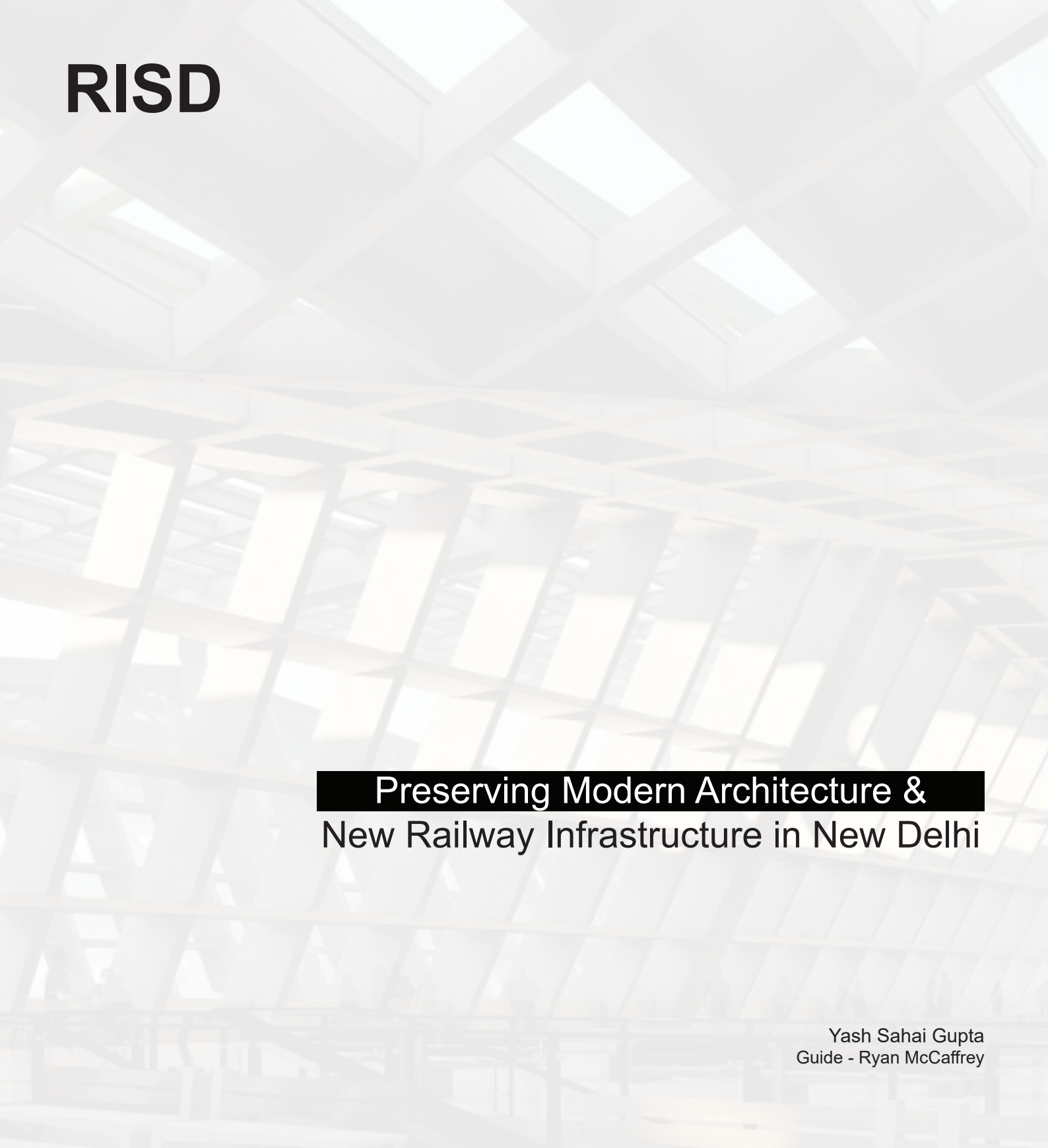




RISD



**Preserving Modern Architecture &
New Railway Infrastructure in New Delhi**

Yash Sahai Gupta
Guide - Ryan McCaffrey



Preserving Modern Architecture & New Railway Infrastructure in New Delhi

New Delhi/ Naiee Dilli is one of the cities in the world which has been destroyed and rebuilt 10 times since 3100BC. Starting with the name of Indraprastha and ending with Lutyens's Delhi in 1911AD. Currently, Delhi still shows the footprints of all the 10 destroyed cities. The major change happened during the Lutyens's planning and after the post-independence where India started getting engaged with the new construction technology with industrial materials which were introduced by the colonizers. The architecture of post-colonial Delhi was to change the image of a growing city to a developed city. An era where Indian cities were getting ready for globalization and welcoming outsiders to invest. The structure of these buildings were getting defined as experiments with the new shapes and techniques for future generation architects to inspire and continue the same with the concept of brutalism and old heritage buildings in India. This also started shaping the land usage and other neighboring buildings in society with relation to colonial radial city planning keeping heritage and modernism in the same bracket. Most of the building programs were the government's office, market spaces, exhibition spaces, hotels, and low-cost housing for the lower middle class of Delhi. But in 21st century India people and government have started forgetting about the importance of these buildings leading to demolition.

One of the examples can be New Delhi Railway Station building also known as NDLS or Paharganj side railway station building. The government is again demolishing this structure and pursuing a structure that is out of the context of New Delhi's architecture. Also, Railway stations in India are one of the oldest buildings across the nation which keeps getting retrofitted with new elements of today's building to look aesthetically up to date but, from inside the structure, space remains the same as it was during the British era. Across India old railway stations have been following the infrastructure as defined by the Britishers when they started developing railways during their rule across the country (India, Pakistan, and Bangladesh). In particular, the New Delhi railway station has been a critical point for India's redevelopment of Indian Railways. It is the second busiest station in India and lies in the capital of India.

My research aim can be framed under the light of studying these structures with their contrasting construction techniques and to know how railway stations can be improved by giving a new civic culture space including amenities and regulations. Reflecting the culture of the region while being an important civic node for efficient transportation of people and cargo around New Delhi and the rest of the country.



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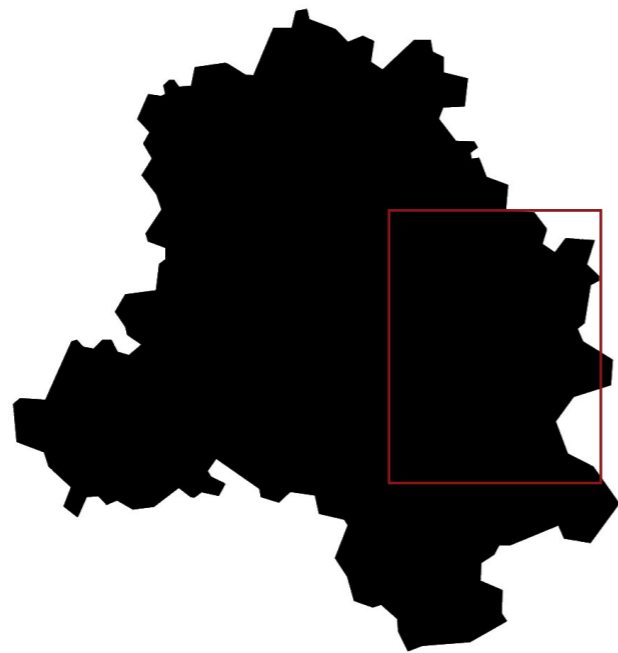
1

INTRODUCTION

The region for my research is based in New Delhi's central part which was designed by Edwin Lutyens in the 1930s during the British era when the capital of India was getting moved from Kolkata. The planning of this Radial garden city during the British era defined the land-use patterns for New Delhi which included 3 major radial grids defining 3 major zones - the Bungalow zone, Government complex, and Commercial district.



India Map with New Delhi's location



New Delhi map with Central Delhi's location





Commercial District

Bungalow Zone

Government Complex

New Delhi's radial land-use map

In 1911 a decision was made by the colonizer's government to transfer the British India capital from Calcutta to Delhi. For this, a committee was set up and a site of 5 km down the south of a special area a.k.a old Delhi, around Raisaina Hill, was selected for the new administrative center for the country. A well-drained, healthy area between the Delhi Ridge and the Yamuna River, it provided ample room for expansion. Raisaina Hill, commanding a view of the entire area, stood about 50 feet (15 meters) above the plain, but the top 20 feet (6 meters) were blasted off to make a level plateau for the major government buildings and to fill in depressions. With this low acropolis as the focus, the plan for New Delhi was laid out.

The New Delhi plan was characterized by wide straight avenues, with trees in double rows on either side, that connected various points of interest and provided vistas of the surrounding area. The most prominent feature of the plan, aside from its diagonal road pattern, was the Rajpath, a broad central avenue that in present-day New Delhi stretches westward from the National Stadium, through the All India War Memorial Arch (popularly called the India Gate), to the Central Secretariat buildings and the Presidential House (Rashtrapati Bhavan). This is the main east-west axis; it divides New Delhi into two parts, with a large shopping and business district, Connaught Place, in the north and extensive residential areas in the south.



Demolition of Halls of Nation. It was built by Raj Rewal and Mahindra Raj in 1972 and demolished by the New Delhi government in 2017.



The present situation of New Delhi Railway Station, a view station's platform and surrounding structures built-in 1955.

The challenges that I am focusing on are the diminishing modern heritage and redevelopment of railway stations in India. The aim, through this research, is to preserve the existing modern heritage building, reconstruct the New Delhi Railway station, and the context around it.

Diminishing modern heritage is one of the rising topics in 21st century India where the people have started forgetting about the architecture which shaped the city between 1950-1990. There was a drastic change in the construction methods for buildings, from the concrete frame structure in 1955, influenced by colonizers leading to experimentation of concrete frame structure in large scale public buildings. Instead of preserving these buildings, the government is promoting architecture that does not support any regional specific influence and construction, leading to the demolition of these structures. One example is the demolition of the Hall of Nation-building which was once the only large space frame structure in the world, made of reinforced concrete.

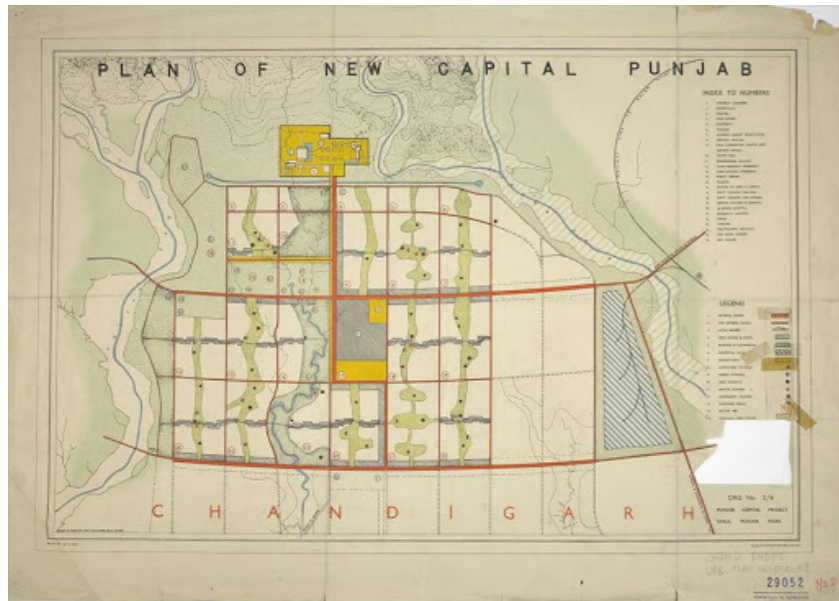
The second issue is the redevelopment of the New Delhi Railway Station (NDLS) where the government hasn't upgraded the station according to the new bye-laws and structural capability. The station still uses the same ideas which were stated by the colonizers during their rule.

2

**DIMINISHING MODERN
HERITAGE IN NEW DELHI**



Punjab and Haryana state high court or palace of justice designed by Le Corbusier.



Plan of Chandigarh city one of the union territories of India and capital of Punjab and Haryana state designed by Le Corbusier in the 1950s.



The Open Hand (La Main Ouverte) in Chandigarh is a frequent theme in Le Corbusier's architecture, a symbol for him of "peace and reconciliation. It is open to give and open to receive". Le Corbusier also stated that it was a recurring idea that conveyed the "Second Machine Age".

1950s

A new country was getting formed and govt saw an opportunity for globalization, to invite western ideas and infrastructure. Each building was an experiment for new shapes and techniques to influence future architects to respect heritage buildings while adapting to modern ideologies.

In the February of 1951, the prime minister of India, Jawaharlal Nehru, invited Le Corbusier to India to leave a concrete expression in the newly formed nation. Nehru found this as an opportunity to increase the development of forces of production and in the productivity of labor in building a new economy. He found the establishment of centralized political power and the formation of national identity by giving the design of Chandigarh to Le Corbusier.

Unfortunately, the design of Chandigarh city failed. But made an expression on the upcoming generation of architects in India of how the future building of India might look like.

Some of the buildings that were built after post-independence of India were -

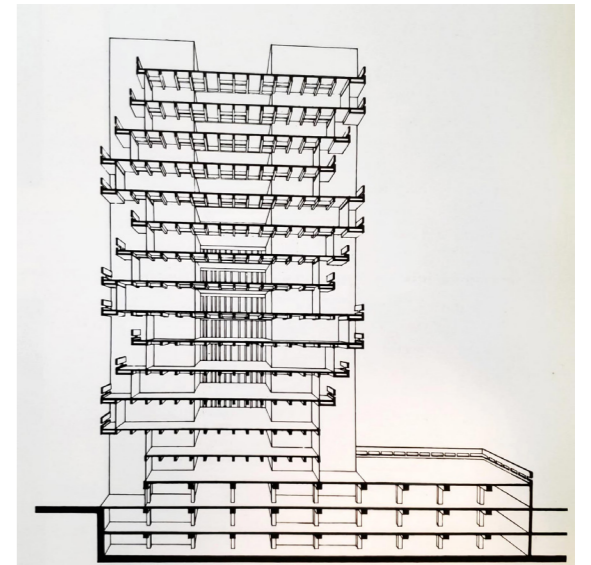
1960s

The **Bhikaji Cama complex** offer an indication of the long - time - span needed for many projects to be built in India. In 1965, the complex was the winning entry in the biggest competition ever organized by the Indian government. The scheme is for a district shopping center on a prestigious 15 hector site in New Delhi, involving 220,000 square meters for offices, a hotel, a museum, an art gallery, and an open-air theatre.

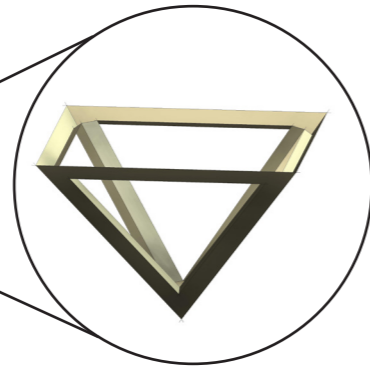
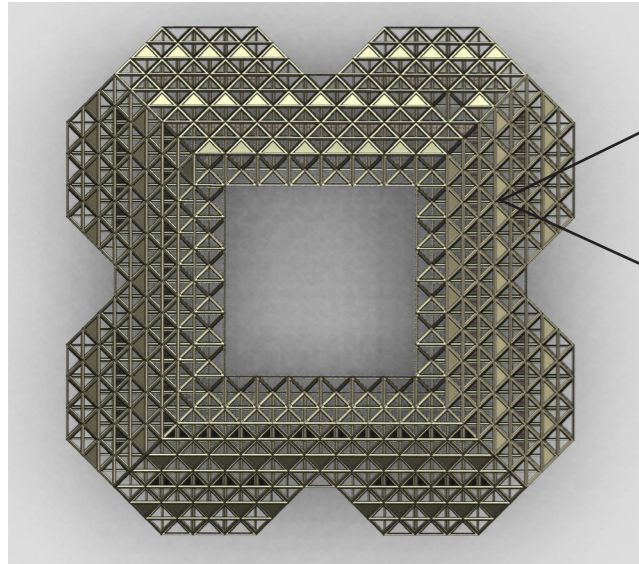
The project went through lots of delays in construction leading to the completion of the structure in the 1980s. This was a continuous structure comprising of small building blocks of six, nine, and twelve-story units that provided an opportunity to introduce certain controls over the final results since the blocks were supposed to be sold as a plot to the individual developer.



East facade of Engineer India house in Bhikaji Cama office complex built by Raj Rewal.



Perspective section of the EI House illustrating the cantilevering of floors which results in protective shadows on the facade



Building plan and structural component of Halls of Nations. Basic pyramid or octahedron (mirror upside down) module of the space frame structure whose joints are 5 meters apart. A typical 9 - number joint of reinforced concrete to create the basic elements of the structure.



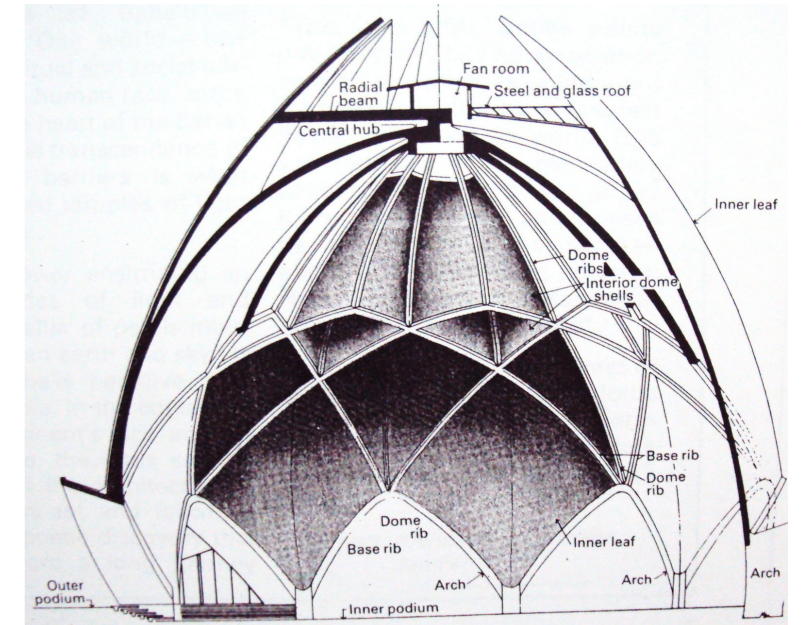
View of the Halls of Nations. Entrances are at both ground and the mezzanine area is enclosed by the ramps and connecting bridges.

