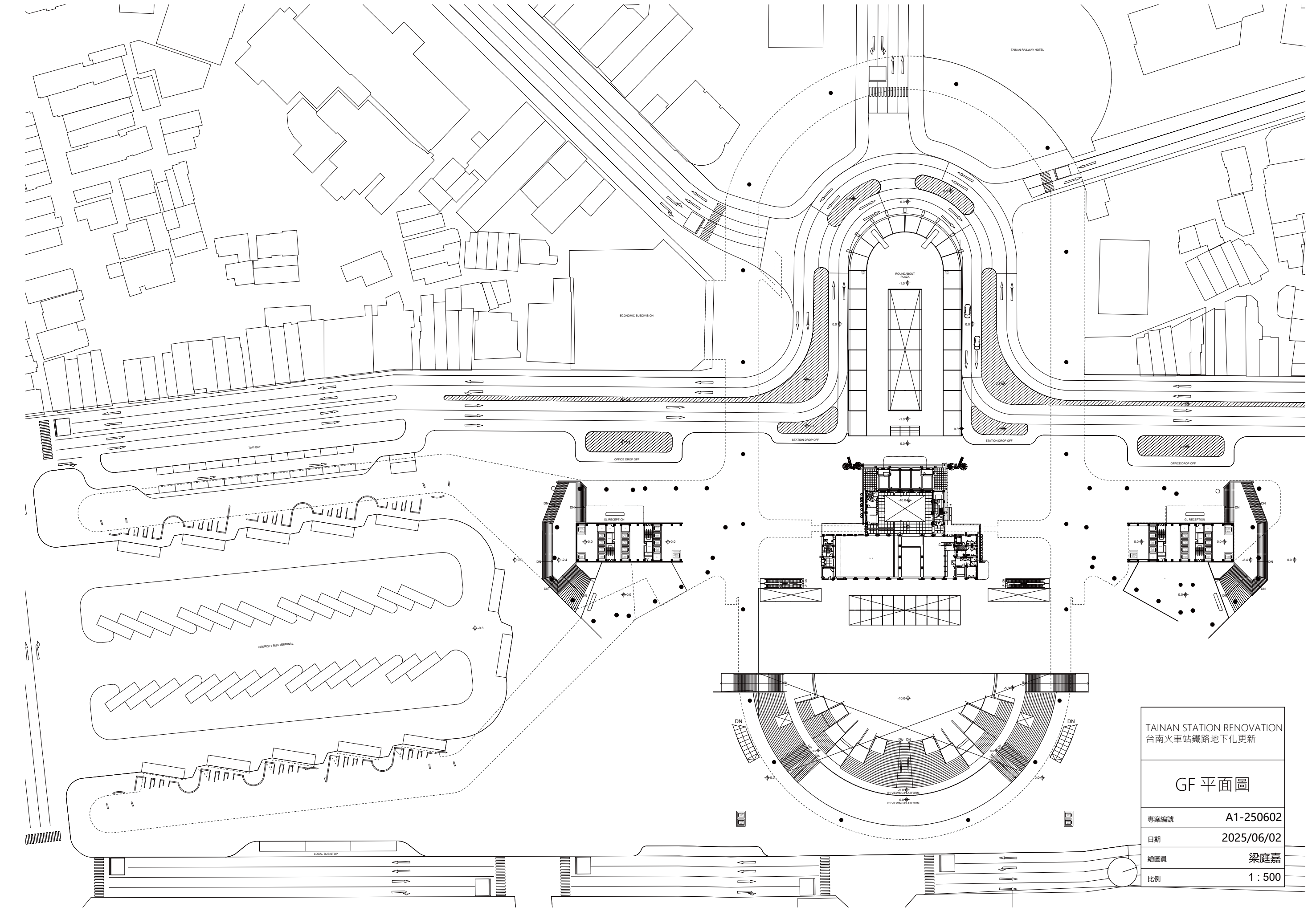
Drawing Collections



TAINAN STATION RENOVATION
台南火車站鐵路地下化更新

2F 平面圖

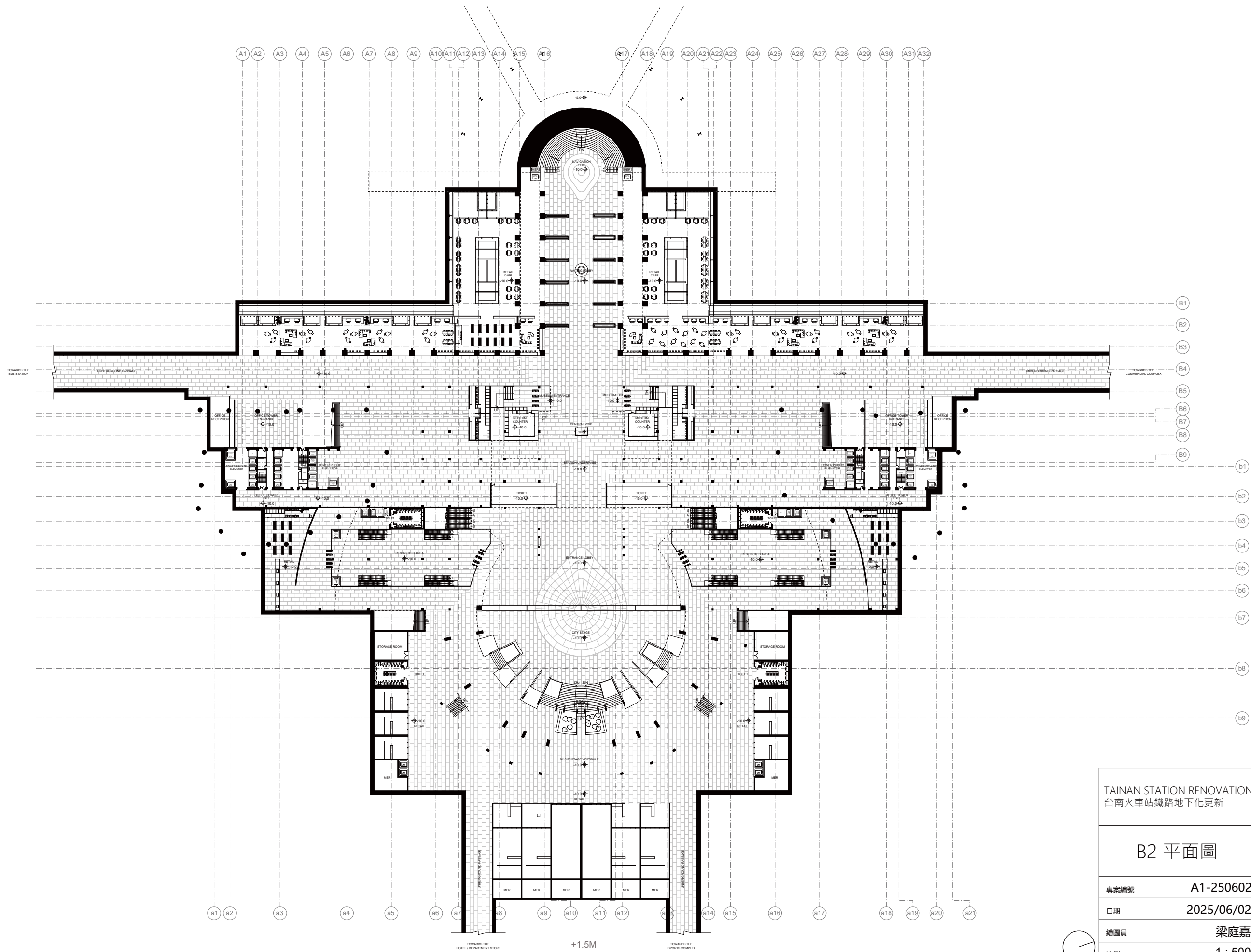
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日期 2025/06/02
繪圖員 梁庭嘉
比例 1:500