1970s

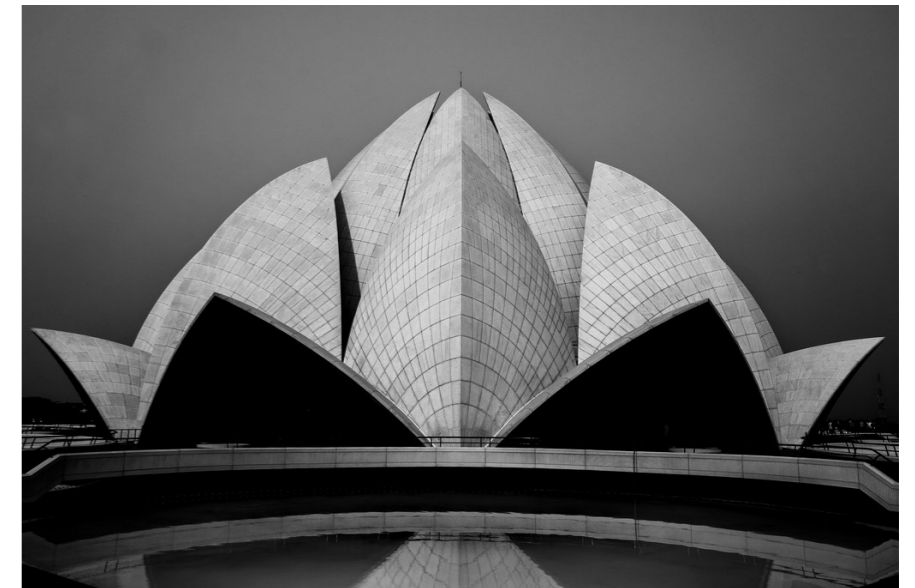
The halls of nations, was a large exhibition space built to celebrate the 25th anniversary of Indian independence. This exhibition was intended to bring in more global investment into India. The structure was an experiment with concrete to explore the possibilities of building a space frame structure and to build a large span space free of columns that can bring in airplanes and satellites for display. The plans of these pavillions are square with chamfered corners, providing eight anchoring points. The corners of this structure were inspired by a monument Humayun's Tomb in New Delhi. The dept of the structural system was utilized as a sun breaker and conceived in terms of traditional 'jali', a geometrical pattern perforation that serves to obstruct direct rays of the harsh sun while allowing air circulation. The building won many competitions and became a part of Delhi's skyline. It was described in The New York Times as a "Brutalist masterpiece", and it was one of the world's largest-span space frame concrete structures when built. In 2017 this structure was demolished overnight by the government.

1980s

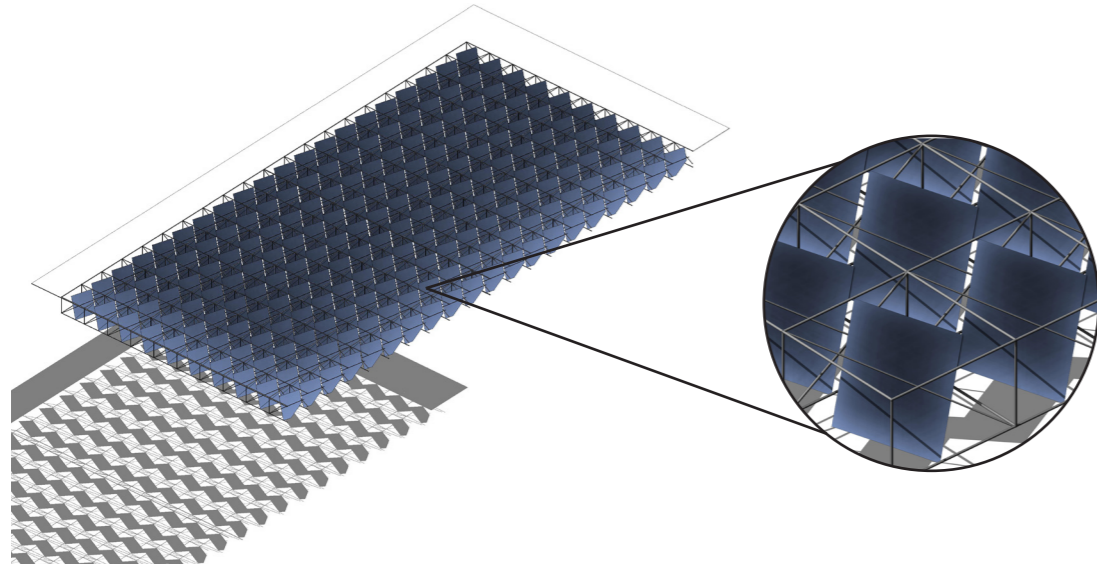
The **Bahai Lotus Temple**, was built by Fariborz Sabha, an Iranian American architect who wanted to represent the diversity and culture of Indian architecture. He used the symbol of a Lotus which intuitively and spiritually connected with every individual. His architecture explores the use of ferrocement in forming arches that allow for a large span column - free space in the base. Inspired by the lotus flower, the design for the House of Worship in New Delhi is composed of 27 free-standing marble-clad "petals" arranged in clusters of three to form nine sides. The nine doors of the Lotus Temple open onto a central hall 34.3 meters tall that can seat 1,300 people[8] and hold up to 2,500 in all. The surface of the House of Worship is made of white marble from Penteli mountain in Greece, the same marble used in the construction of many ancient monuments (including the Parthenon) and other Bahá'í buildings.



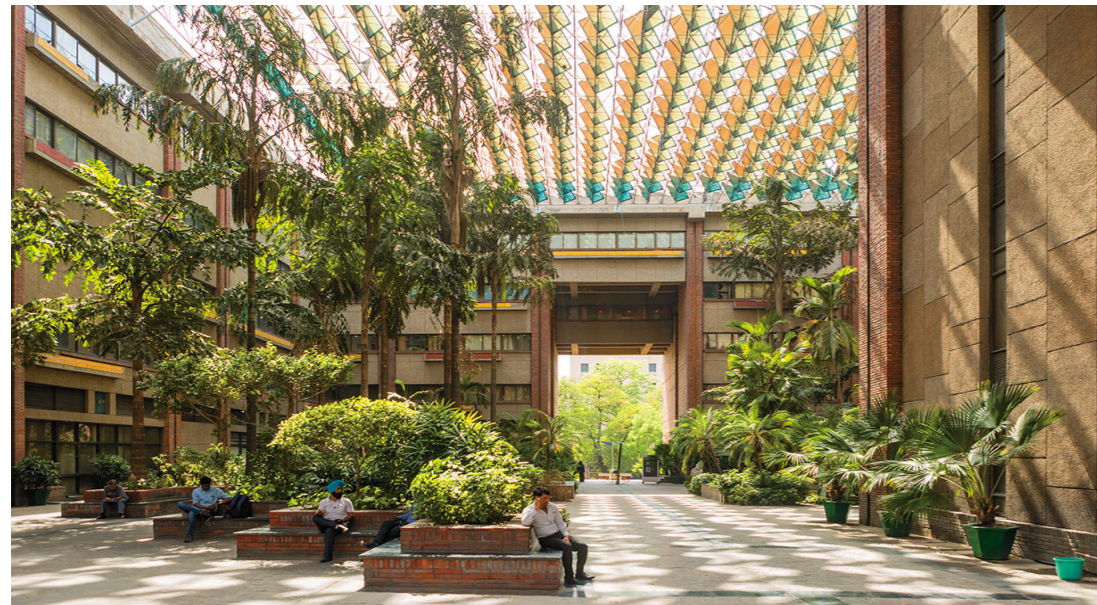
A section of Lotus Temple illustrating how the arches are supporting the reinforced shells.



A view of the temple from the east side pool showing the entry bridge to the prayer hall.



Isometric drawing depicting large span shading of internal courtyards by sun-screen pergolas.



Photograph of an internal courtyard of the Indian Habitat Centre (IHC) building with overhead sun-screen pergolas.

1990s

Indian Habitat Centre, New Delhi by Joseph Allen Stein, introduced a new approach to environmental design aspects of the building by inviting light and ventilation into the open spaces. The use of fabric as sun shading devices resulted in interesting shadows creating shaded interactive spaces for meetings and gatherings while cutting 70% of the solar heat gain.

The public agency for Housing and Urban Development Corporation Ltd (HUDCO) wanted an office building for its workers and made the unprecedented decision to invite chosen non-profit organizations that shared their concern with habitat to share that workspace.

The chairman of HUDCO and the architect Joseph Allen Stein decided to radically change the traditional image of an office building as an architectural project and transformed it into an urban design project. Space was designed to permit the members of the Centre to share services both inside and outside the building with multiple courtyards, common meeting rooms, shared parking areas, library, restaurants, museum, and hotels, some of which are open to the general public. Constructed on nine acres in an urban area, the building eschewed traditional building materials and techniques.

On the morning of April 24th, Delhi's architecture community reacted in shock and disgust to the news that the city's Hall of Nations and the four Halls of Industries had been demolished. Bulldozers had worked through the previous night at the Pragati Maidan exhibition grounds in central Delhi, where the Indian Trade Promotion Organisation (ITPO) razed the iconic structures to the ground, ignoring pleas from several Indian and international institutions. The demolition was met with widespread condemnation by architects and historians alike, not just because of the loss of an important piece of Delhi's heritage, but also for the clandestine manner in which the demolition was conducted.

The demolition was part of a comprehensive redevelopment plan—the adjacent Nehru Pavilion was demolished sometime in the ensuing week—to make way for a “world class, iconic, state of the art” Integrated Exhibition and Convention Centre (IECC) at Pragati Maidan. The architect of the structures, Raj Rewal, called it “an act of outrage” since the matter was sub-judice in the Delhi High Court at the time, with hearings scheduled for April 27, 2017, and May 1, 2017, on a writ petition filed by The Indian National Trust for Art and Cultural Heritage (INTACH). Rewal's own related petition in the same court, to declare and preserve the structures as a “work of art of national importance,” had been dismissed just four days earlier, owing to a legal loophole concerning the definition of heritage. The ITPO stealthily used this narrow, week-long window to go ahead with its plans, thus evading judicial scrutiny.

Written by an old friend on Arch Daily - Suneet Zishan Langer



Hall of Nation Demolition in 2017 by the New Delhi government.



Nehru Memorial pavilion demolished in 2018.



Replacement for Halls of Nation, the new building is getting designed by a cooperate design office name Arcop. It will be known as IECC Hall.



New Delhi Railway Station, Proposed building. Construction expected to start in 2022.

2020s

The government is promoting an architecture that is out of the context of New Delhi's region making it different from other buildings in the city, taking away the main charm of ancient and brutalist architecture of it. These upcoming buildings will make the city futuristic but won't make it rich in history. Right now on the Halls of Nation site a company name Arcop is making a unique design, copying the international region building's elements and applying them in their building.

Similarly, the New Delhi government is planning to demolish the New Delhi railway station. It was built in 1955 to make a statement in the country for a change. The change was that every caste in India should be treated equally in the railway buildings. The new proposed master plan by the government is again demolishing a building that was once an icon for the country and then make a building that is completely out of the context of New Delhi's regional buildings.



ISSUES IN THE NEW DELHI RAILWAY STATION



Chennai Central Railway Station, built by colonizers in 1873 and rebuilt in 1998 Southern Railway Zone. Busiest railway station in South India.



Chhatrapati Shivaji Terminal, Mumbai. Built by colonizers in 1887 during Queen Victoria's rule. Central Railway Zone.



Howrah Railway Station, Kolkata, was built by colonizers in 1854. First railway station built by East India Company. West Railway Zone.

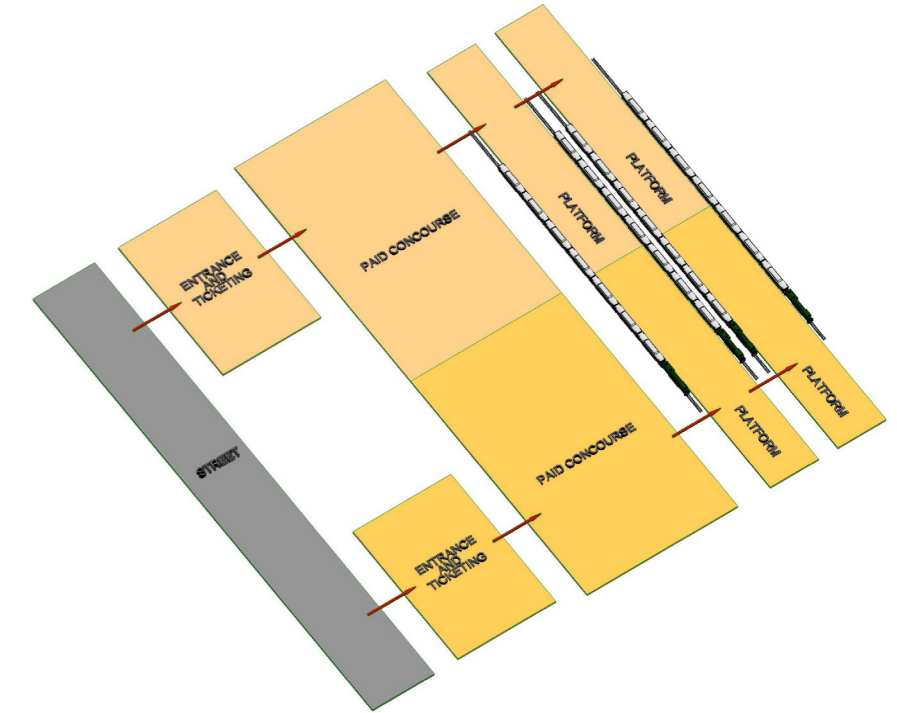
Railway stations in India are one of the oldest buildings across the nation which keeps getting retrofitted with new elements of today's building to look aesthetically up to date. But, from inside the structure, space remains the same as it was during the British era. Across India old railway stations have been following the infrastructure as defined by the Britishers when they started developing railways during their rule across the country (India, Pakistan, and Bangladesh).

Since then the bye-laws have been changed in written but people haven't seen an upgrade in the railway stations for decades. New Delhi Railway Station was one the station to break the typical British architecture to become India's modernist structure and railway station to start a change in the country but still, that station was following the same rule mentioned by the colonizers before independence.

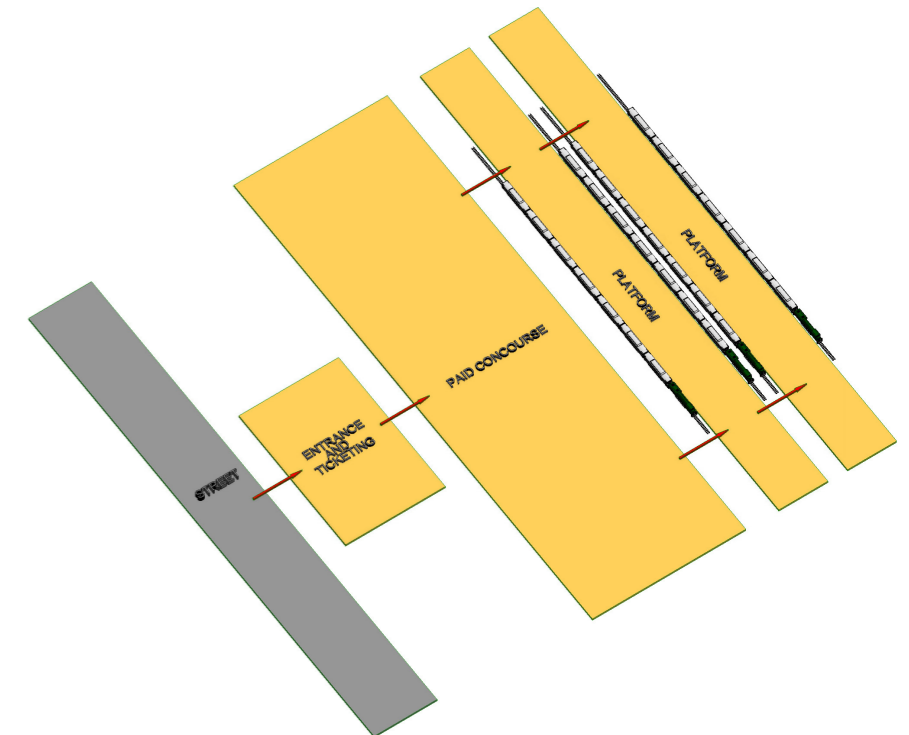
India never thought that after post-independence there will be a huge amount of population growth leading to the failure of existing bye-laws of public buildings.

This station was the first in India to remove the ideology of casteism in a station building by providing a single entrance for all people instead of separate entrances and platforms separated based on caste and privilege. This all started in the railway station with the racism in the country between whites and brown people, making separate platforms and ticketing areas for the people in the building. When the colonizers left the country in 1947 the station platform which was used by colonizers was given to the upper caste people in the country and the other platforms to the lower classes in the country.

After 1955 when New Delhi Railway Station was constructed it started encouraging other state stations to follow the same planning and zoning pattern inside them. This resulted in making the NDLS station building become one of the modern heritage structures of the country but it failed because of the government making changes to the building again and again.



Railway station planning and zoning according to different caste system separating areas according to upper and lower caste.



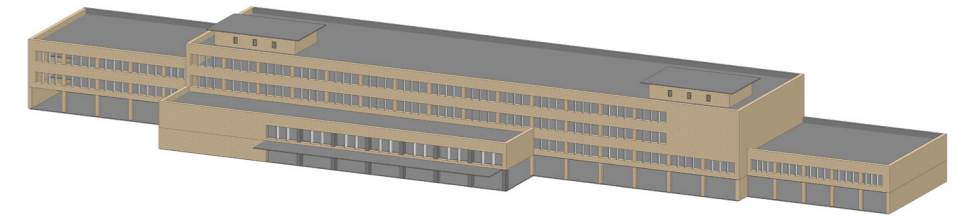
Railway station planning and zoning according to the New Delhi Railway Station after the building was built in 1955, giving common areas for all the people of a different caste.



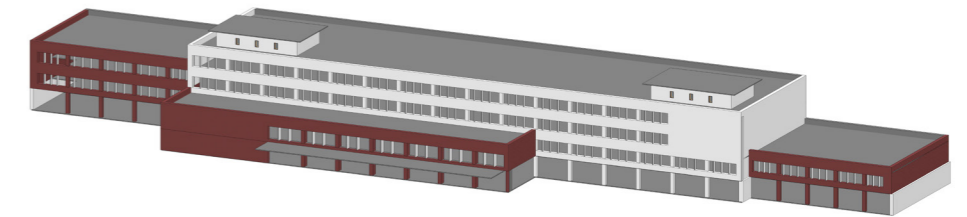
The original facade of the New Delhi Railway Station in 1955. The building had an exposed concrete structure and brutal architectural influence.

The building had gone through a lot of changes since the 1970s starting with the extension of the second floor (the first floor according to Indian codes) and putting up sandstones, eliminating the exposed concrete structure. This was due to the New Delhi redevelopment scheme in the 1970s for 1982's Asian Games. After almost 2 decades the building sandstones were painted in red and white paint.

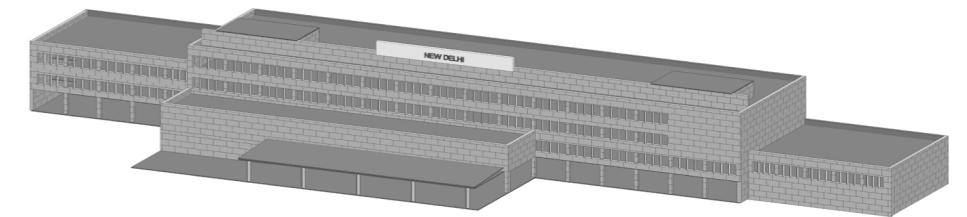
Again in the New Delhi, redevelopment scheme for Commonwealth Games in 2010 the building went through a major change. The whole structure was covered with aluminum panels to give it a look of 21st-century building which also resulted in the ugliest public building of New Delhi.



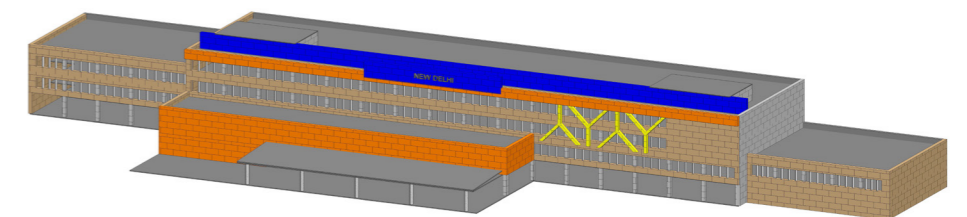
1970s - Building covered with sandstones and extended to the second floor.



1990s - Sandstone painted in red and white color.



2010s - Building got covered with aluminum panels.



Present - Aluminium panels changed to the orange, beige, yellow, and blue scheme.

The present situation of the New Delhi Railway Station is covered with aluminum panels hiding the original architecture behind it.



Following the same occupancy rate and infrastructure which was left by the British colonizers in 1947. On the small scale, there are issues like lack of basic amenities, no proper zone for passengers to wait inside the station till the train arrives on the platform. Either they wait at the ticketing area of the station or directly at the platform making it overcrowded for the passengers to stand and walk. There is also a small kiosk that occupies 20 - 30 percent of the area on the platform.

Also, after the 26/11 terrorist attacks in Mumbai, India. The railway stations haven't been upgraded regarding passengers' safety. There are no proper check zones for the people who are coming in and out of the station.

The structure above the platform is not very well made. It mostly gets damaged during a high-speed wind storm or because of rain. There had been situations in the other station where the walkways and other elevated structures have been failed because of using cheap material or retrofitting the old structures.



No designated place for waiting



Station Safety on tracks and platforms



Overcrowded platform with the same occupancy

Train Movement

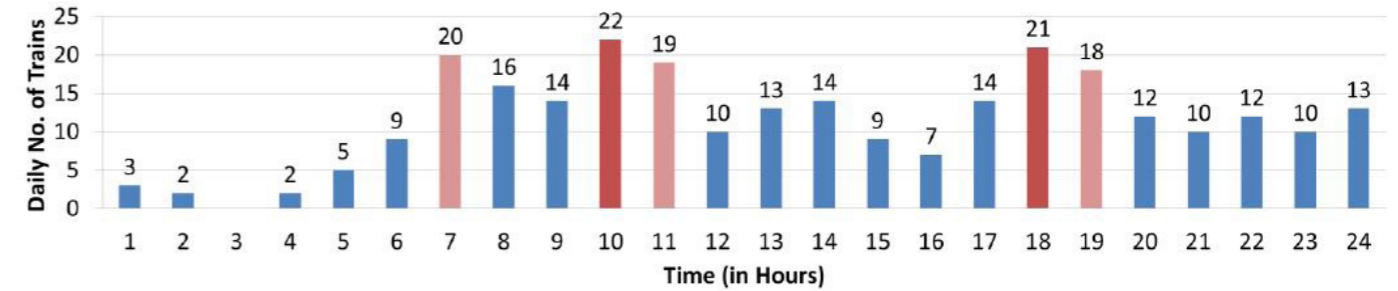
Total 351 trains (106 originating, 106 terminating, and 139 passing) are being operated from the station out of which a maximum of 275 trains (87 originating, 87 terminating, and 103 passing) gets scheduled per day for operations. Share of express trains is highest with 41% followed by Electric Multiple Unit (EMU) trains with 28% share. Platform number 5 is the busiest platform with an operation of an average of 23 trains/day followed by platform number 3 with an operation of an average of 22 trains/day.

Daily Footfall Estimation

According to the secondary data, an estimated 0.25 million passengers/day were observed in terms of footfalls while an estimated 0.35 million passengers/day was observed as per the Ministry of Railways. About 245 trains operated every day from 12 platforms. It is estimated that by the year 2026 the daily footfalls are expected to reach 0.5 million passengers/day (NDLS Redevelopment Report, 2008). The daily footfalls estimation in this study has been done using the station’s videography data by the head. The process involved counting passengers at all entry/exits (eight points), four at Paharganj, and four at Ajmeri Gate side in evening peak hours. A total of around 36,000 passengers enter and exit the station in peak hours, out of which Paharganj and Ajmeri Gate sides contributing 40% and 60% share respectively. By applying peak hour factor of 7.45% of 24 hours footfalls (NDLS redevelopment report 2008), the daily passenger footfalls estimated in 2016 as 0.48 million approx.

Dwell Time (DT)

The total dwell time for departing passenger (unreserved), departing passenger (reserved), and arriving passenger observed is 46, 37, and 14 min. respectively. Of these, 65% – 68% of dwell time is spent in the track-side peripheral area i.e. platforms, walkways, and stairs/elevators/escalators by departing passengers followed by city-side peripheral area with 13% – 28% of dwell time spent by passengers as shown in Table



Hourly Train Operation Distribution (Daily Average)

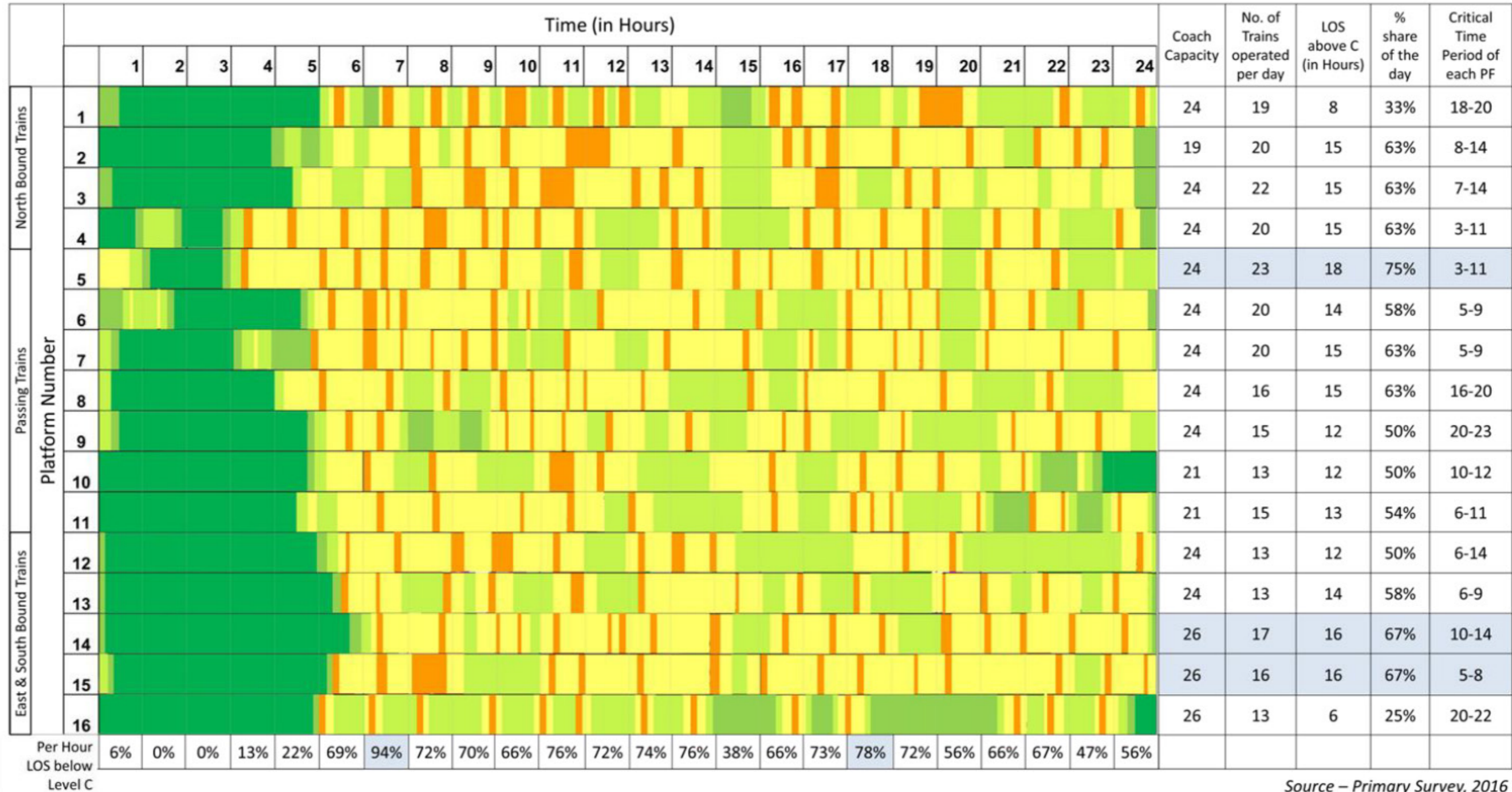
Both Directions (24 Hours Footfalls by taking 7.45% as Peak Hour Factor)				
Directions	Entry	Exit	Total	Directional Distribution
Paharganj	89,200	101,600	190,800	40 %
Ajmeri Gate	157,800	134,200	292,000	60 %
	247,000	235,800	482,800	100 %

Total Daily Passenger Footfalls at New Delhi Railway Station

Station Component	Departing Passenger (Unreserved) (in Minutes)	Departing Passenger (Reserved) (in Minutes)	Arriving Passenger (in Minutes)
City-Side Peripheral Area	6	6	4
Core Area	5	1	0
Administrative and Transit Area	1	1	1
Track-Side Peripheral Area	Circulation	4	4
	Waiting at Platform	30	25
Total	46	37	14

Average Dwell Time

Sources for table through Rohit Anand’s research done between 2016 - 2018



Source – Primary Survey, 2016

LEGEND



Pattern of LOS Behavior throughout the day

Sources for table through Rohit Anand's research done between 2016 - 2018

4

**URBAN ISSUES IN CONTEMPORARY
TRAIN INFRASTRUCTURE**

Zooming out to the urban scale, the New Delhi railway station site lies on the intersection of Lutyens radial planning and a special area/ Old Delhi. The area where the city started its footprint during the Mughal era.

On analyzing the radial planning, it reveals a zoning pattern that starts from the commercial district also known as Connaught place leading to the administrative complex, with housing on either side of the government complex (Refer page no. 14). Initially, the city concept planning is based on the garden city movement.

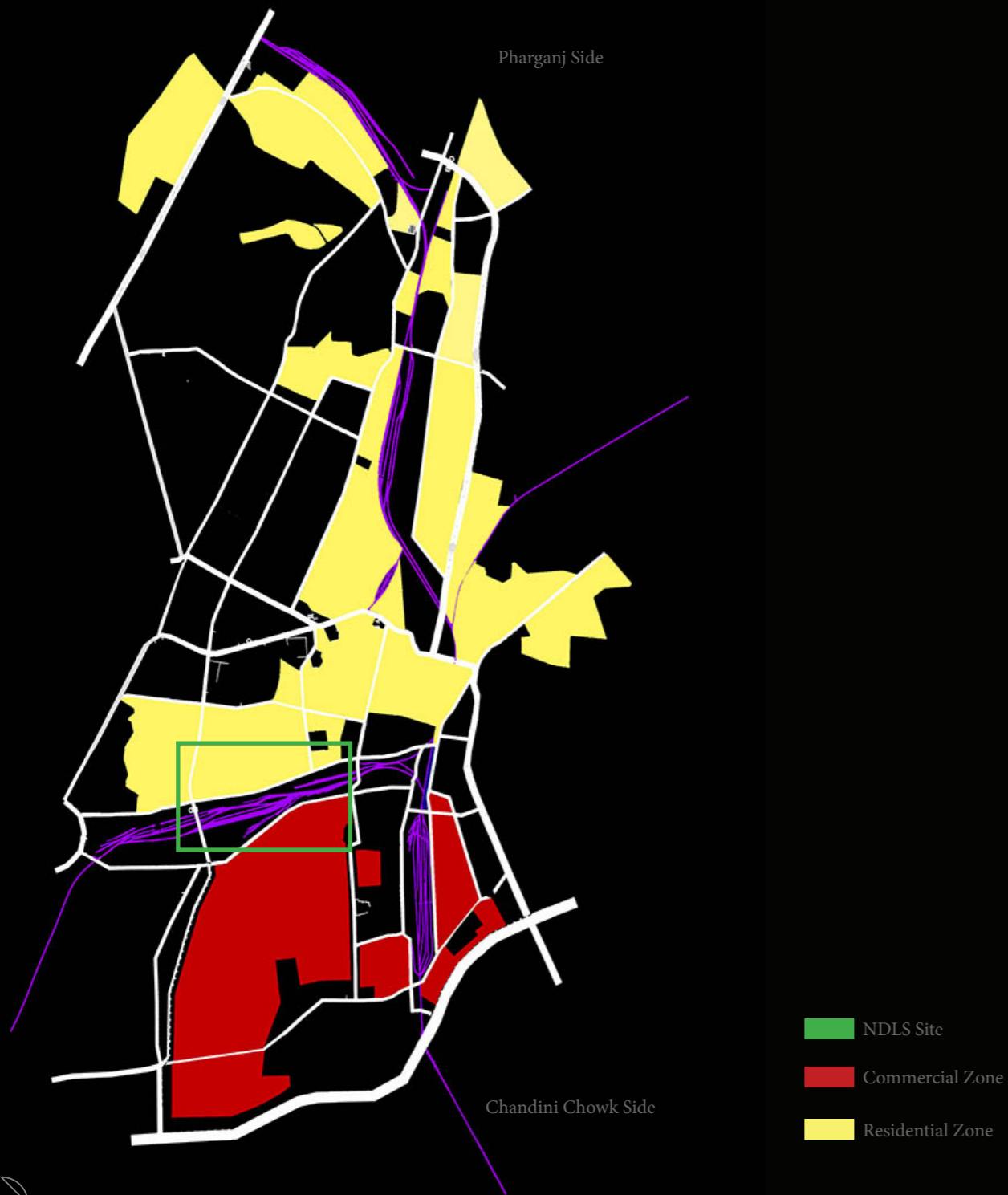


Aerial view of Connaught Place, New Delhi. Known as one of the expensive places for commercial activity in the world.



New Delhi map showing Radial city and Special area/ Old Delhi with New Delhi Railway Station

- Radial Planning
- ND Railway Station Site
- Special Area



Special area map showing Paharganj, Chandini Chowk and New Delhi Railway Station



Aerial view of Chandini Chowk's dense commercial and housing area.

On the other side, the special area/ Old Delhi is a highly unplanned, dense area consisting of mixed-use buildings. The area is divided into two parts, separated by the railway line in between. The western part is known as Paharganj. Majorly consisting of residences and on the east side, the special area consists of commercial spaces known as the Chandini Chowk area highlighted in red.



Ariel view of Pharganj Side



Ariel view of Ajmeri Gate and Chandini Chowk side

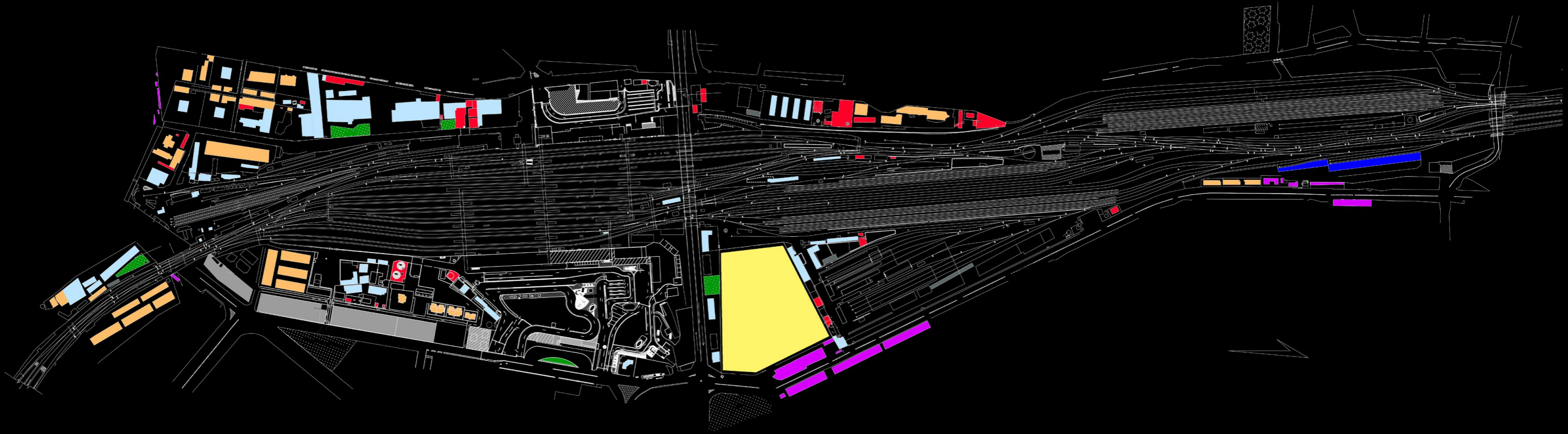
Both the views show the current situation around the station on both sides. The first top view shows the Paharganj side focusing on the modernist building and support structures on the one-way road going to the Old Delhi railway station and the second view shows the area next to Ajmeri gate/ Chandini Chowk building where the majority of the area is getting used by car parking and railway station mail department making it inefficient for the station to operate. On the Ajmeri side, there is more scope of redevelopment and area for expansion leading to the elimination of major traffic on this side of the station. This site also contains two existing metro stations. The first one connects Indra Gandhi International Airport which is one of the world's busiest airports and hotels of Aerocity near to the airport. The other metro line is known as the yellow line, connecting major commercial areas of New Delhi.