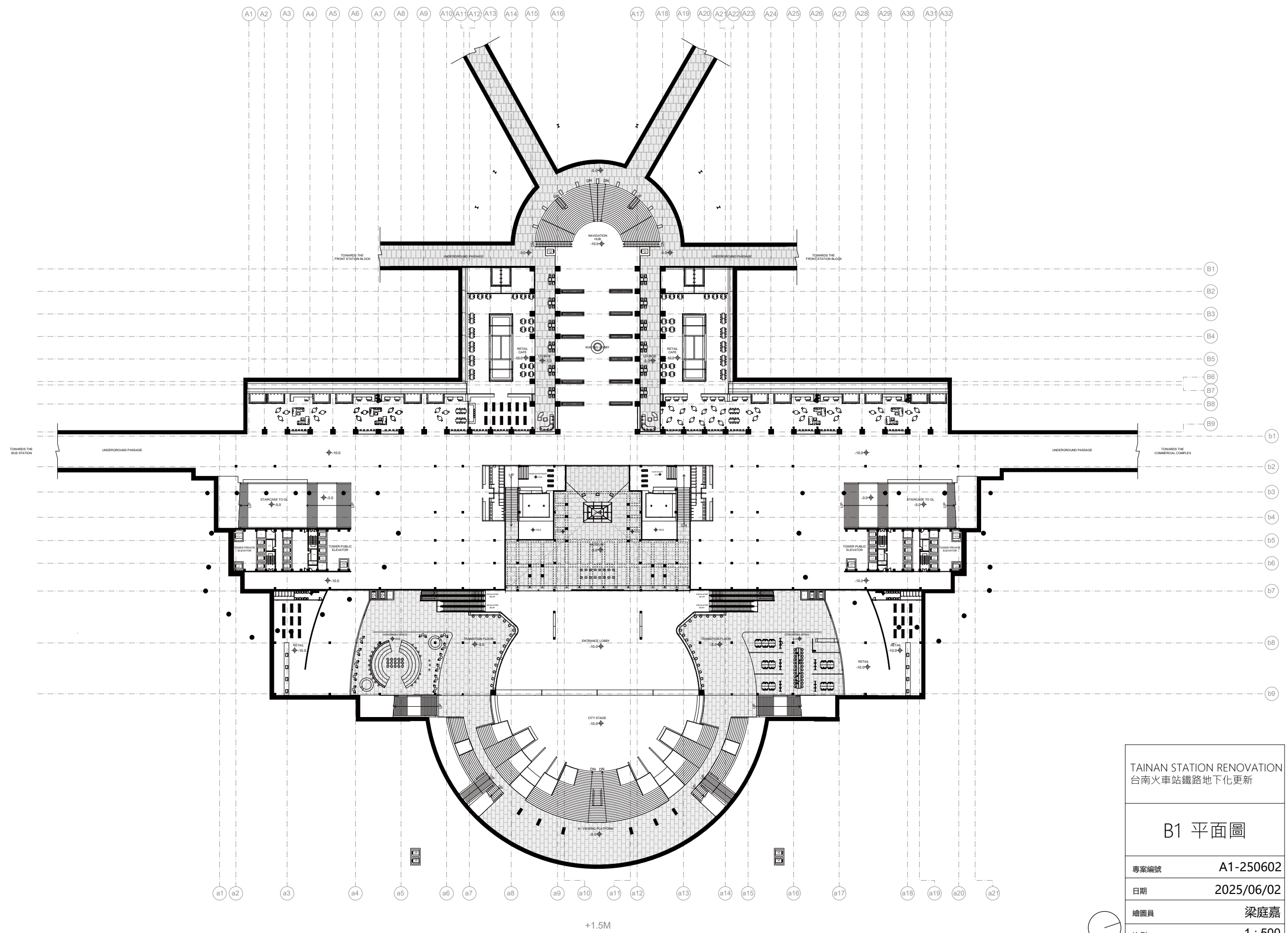
TAINAN STATION RENOVATION
台南火車站鐵路地下化更新

GF 平面圖

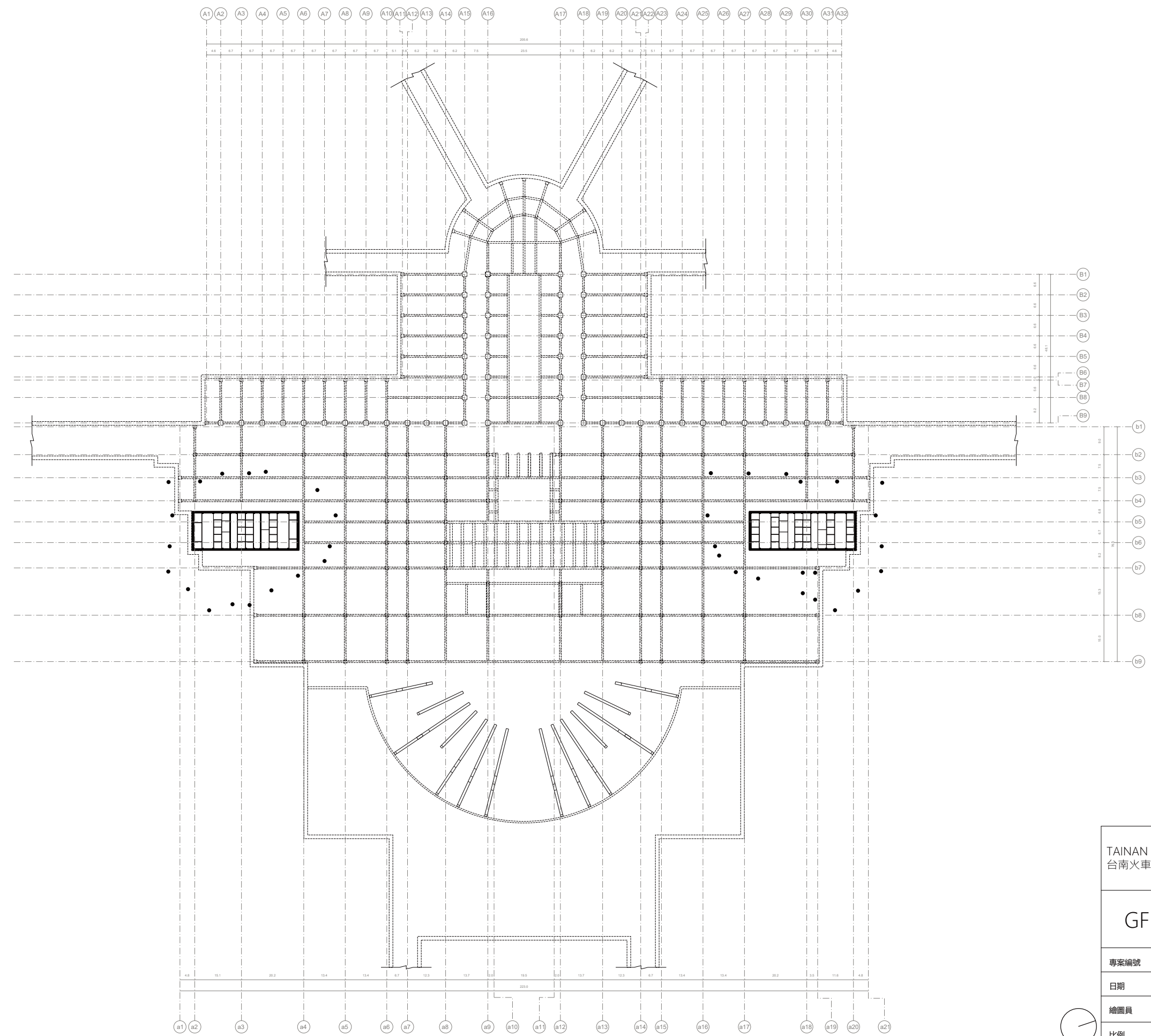
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日期 2025/06/02
繪圖員 梁庭嘉
比例 1:500