- Building Services
- Railway Offices
- Railway Staff
- Institutional/ Monument
- Green Areas
- Shops
- RLDA's Vacant Plots
- Goods Area

New Delhi Railway Station Existing Master Plan

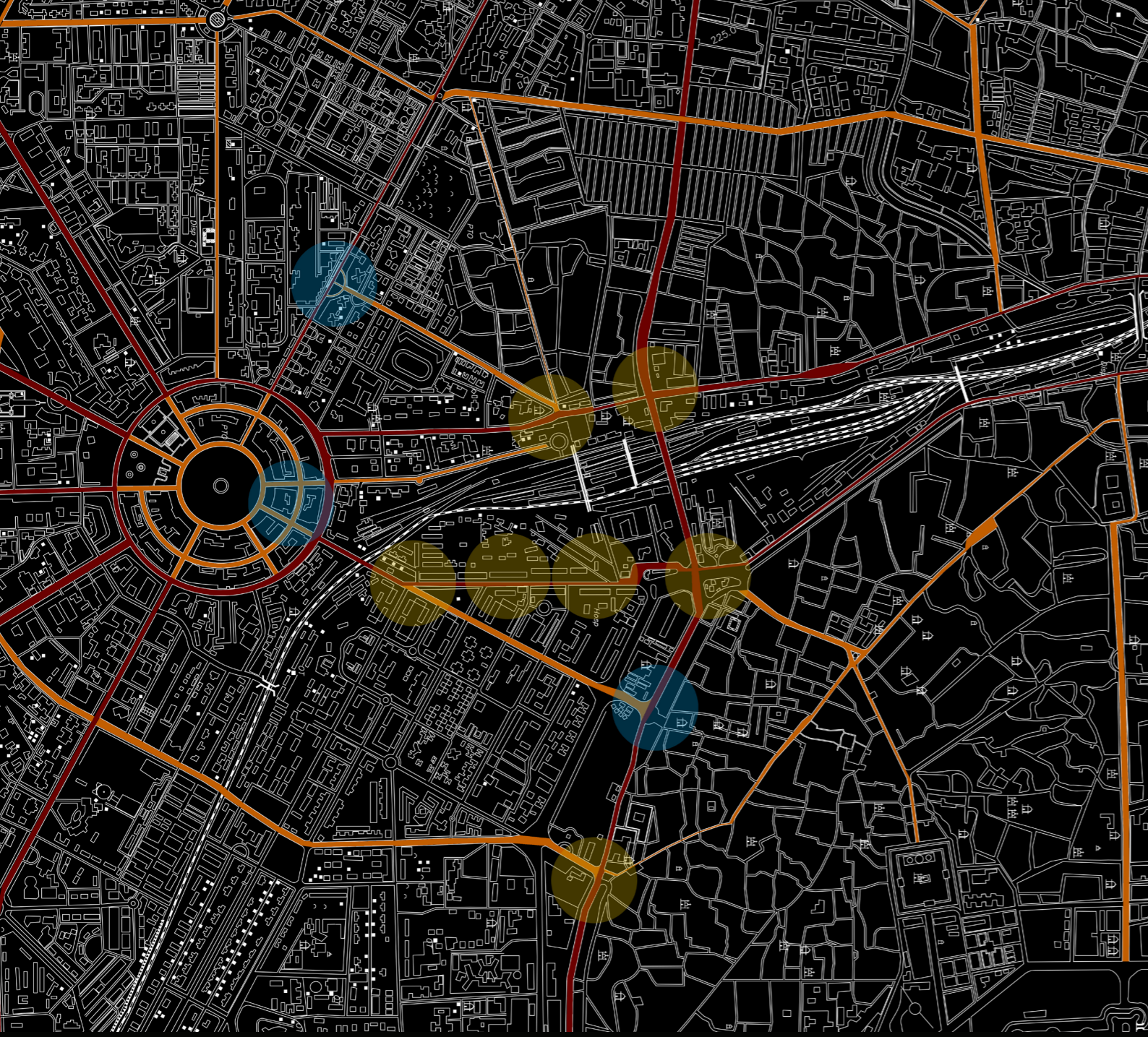
The station's support buildings were built after 1955. They were built in an unplanned manner which affected the efficiency of the railway station and passengers also leading to traffic jams in the city.

Pharganj Side



Chandini Chowk Side





Traffic conditions around the site.

The New Delhi Railway Station lies between the 3 major roads of New Delhi's special area. On Paharganj side Chelmsford road, on Ajmeri Gate side Bhavbhuti Marg and a flyover over the railway lines Desh Bandhu Gupta Road. From all these roads Chelmsford road is the only road which is one way and connecting Connaught Place with Paharganj, New Delhi Railway Station, Old Delhi Railway Station, and Sadar Bazaar. All the other remaining roads are 4 lane roads with both side traffic. During peak hours these all three roads get jammed at yellow highlighted mark-making initial traffic jams in the city and within few hours it starts choking the main commercial hub of New Delhi, the Connaught Place, and other important roads like Barakhamba Road and Panchkuian Marg. This can be solved by making a clockwise loop of one-way road around the station which would reduce the traffic on the important nodes of the city.

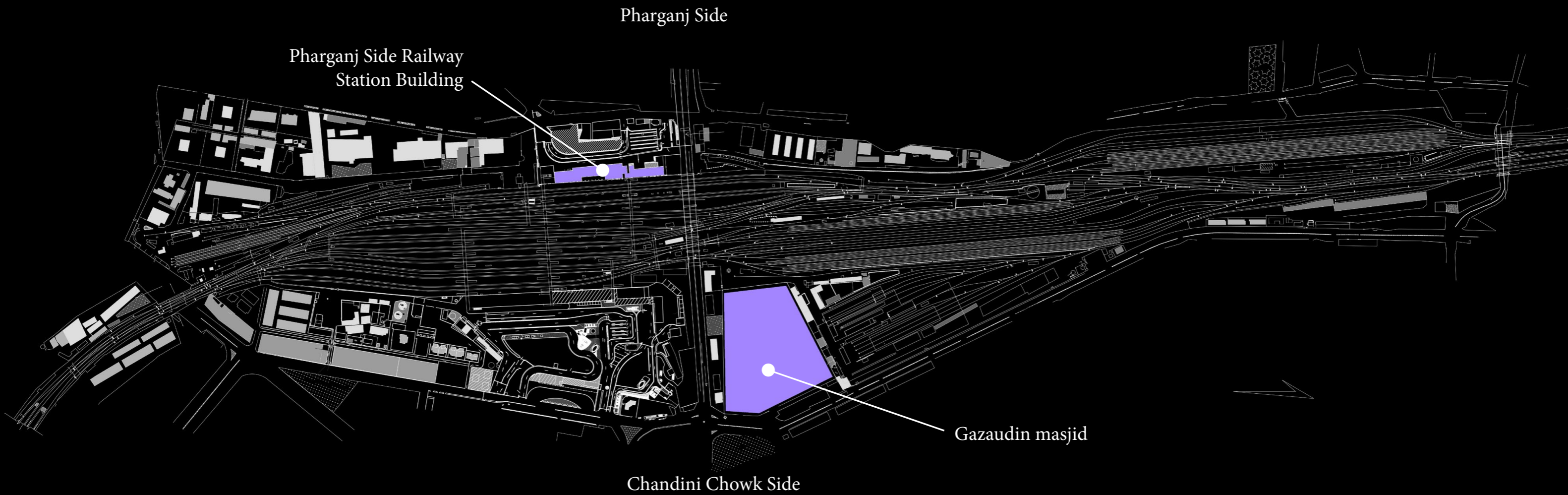
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**NEW DELHI RAILWAY
PLANNING PROPOSAL**

- Demolished
- Preserved

New Delhi Railway Station Proposed Demolition

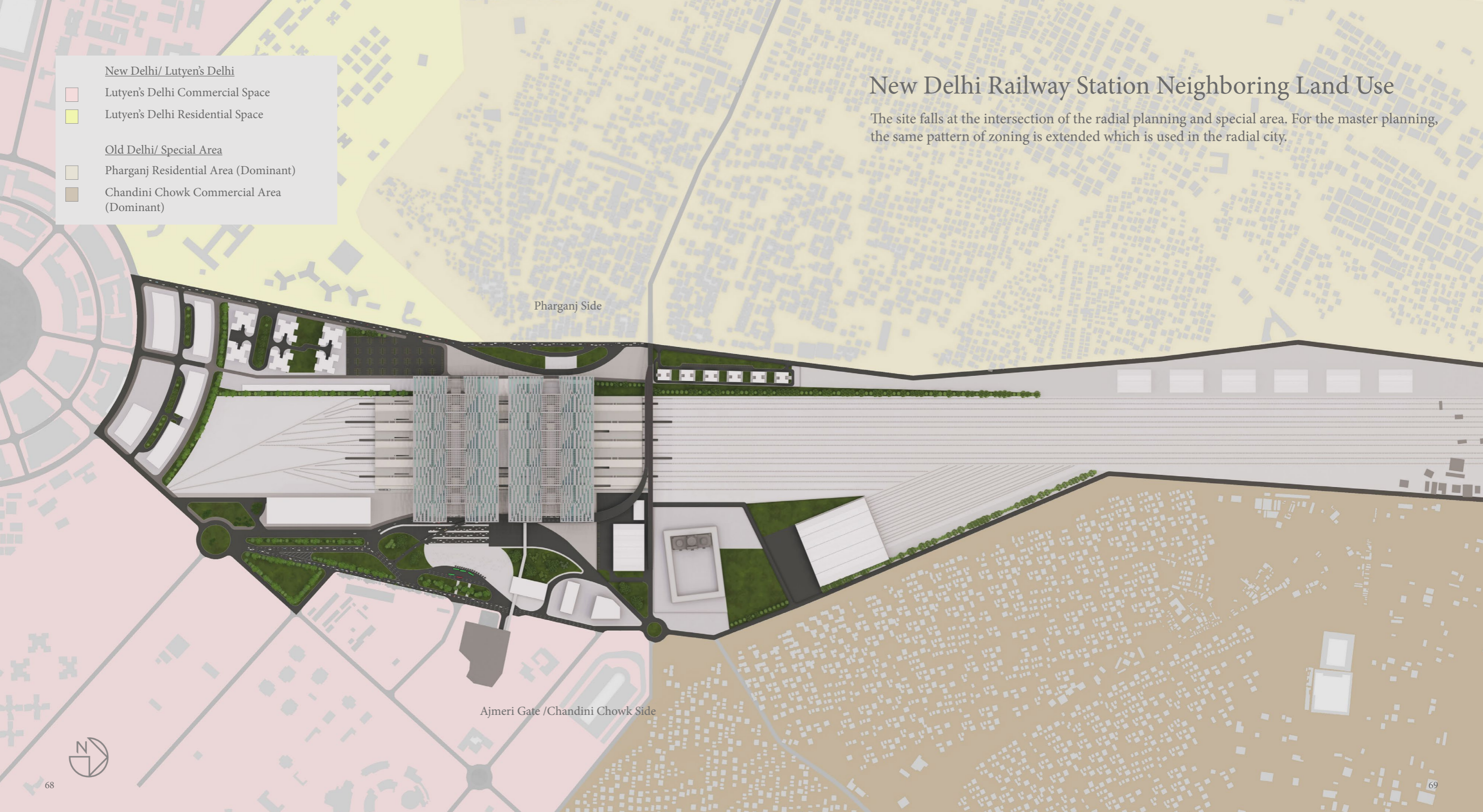
The design proposal engages with the demolishing of the existing temporary structures around the station and retain two structures on the site which include a Modern heritage structure and a religious monument with designing of a new civic culture space including amenities and regulations. Reflecting the culture of the region while being an important civic node for efficient transportation of people and cargo around New Delhi and the rest of the country.



- New Delhi/ Lutyen's Delhi
 - Lutyen's Delhi Commercial Space
 - Lutyen's Delhi Residential Space
- Old Delhi/ Special Area
 - Pharganj Residential Area (Dominant)
 - Chandini Chowk Commercial Area (Dominant)

New Delhi Railway Station Neighboring Land Use

The site falls at the intersection of the radial planning and special area. For the master planning, the same pattern of zoning is extended which is used in the radial city.



Pharganj Side

Ajmeri Gate / Chandini Chowk Side



Sector 1- Railway Station

- A Arrival
- B Departure
- A1 Station's exit and support structure 1
- B1 Station's entrance and support structure 2
- A2 Station's support structure 3
- B2 Pharganj building/ Support structure 4

Sector 2- Secondary Support Structure

- C Train service yard
- E Station mail department
- F NDLS
- G Existing metro station (Airport Line)
- H Multi - level parking & metro station
- D Ghaziuddin masjid

Sector 3- Commercial & Gathering Spaces

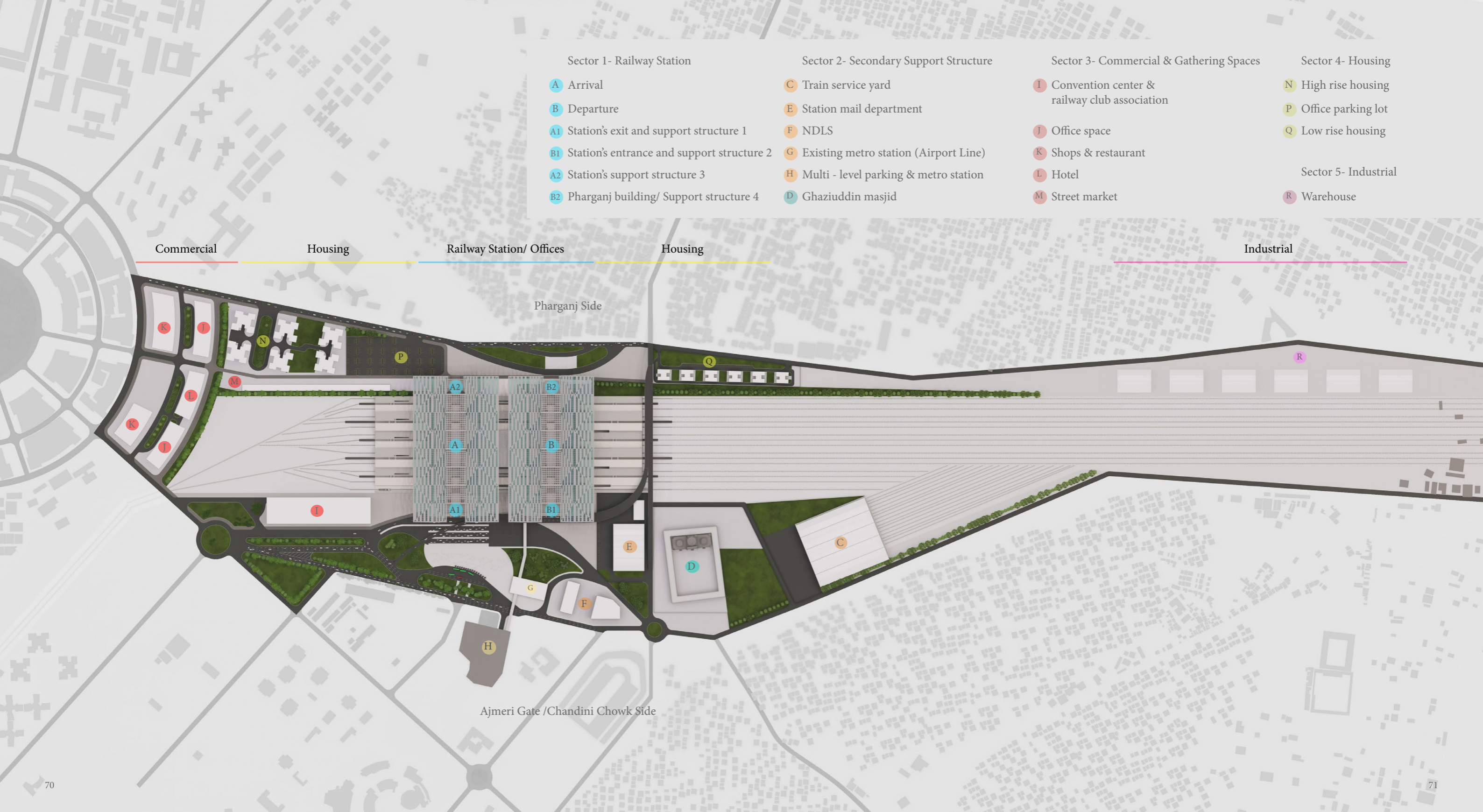
- I Convention center & railway club association
- J Office space
- K Shops & restaurant
- L Hotel
- M Street market

Sector 4- Housing

- N High rise housing
- P Office parking lot
- Q Low rise housing

Sector 5- Industrial

- R Warehouse



New Delhi Railway Station Master Plan Proposal

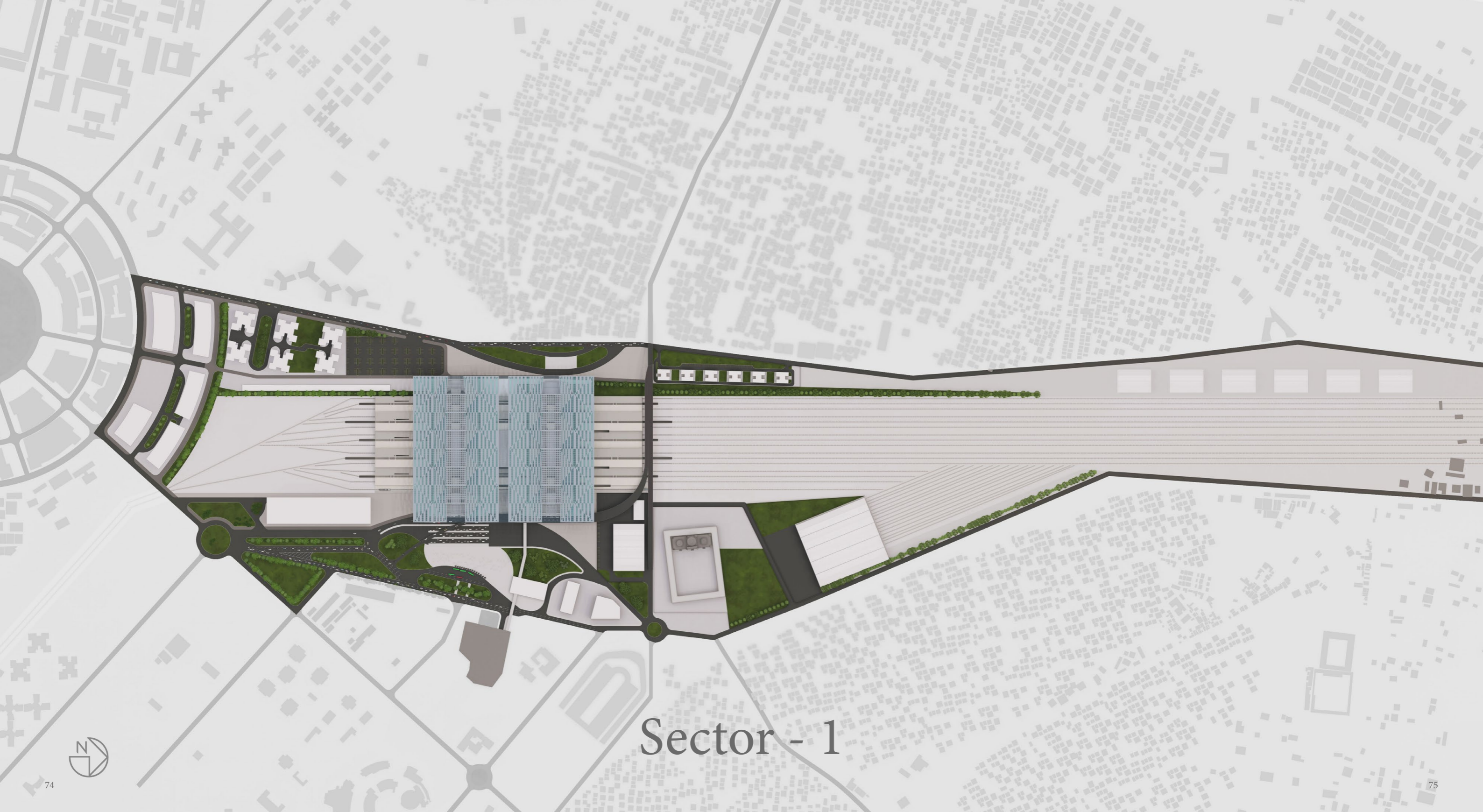
- Sector 1 - Railway Station
- Sector 2 - Secondary Support Structure
- Sector 3 - Commercial & Gathering Spaces
- Sector 4 - Railway Housing
- Sector 5 - Industrial

Commercial Housing Railway Station/ Office Housing Industrial

Pharganj Side

Ajmeri Gate / Chandini Chowk Side

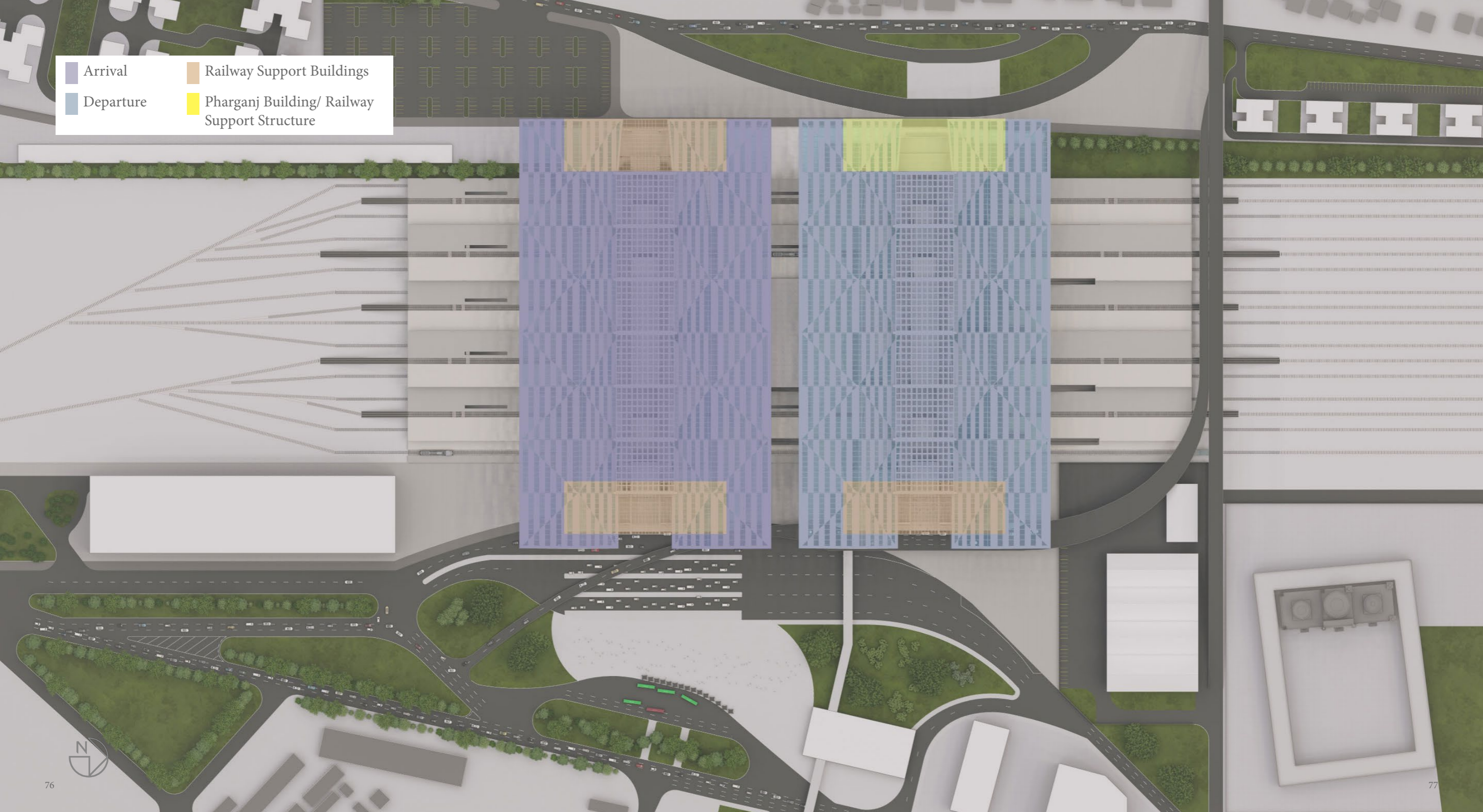




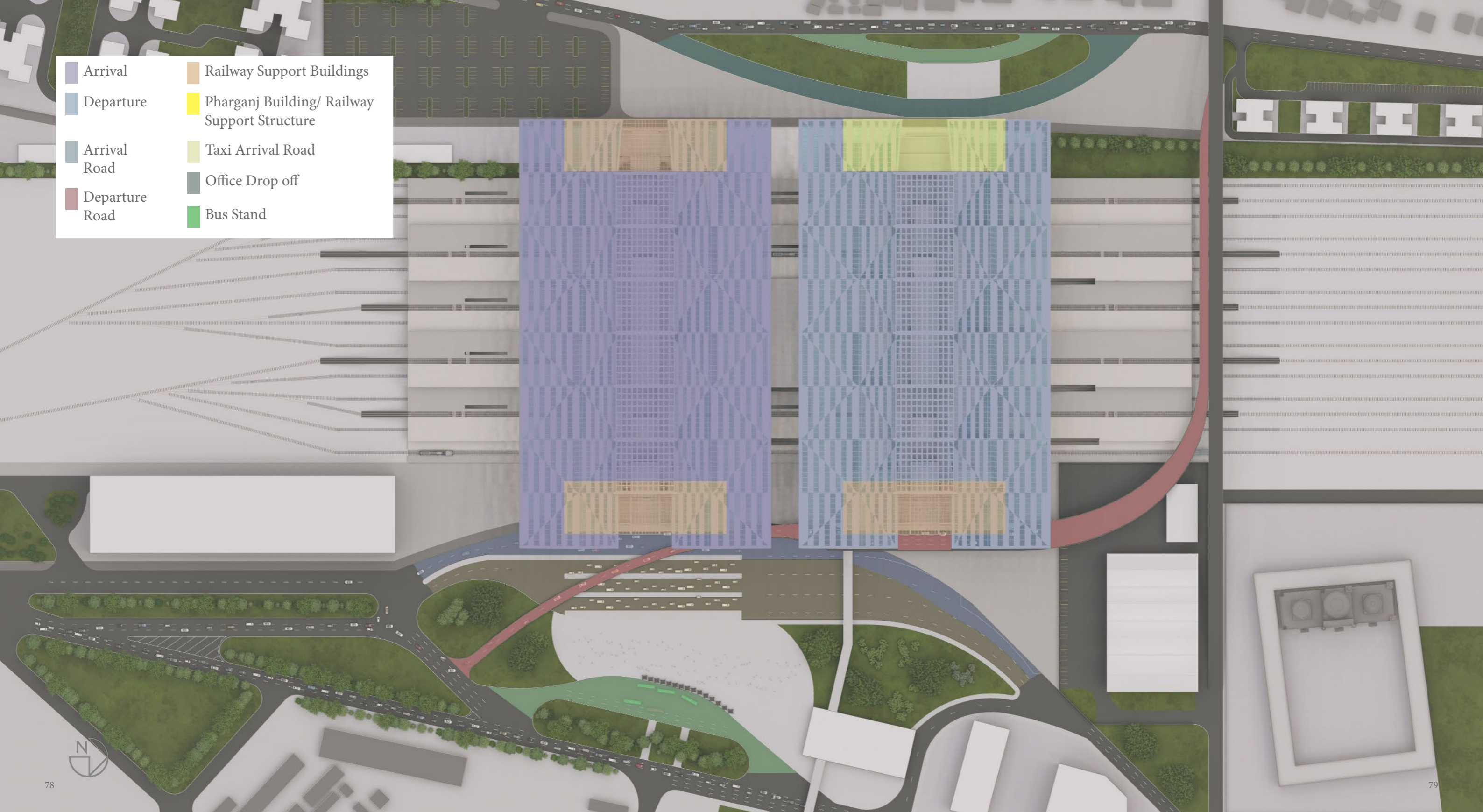
Sector - 1

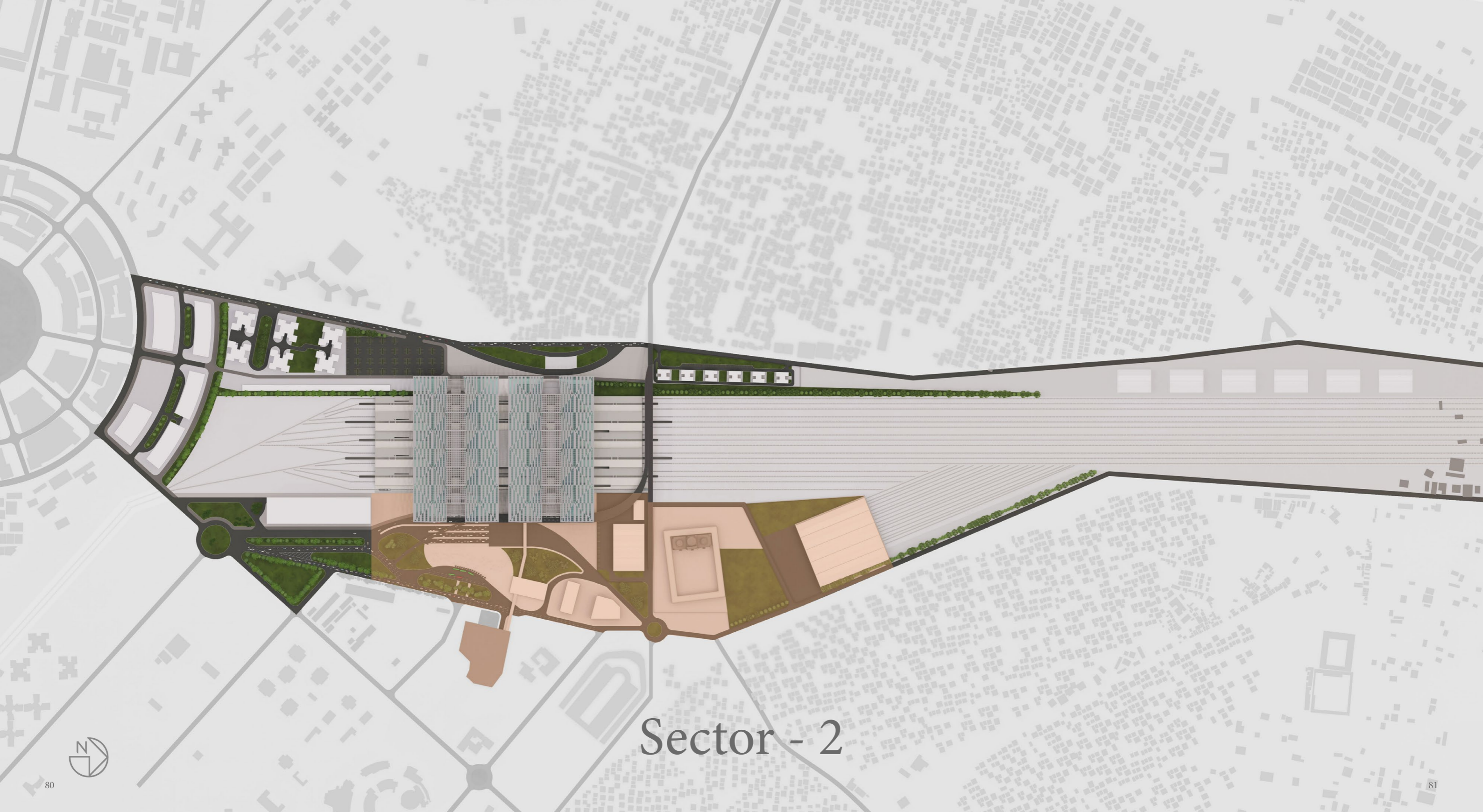


- Arrival
- Departure
- Railway Support Buildings
- Pharganj Building/ Railway Support Structure



- Arrival
- Departure
- Arrival Road
- Departure Road
- Railway Support Buildings
- Pharganj Building/ Railway Support Structure
- Taxi Arrival Road
- Office Drop off
- Bus Stand