TAINAN STATION RENOVATION 台南火車站鐵路地下化更新	
B2 平面圖	
專案編號	A1-250602
日期	2025/06/02
繪圖員	梁庭嘉
比例	1 : 500



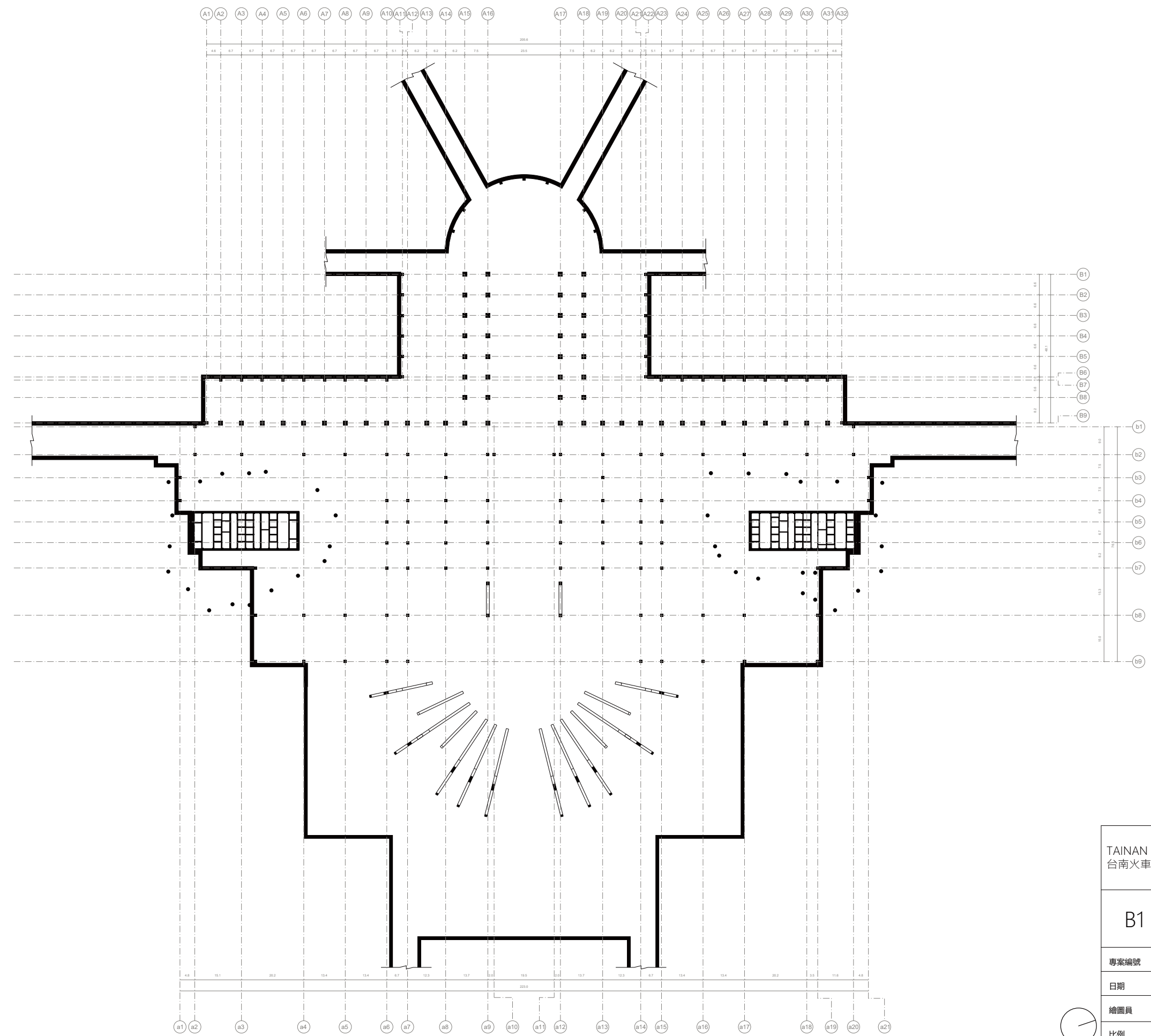
TAINAN STATION RENOVATION 台南火車站鐵路地下化更新	
B1 平面圖	
專案編號	A1-250602
日期	2025/06/02
繪圖員	梁庭嘉
比例	1 : 500