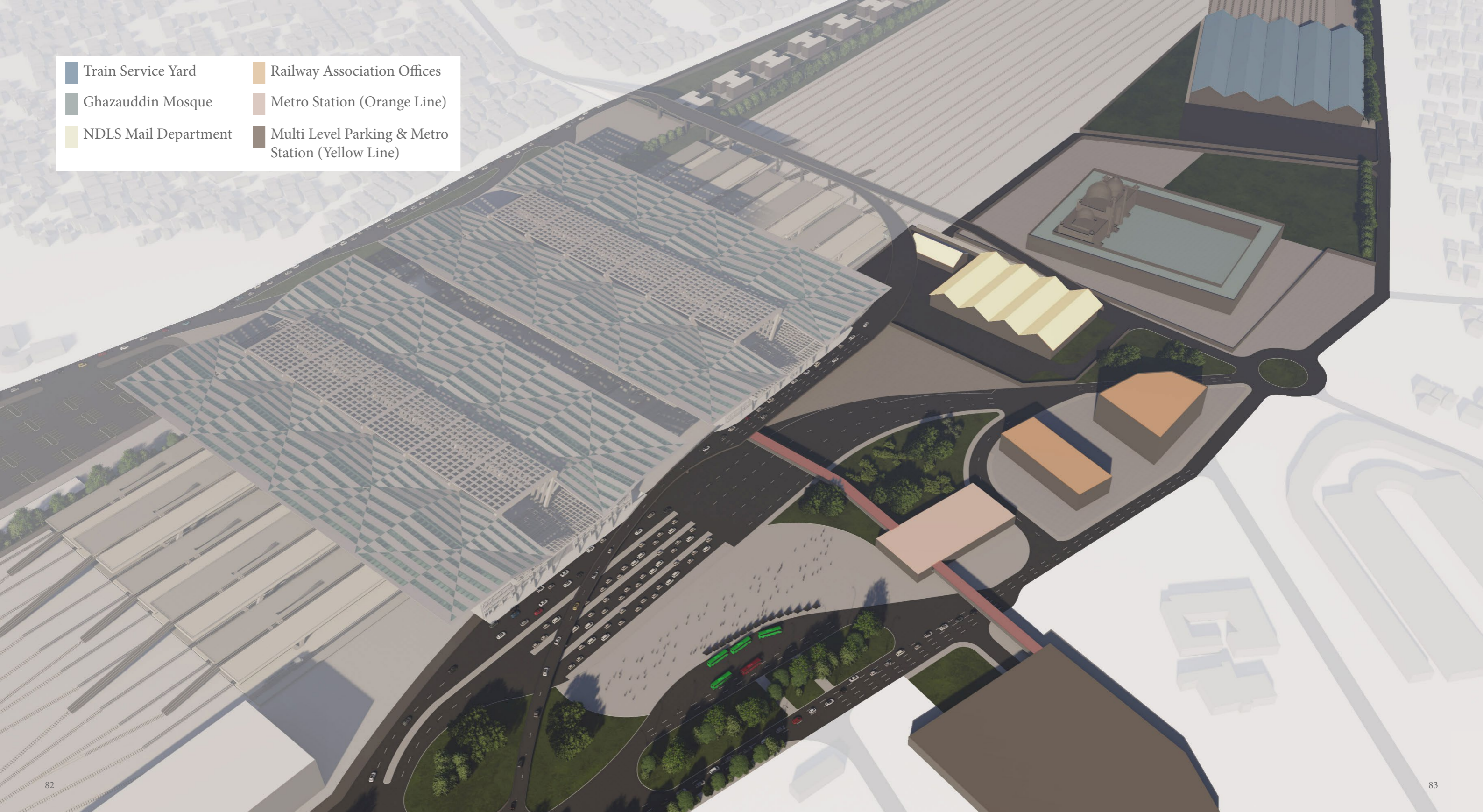


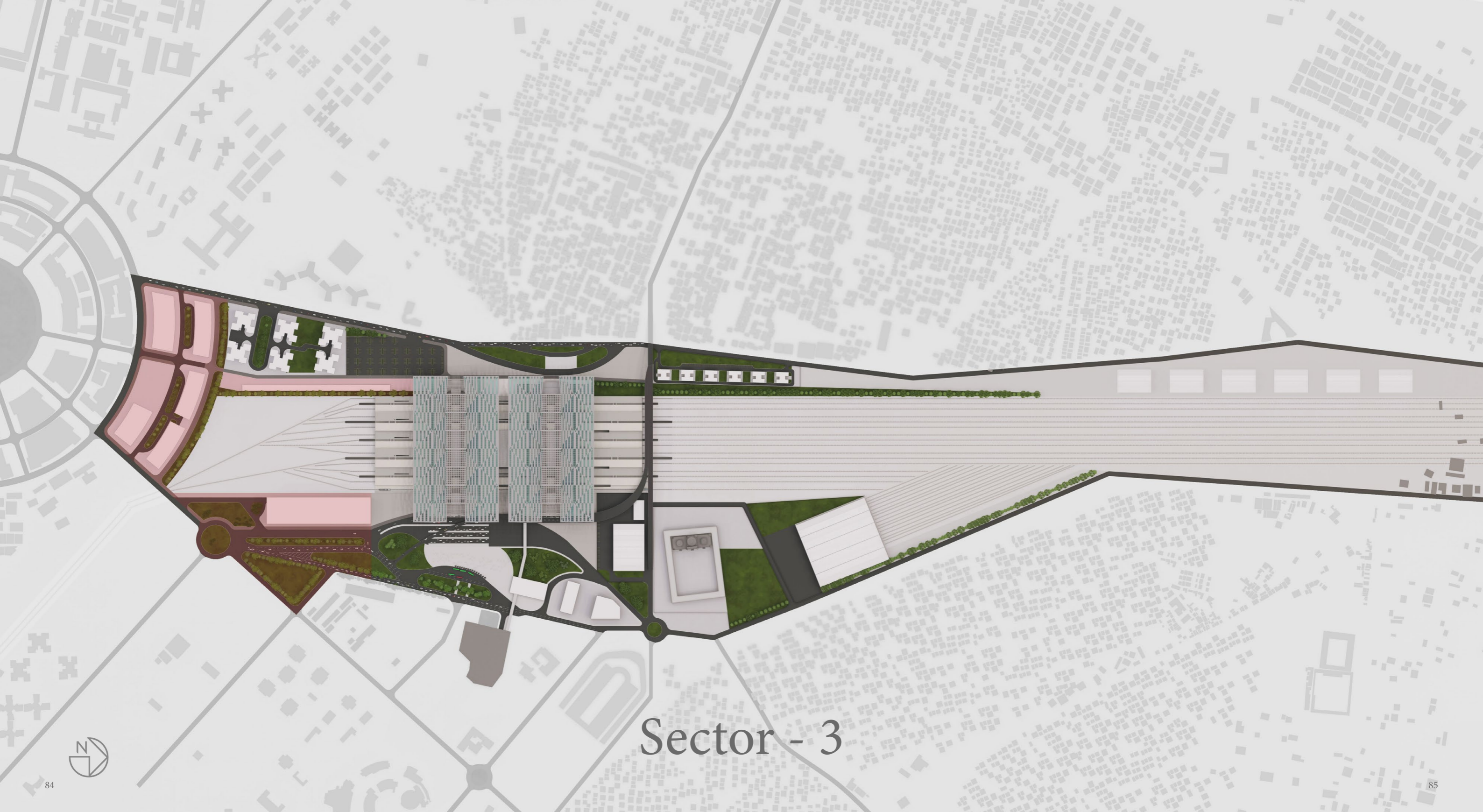


Sector - 2



- Train Service Yard
- Railway Association Offices
- Ghazauddin Mosque
- Metro Station (Orange Line)
- NDLS Mail Department
- Multi Level Parking & Metro Station (Yellow Line)

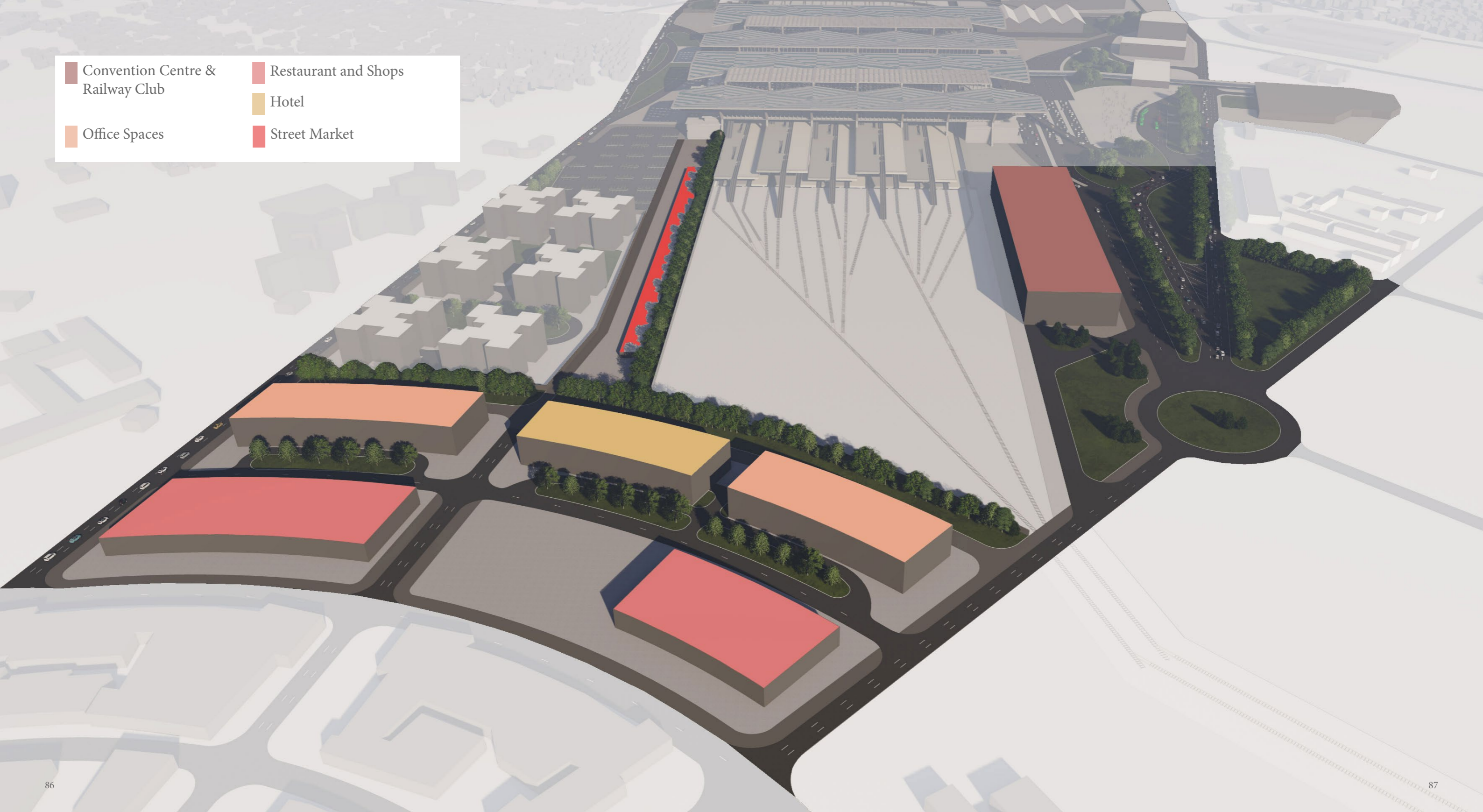




Sector - 3



- Convention Centre & Railway Club
- Restaurant and Shops
- Hotel
- Office Spaces
- Street Market

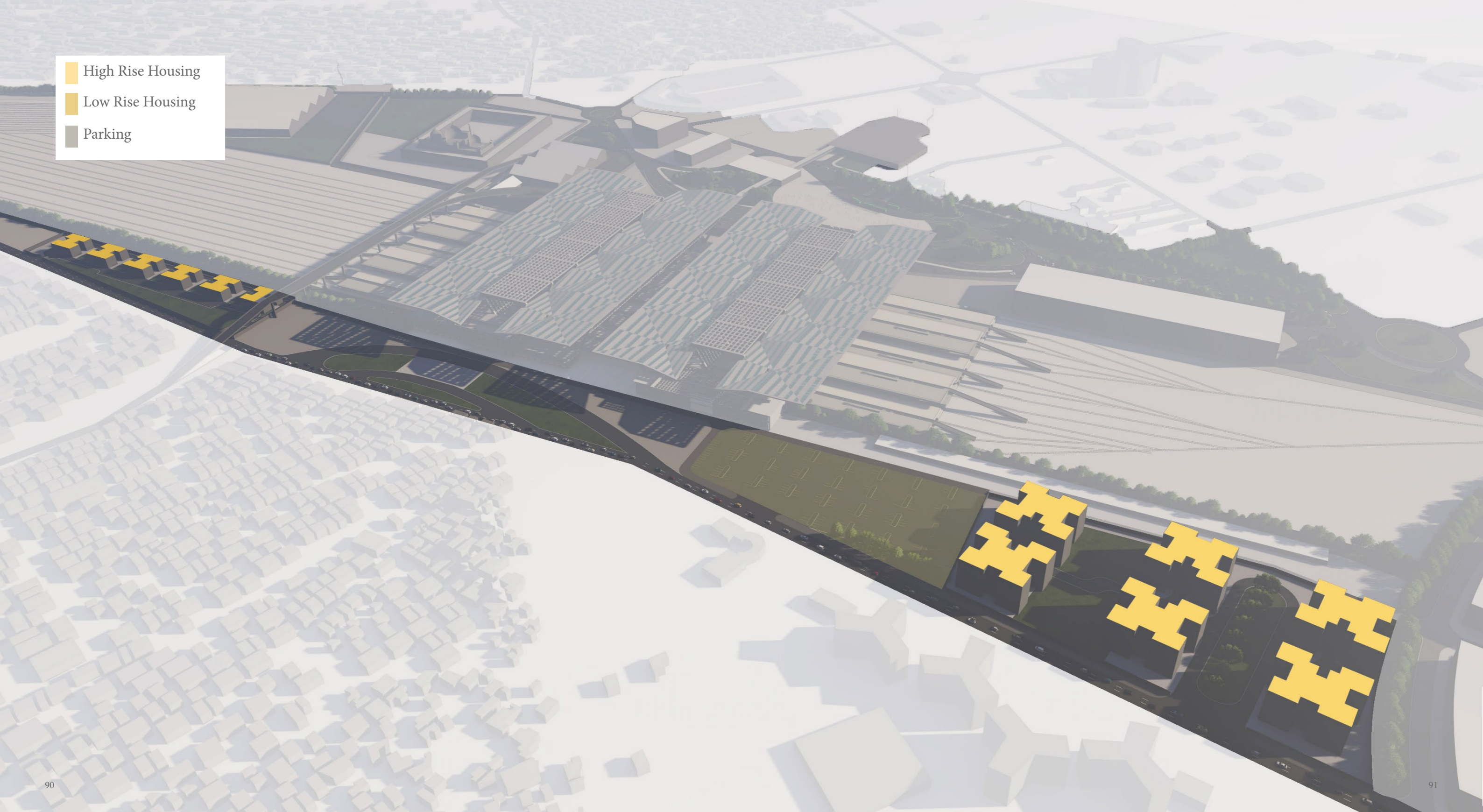




Sector - 4

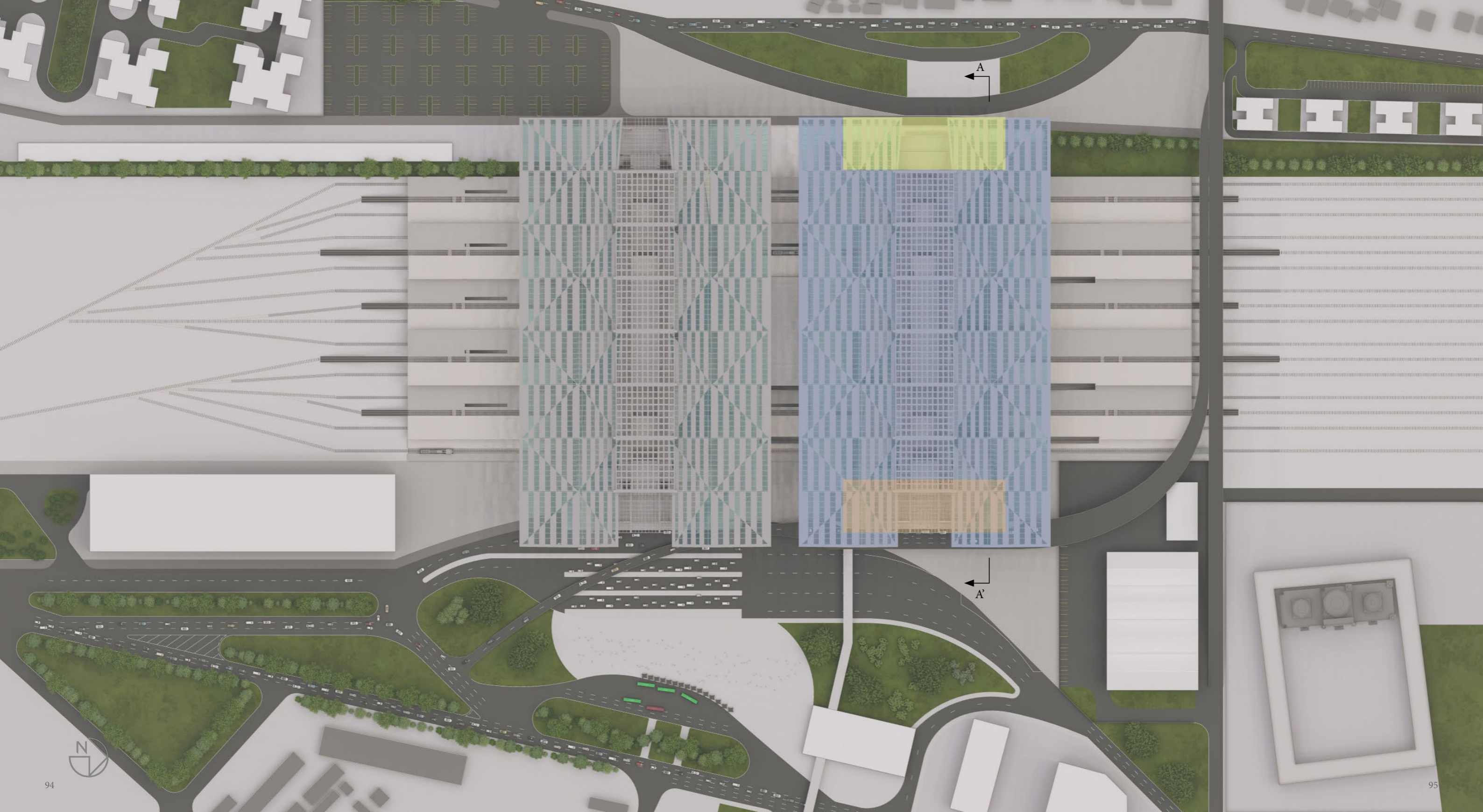


- High Rise Housing
- Low Rise Housing
- Parking



6

**TRAIN STATION
BUILDING DESIGN**



A

A'



Railway station entrance building

Waiting area

Platform level 1

Platform level 2

Platform level 3

Pharganj building / support structure



Restaurants & Shops

Ticketing area

Railway engineer office

IRCTC office 2nd floor

IRCTC office 1st floor

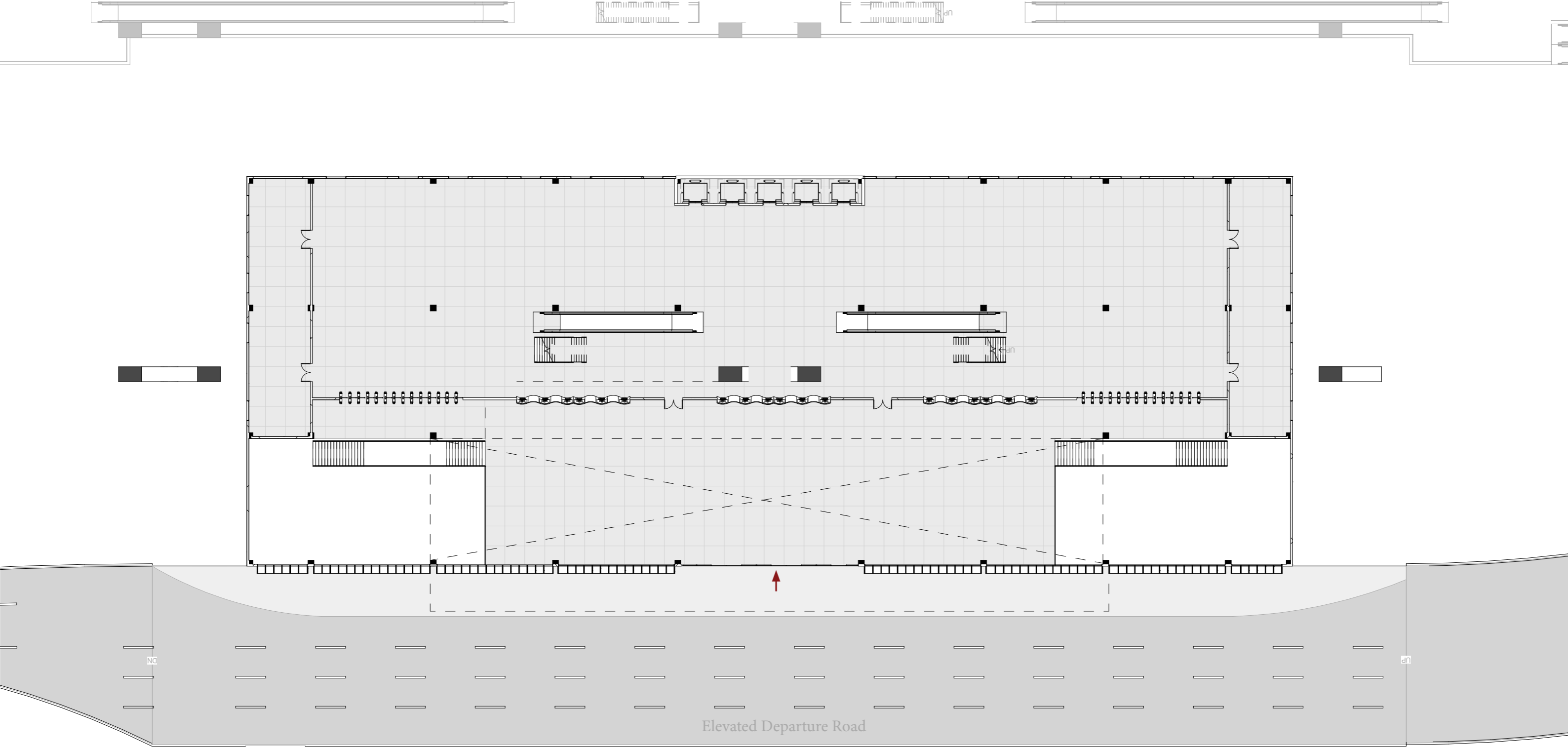
Arrival road

Elevated departure road

Accounts office and control room

Section AA'