TAINAN STATION RENOVATION
台南火車站鐵路地下化更新

GF 結構平面圖

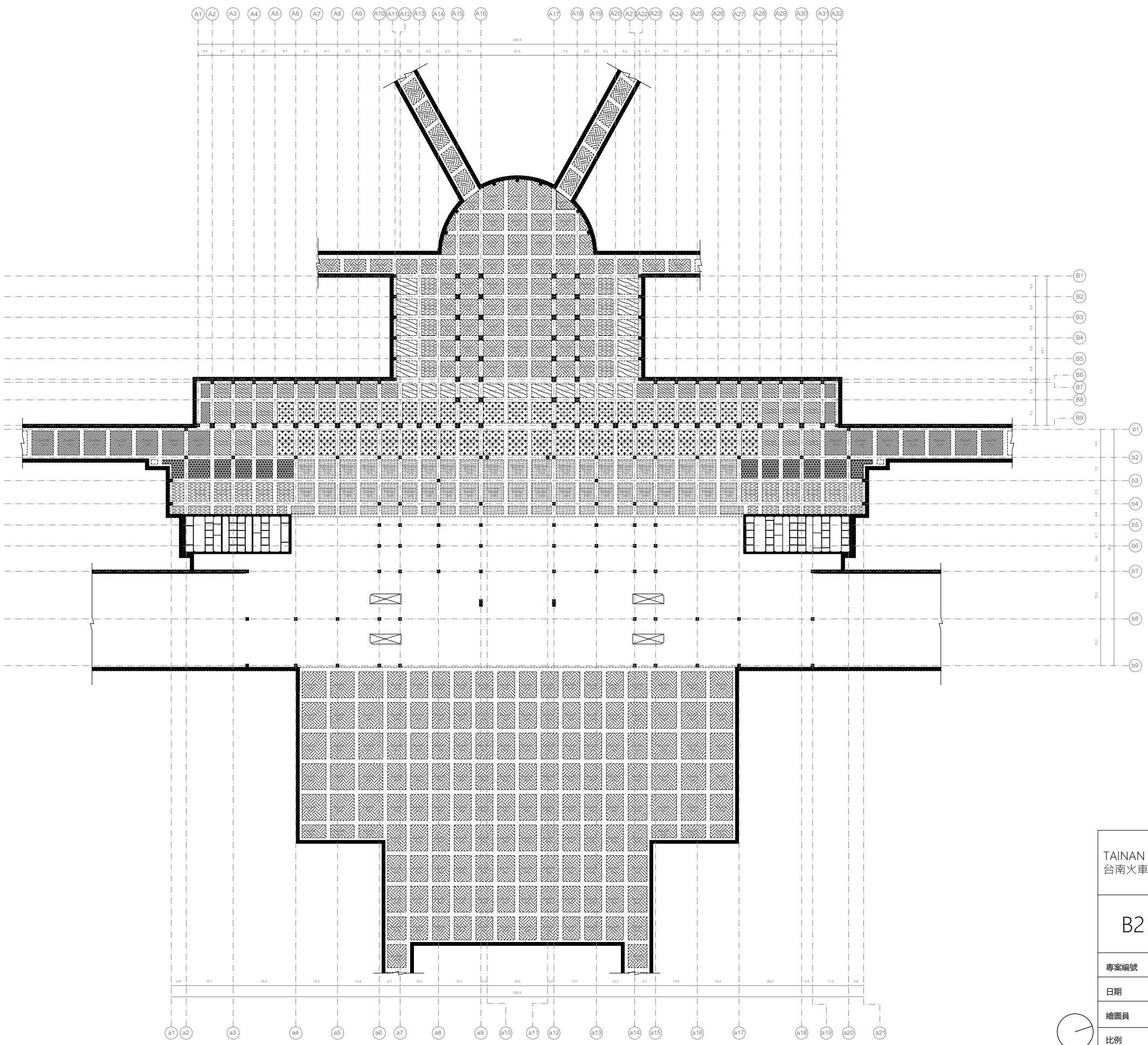
專案編號	A1-250605
日期	2025/06/05
繪圖員	梁庭嘉
比例	1 : 600



TAINAN STATION RENOVATION
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B1 結構平面圖

專案編號	A1-250605
日期	2025/06/05
繪圖員	梁庭嘉
比例	1 : 600



TAINAN STATION RENOVATION
台南火車站鐵路地下化更新

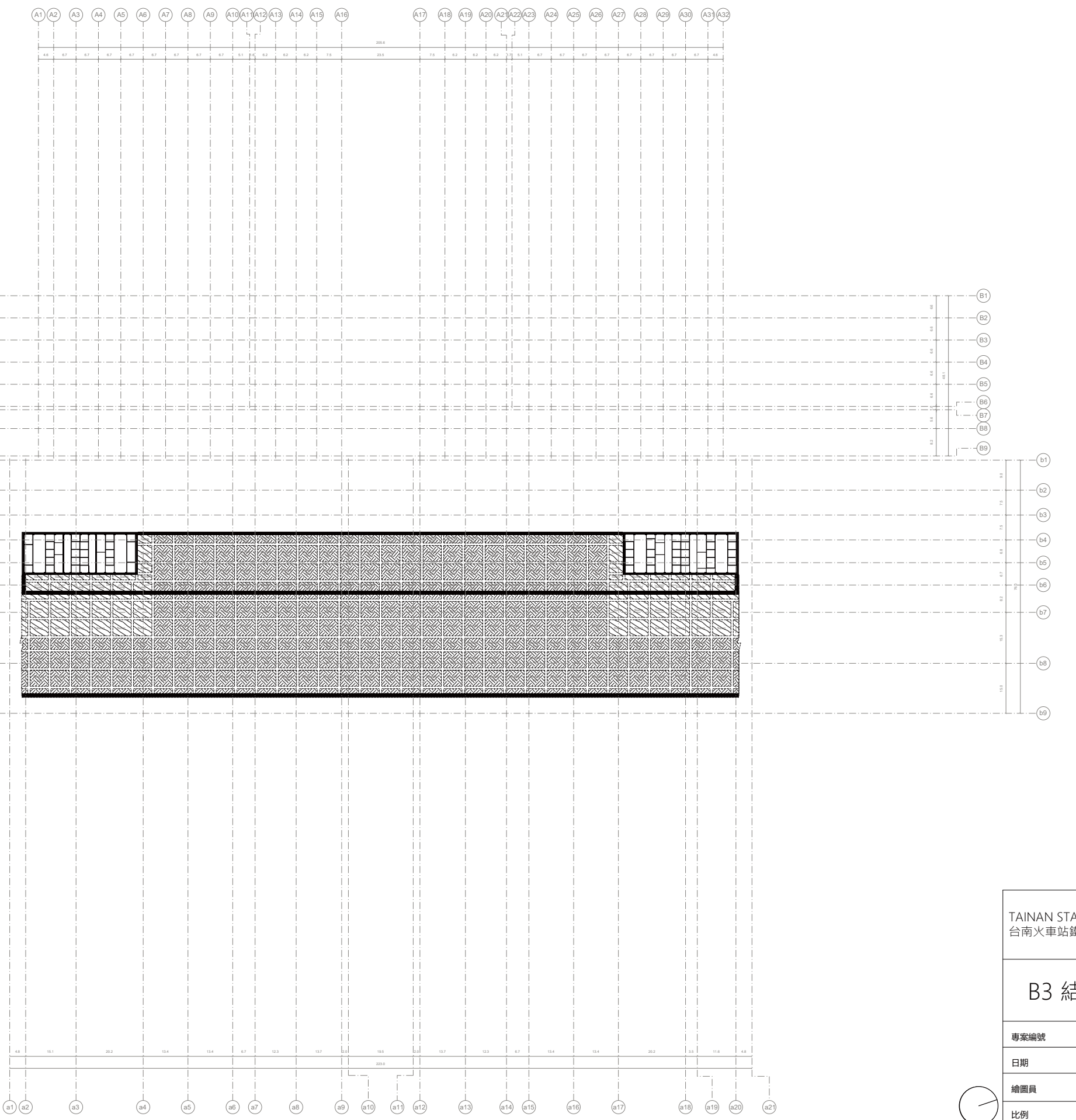
B2 結構平面圖

專案編號: A1-250605
日期: 2025/06/05
繪圖員: 梁庭嘉
比例: 1 : 600

一日設計用水量 = 各類空間總樓地板面積 * 日均用水量 * 人員密度
所需儲水量 = 一日設計用水量 * 35-50%

空間類別	日均用水量	人員密度(人/平方米)	樓板面積(平方米)	一日設計用水量(立方米)
店舖	100	0.16	1263	20.2
劇場	30	0.5	6272	94.1
餐廳	30	1	8435	253.1
辦公室	120	0.2	97153	2331.7
百貨	3	1	8136	24.4

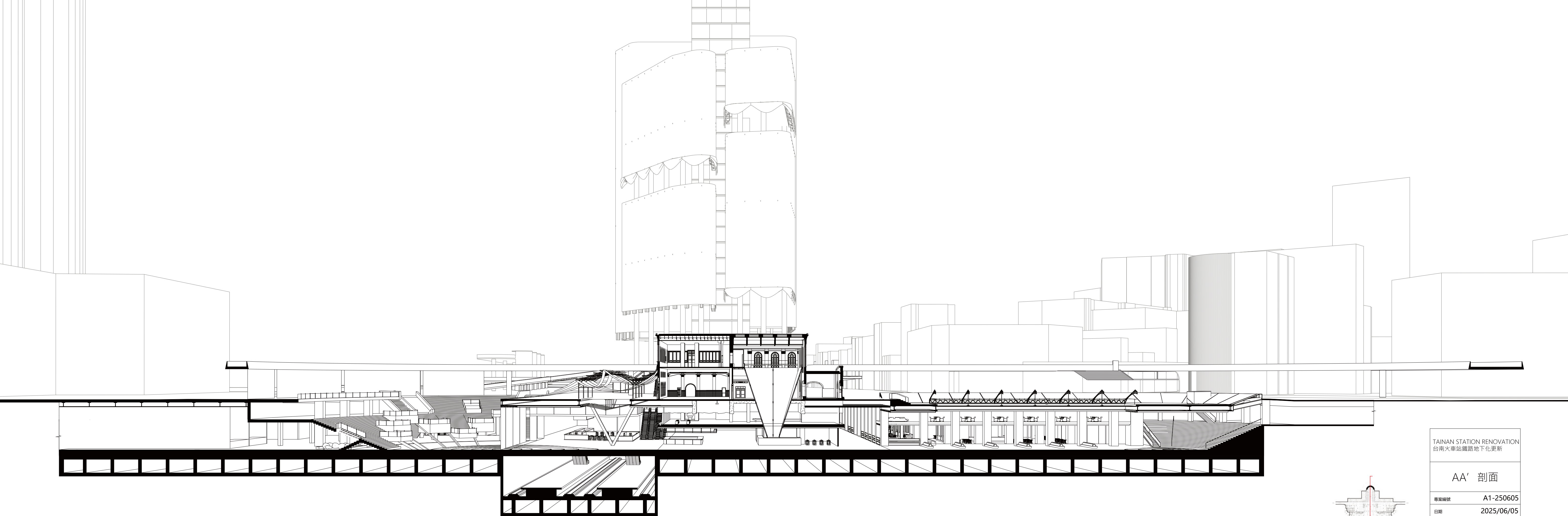
所需儲水量 = 一日設計用水量 * 35-50%
= (20.2 + 94.1 + 253.1 + 2331.7 + 24.4) * 40%
= **1089.4 立方米**