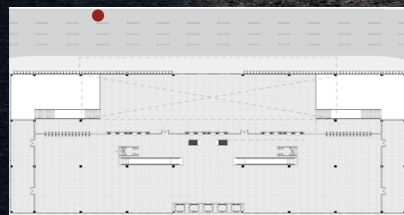




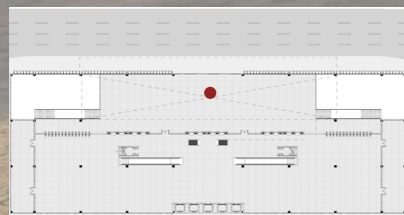
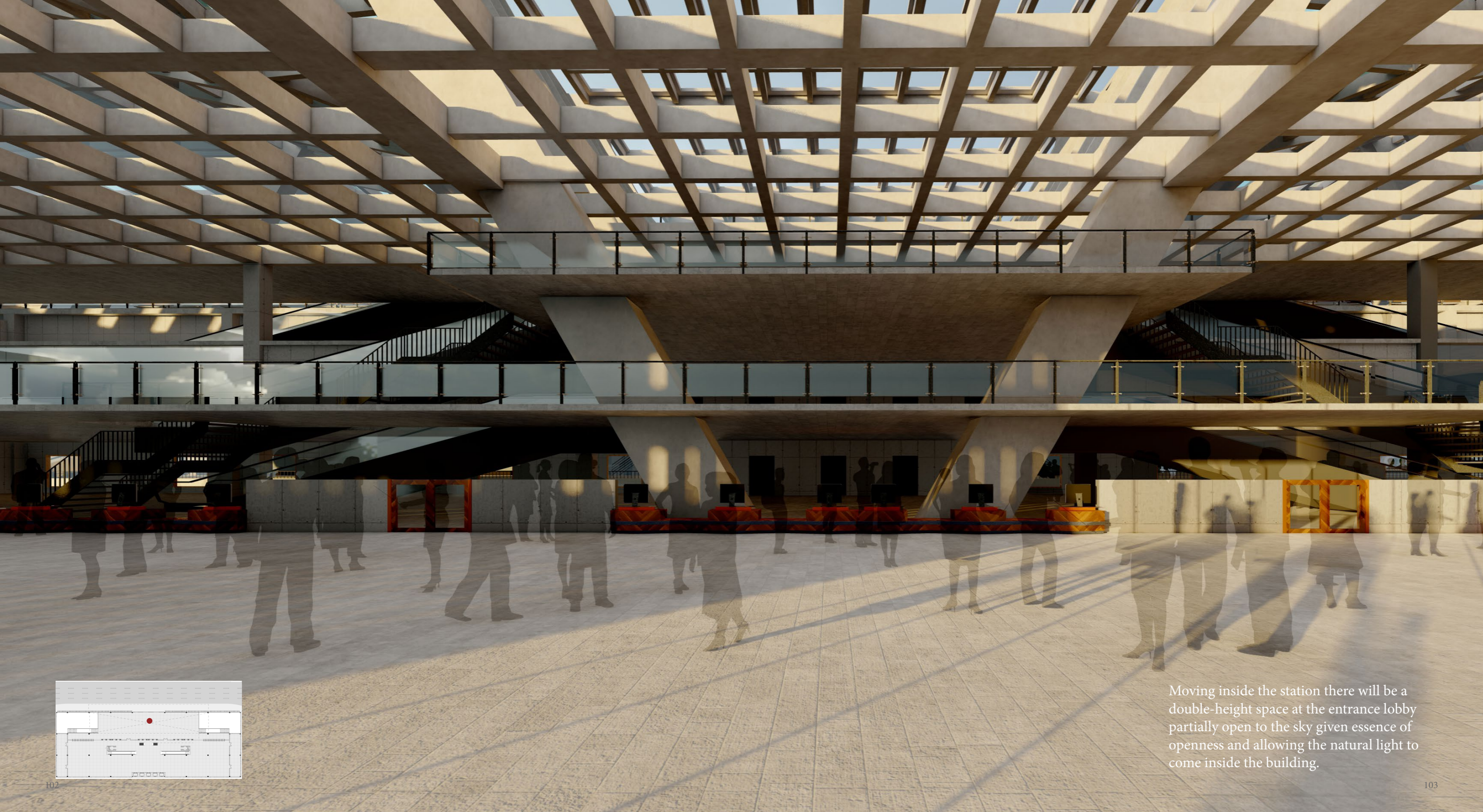
Elevated Departure Road

Floor Plan - Station Entrance and Ticketing Area

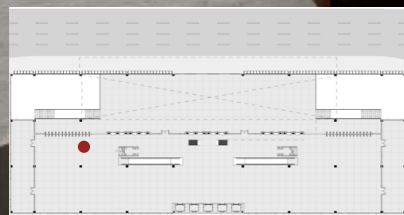
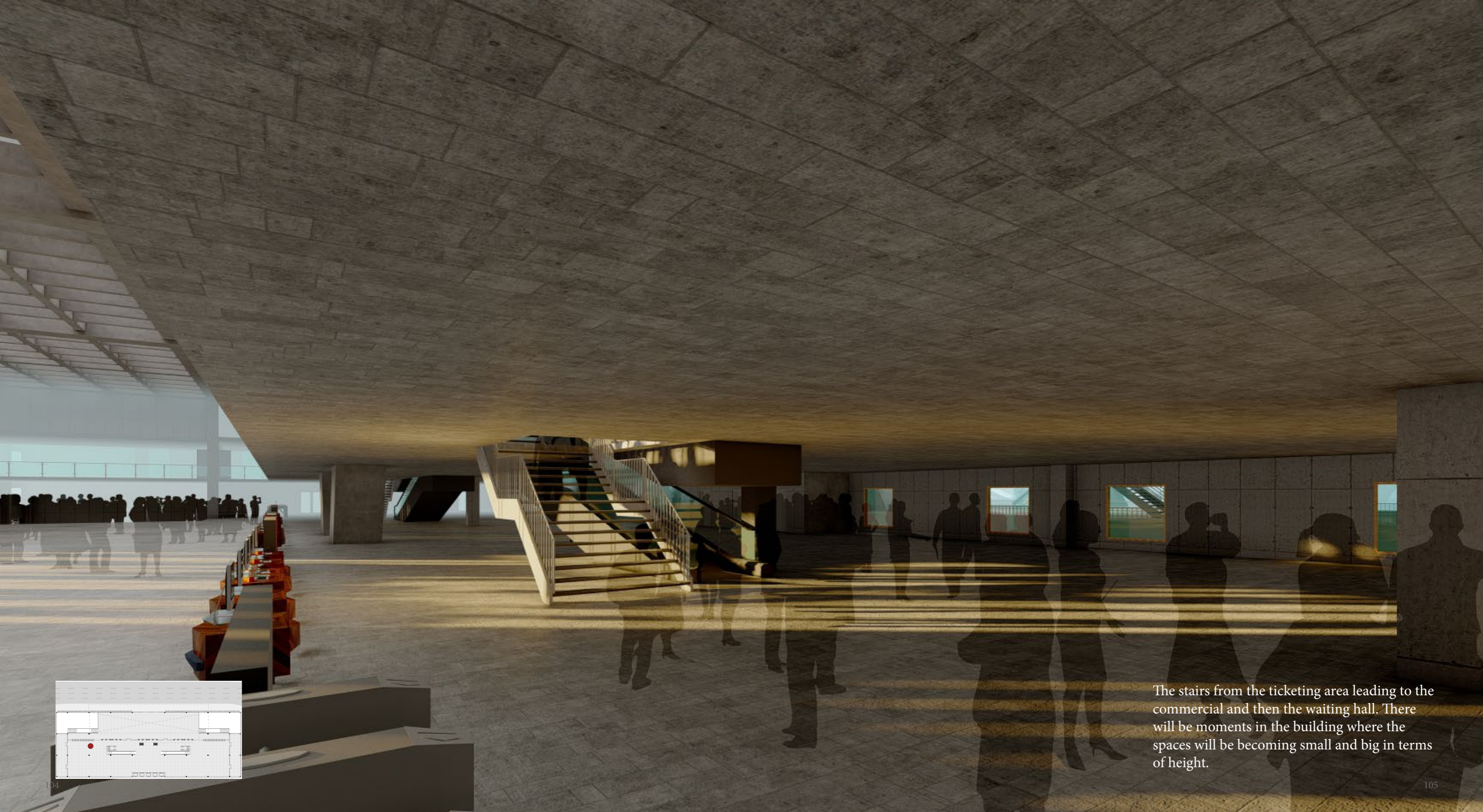




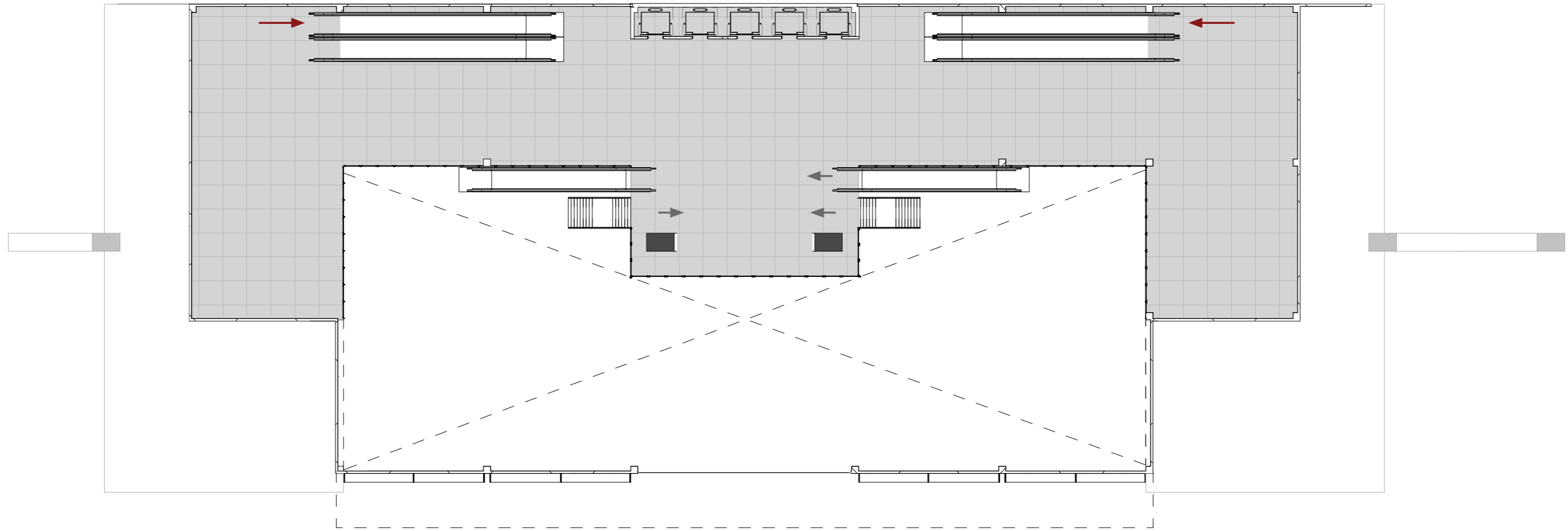
Exterior view of the station's departure building from elevated road showing exposed reinforced concrete slabs and wall following the same design language of the modernist building.



Moving inside the station there will be a double-height space at the entrance lobby partially open to the sky given essence of openness and allowing the natural light to come inside the building.

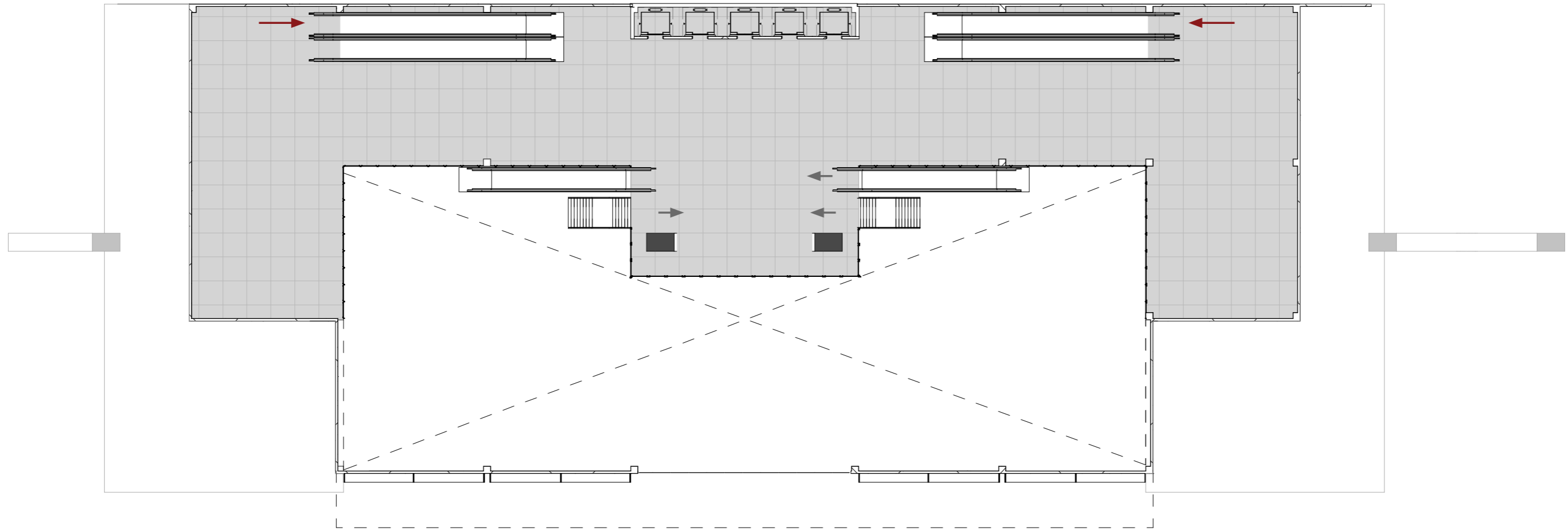


The stairs from the ticketing area leading to the commercial and then the waiting hall. There will be moments in the building where the spaces will be becoming small and big in terms of height.



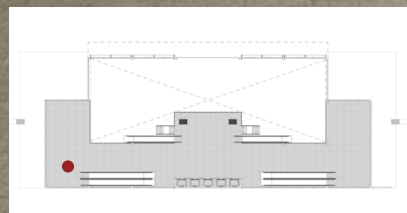
Floor Plan - Connecting floor between entrance and waiting hall





Floor Plan - Connecting floor between entrance and waiting hall





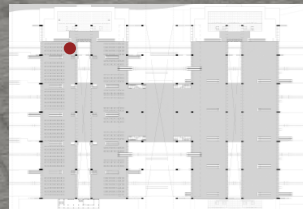
View shows the transition between the entrance and waiting hall.



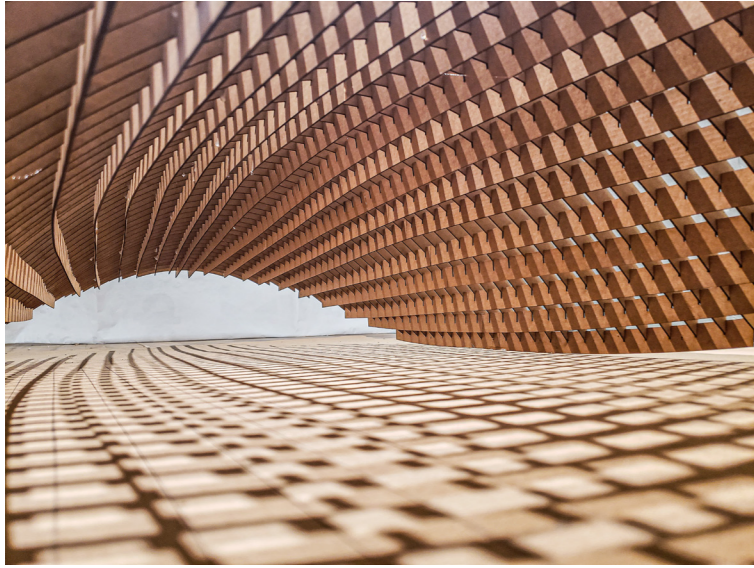
Floor Plan - Waiting Hall

0' 25' 75' 150'





View of the main waiting hall for the departure block. It would have series of waffle structures with sharp edges in between with ETFE or glass skylights. The furniture for this area would be made from concrete, blending with the material of the structure.