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B3 結構平面圖

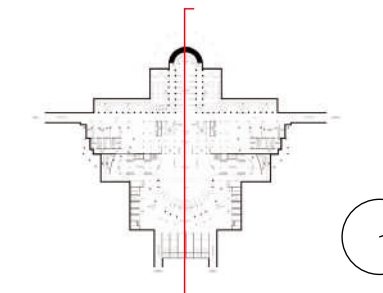
專案編號: A1-250605
日期: 2025/06/05
繪圖員: 梁庭嘉
比例: 1 : 600

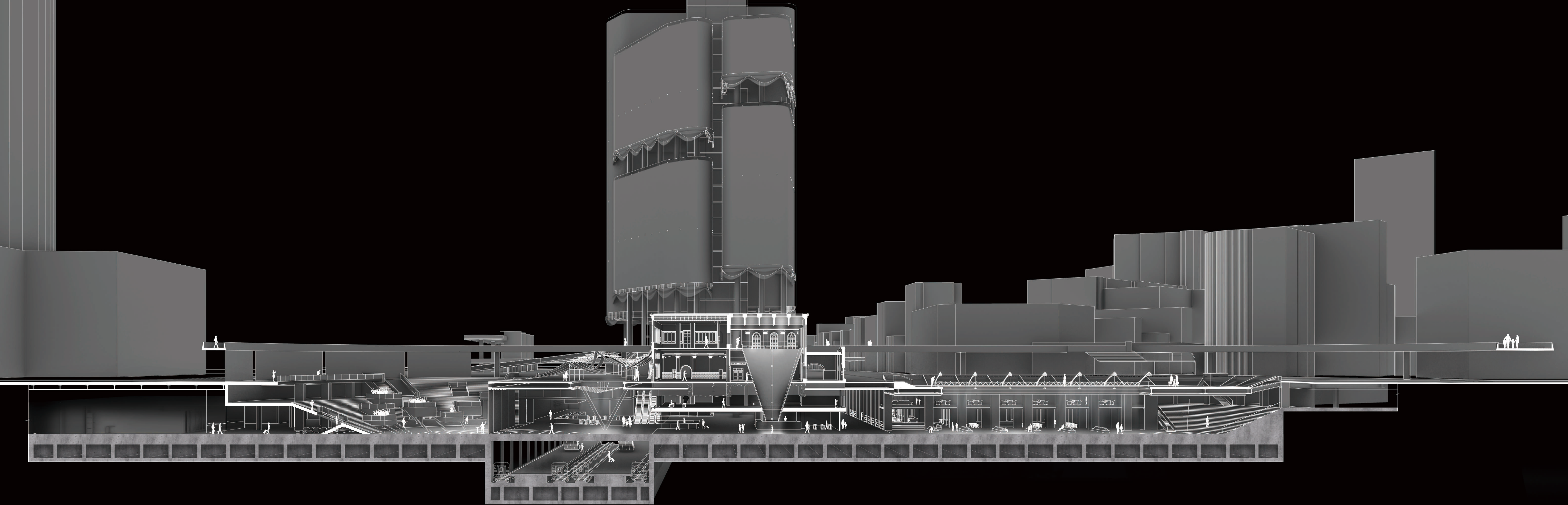


TAINAN STATION RENOVATION
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AA' 剖面

專案編號	A1-250605
日期	2025/06/05
繪圖員	梁庭嘉
比例	1 : 300

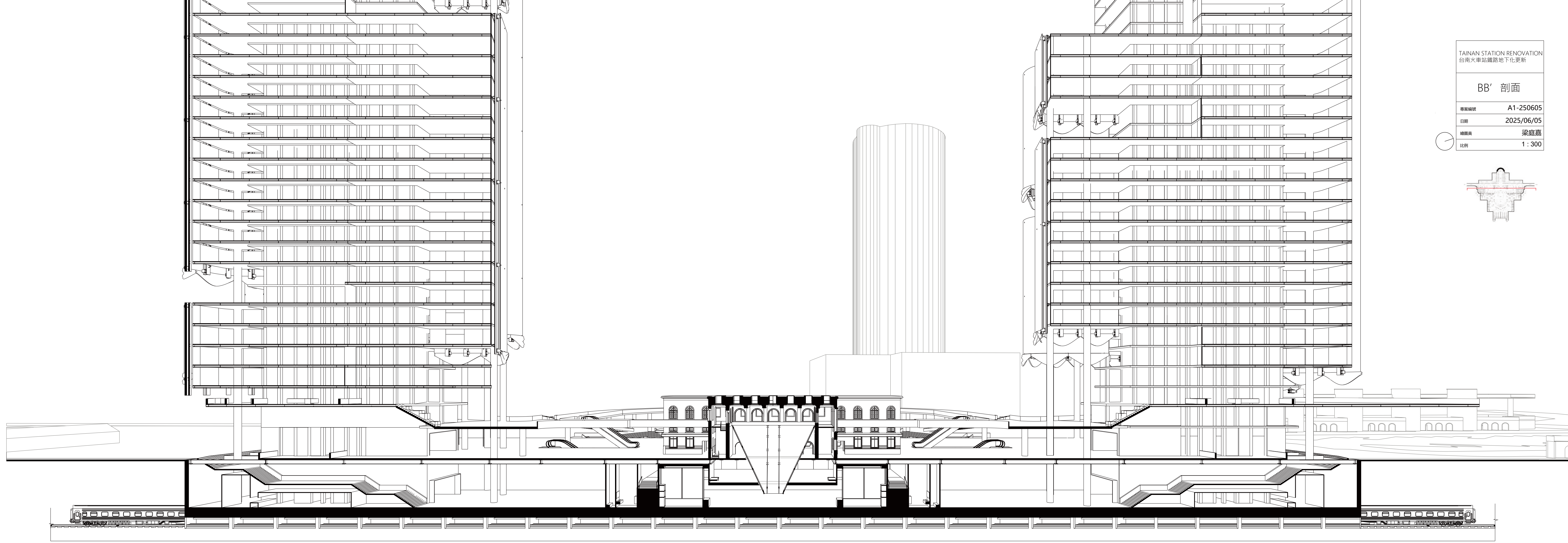
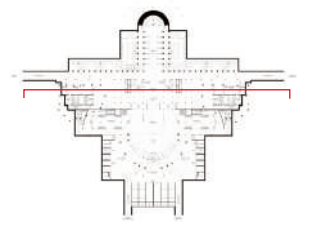


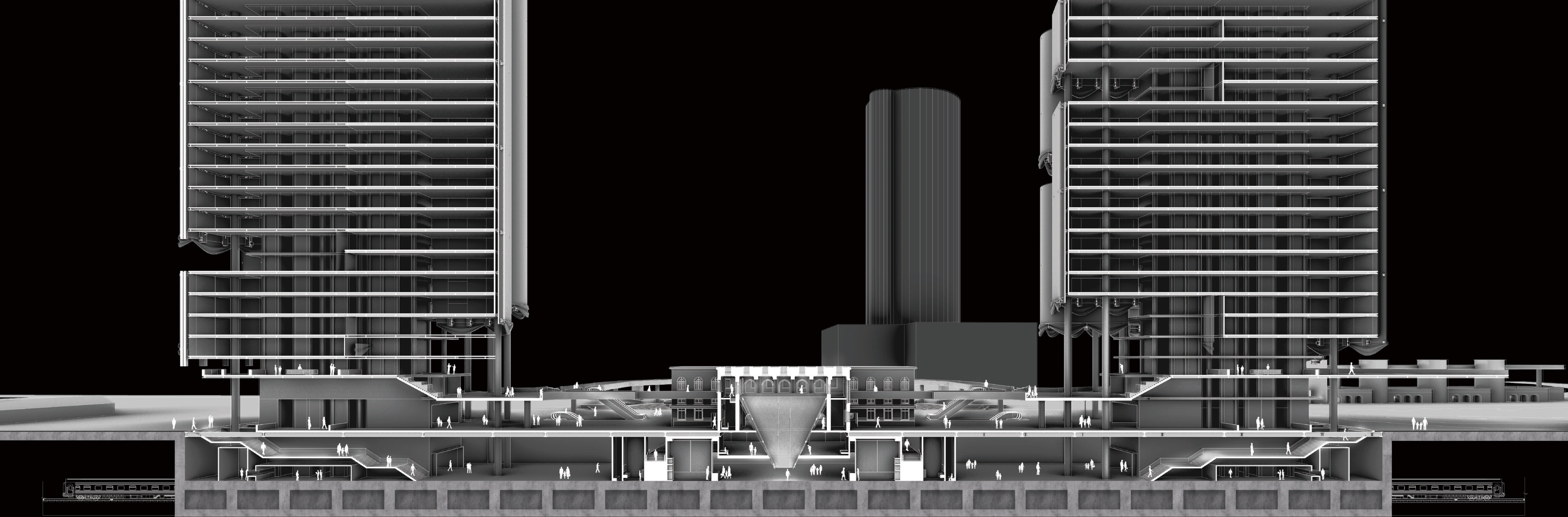


TAINAN STATION RENOVATION
台南火車站鐵路地下化更新

BB' 剖面

專案編號	A1-250605
日期	2025/06/05
繪圖員	梁庭嘉
比例	1:300







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Links & Contact



View Project

EDUCATION



National Cheng Kung University
Department Of Architecture

EXPERIENCE



UNStudio
5 Month Internship 2025-26



April Yang Design Studio
2 Month Internship 2024

AWARDED

TAINAN STATION RENOVATION

- 2025 Golden Pin Concept Design Award
- 2025 Taiwan International Student Design Competition
- 2025 Taiwan Youth Exhibition
- 2025 Inspireli Award
- 2025 Asia United Architecture Association Competition
- 2024 Kaohsiung Art Institute Of Spatial Design Award