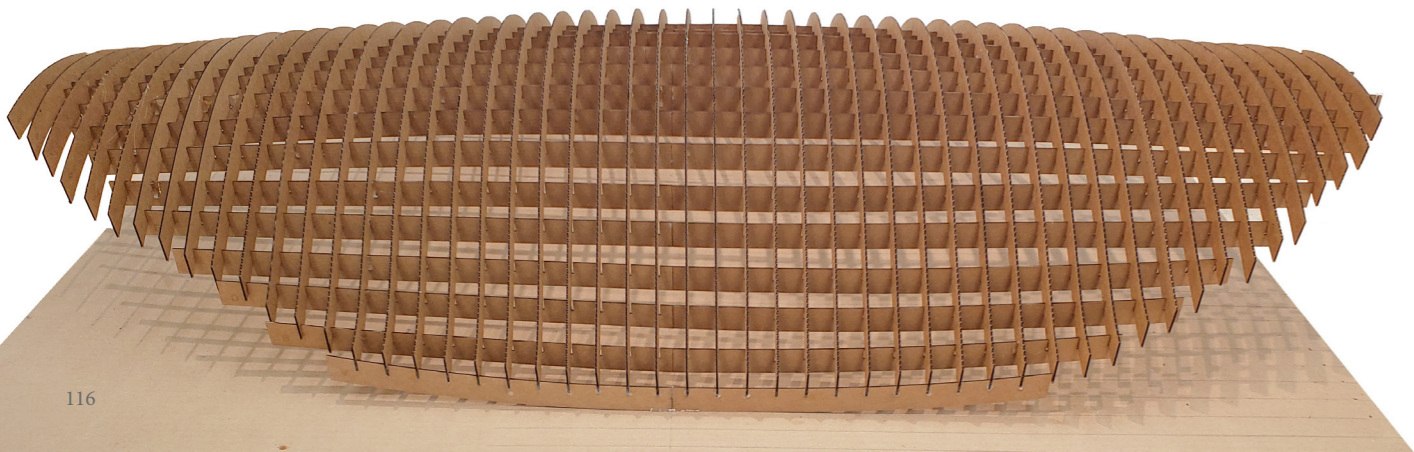


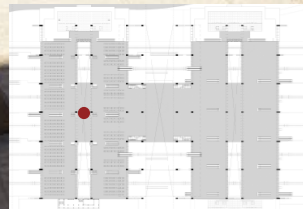
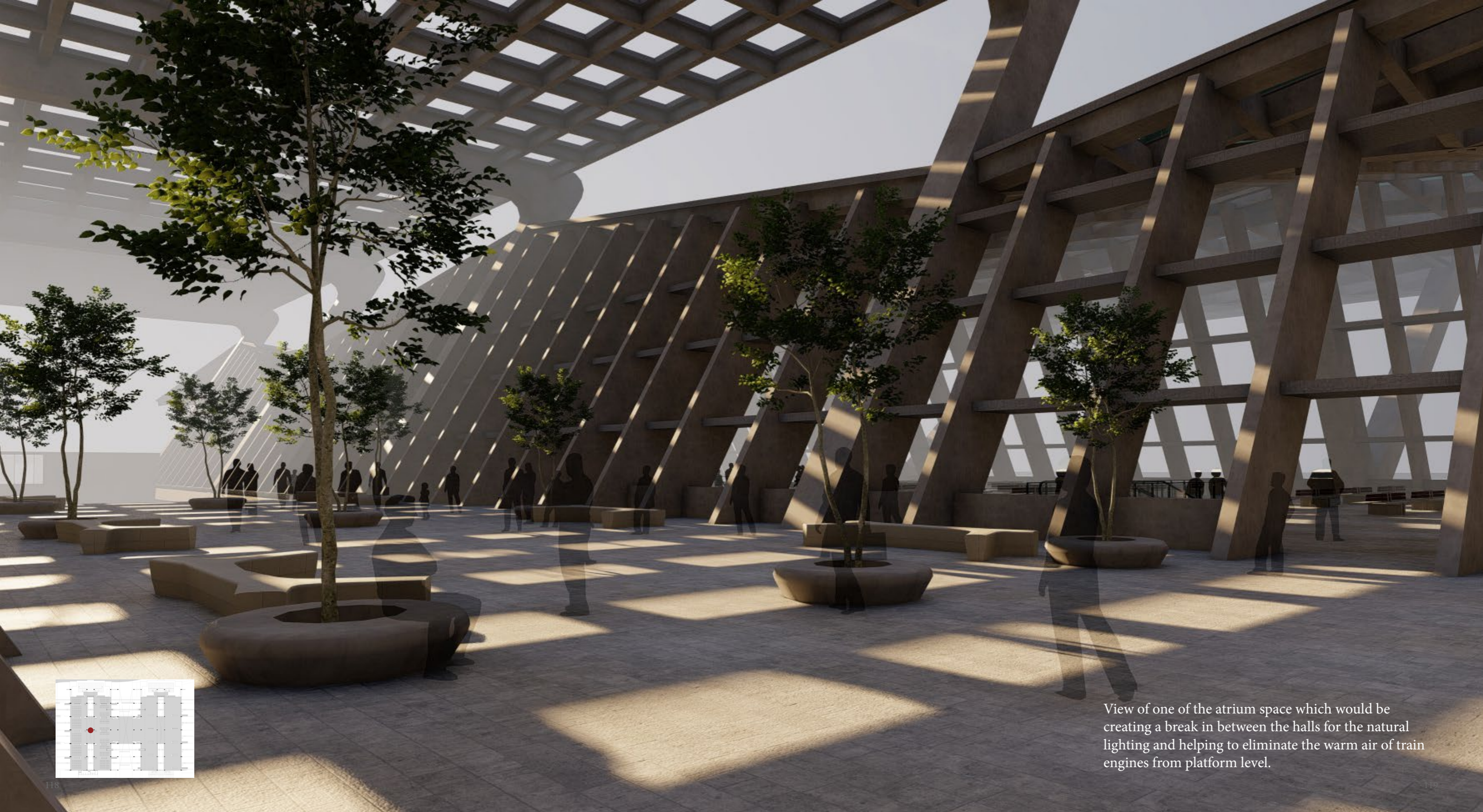
A conceptual study of waffle slab during the design process of how the structure would allow the light inside the building.



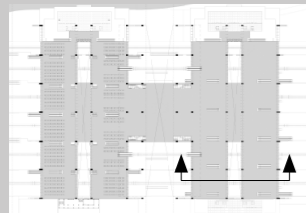
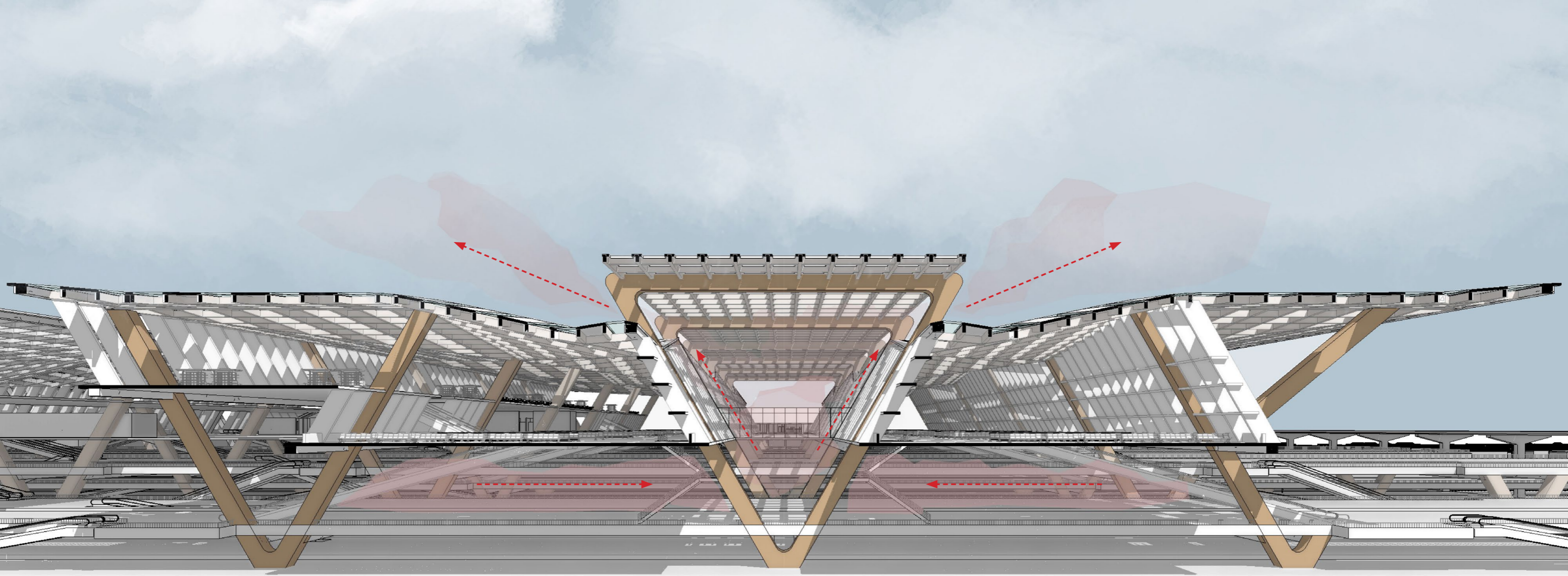
Long-span modernist building.

The design of the waiting hall roof started with the process of experimenting with the waffled structure. The main idea was to bring back the station's modern heritage structure which layered under the contemporary facade and designing the platform the structure which takes influence from the geometric rigidity of the brutalists while exploring new forms of parametric design and construction. It ensures that the low-lying space frame does not overpower the already existing railway station. It aims to blend into the urban fabric while standing as an inspiration for future designs of public spaces.





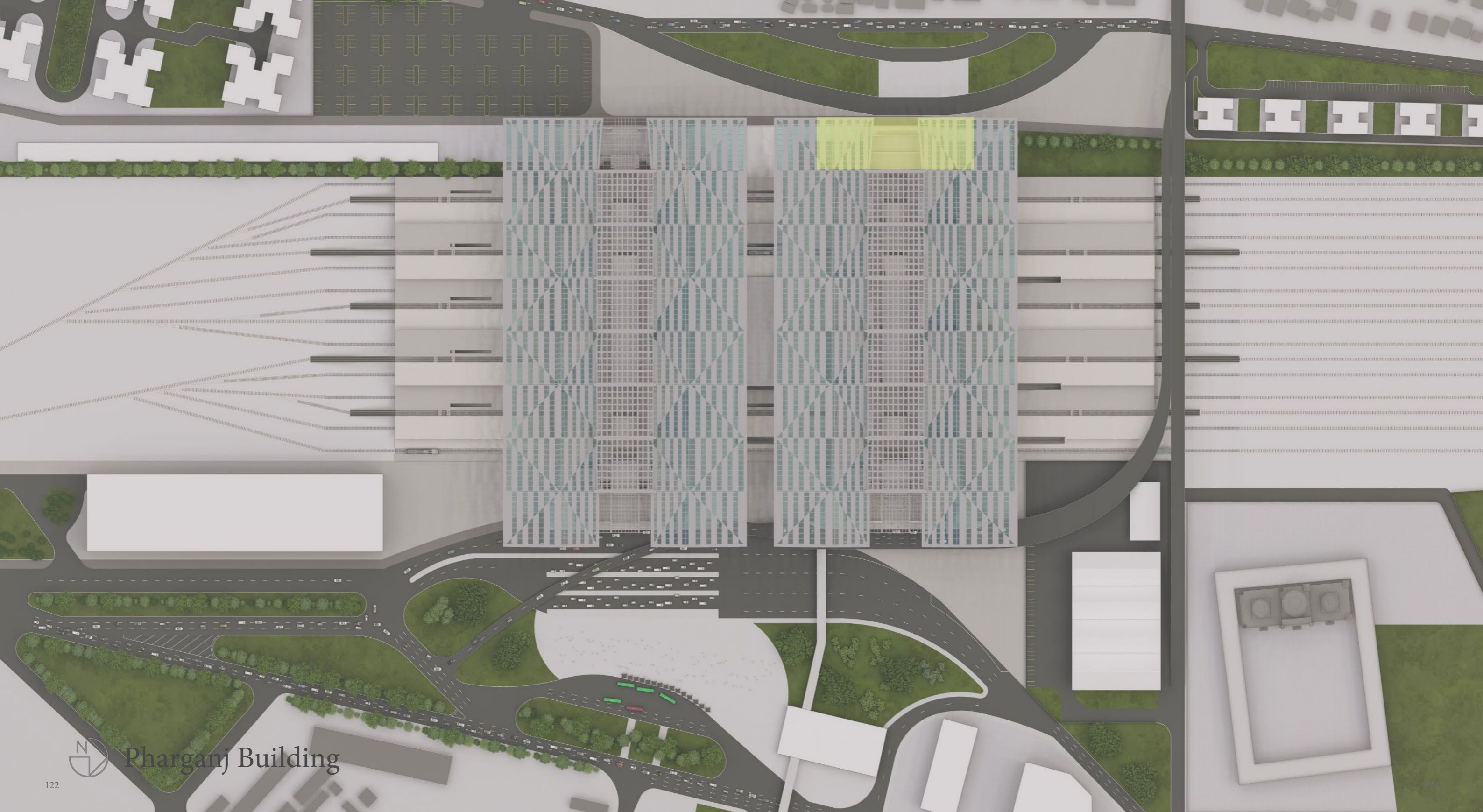
View of one of the atrium space which would be creating a break in between the halls for the natural lighting and helping to eliminate the warm air of train engines from platform level.



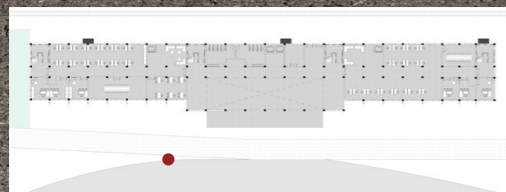
Section B B'

Section showing illumination of natural lightning and elimination of warm air from the train engines at platform level.

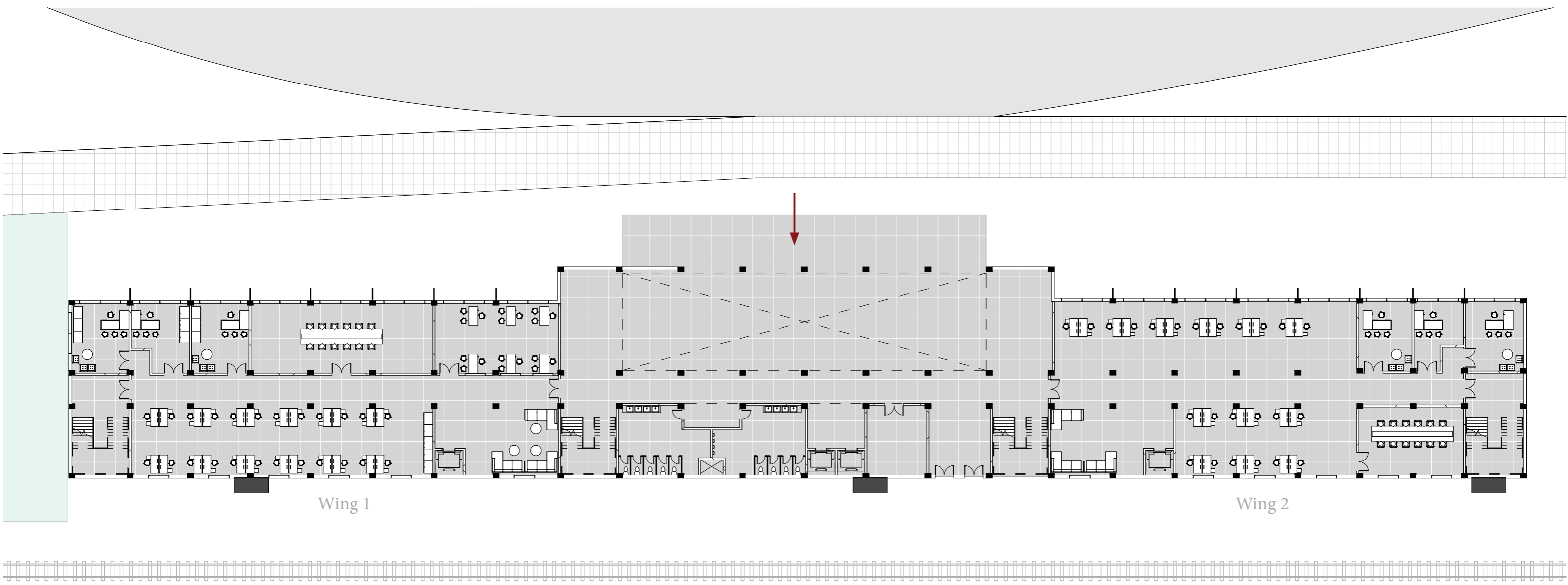




Pharganj Building



View of Paharganj modernist building. Trying to bring back the original architecture which was built in 1955. The structure follows the exposed concrete and shading device as its original structure.

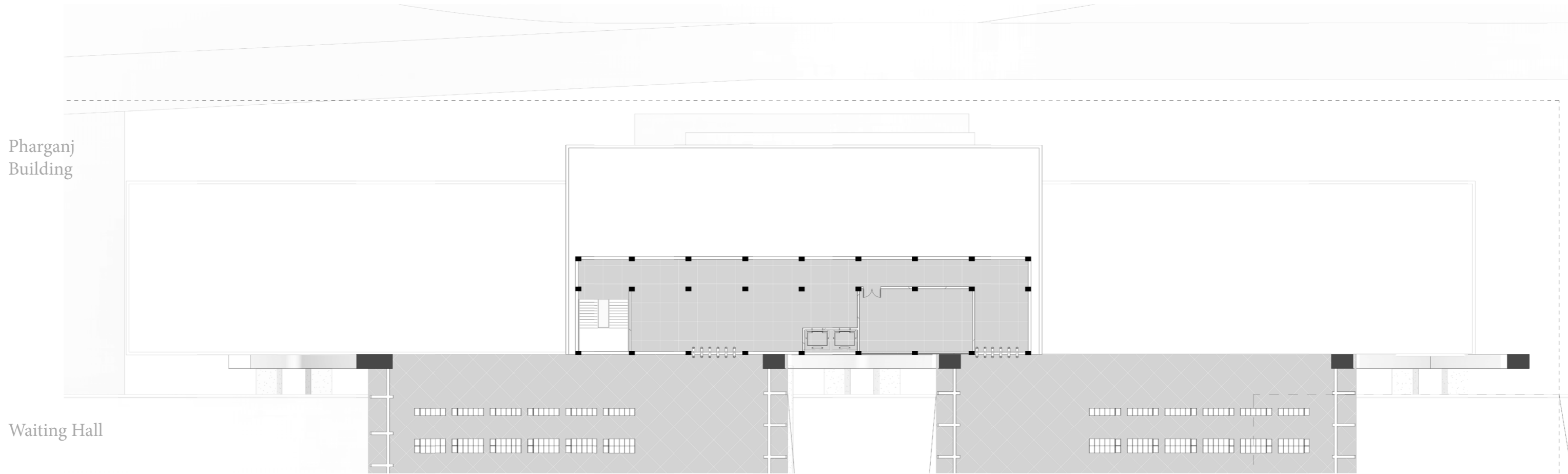


Wing 1

Wing 2

Typical Floor Plan



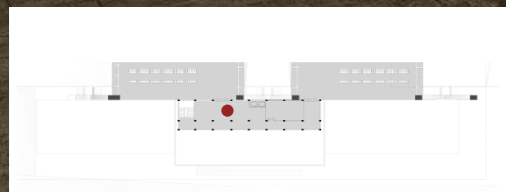


Pharganj Building

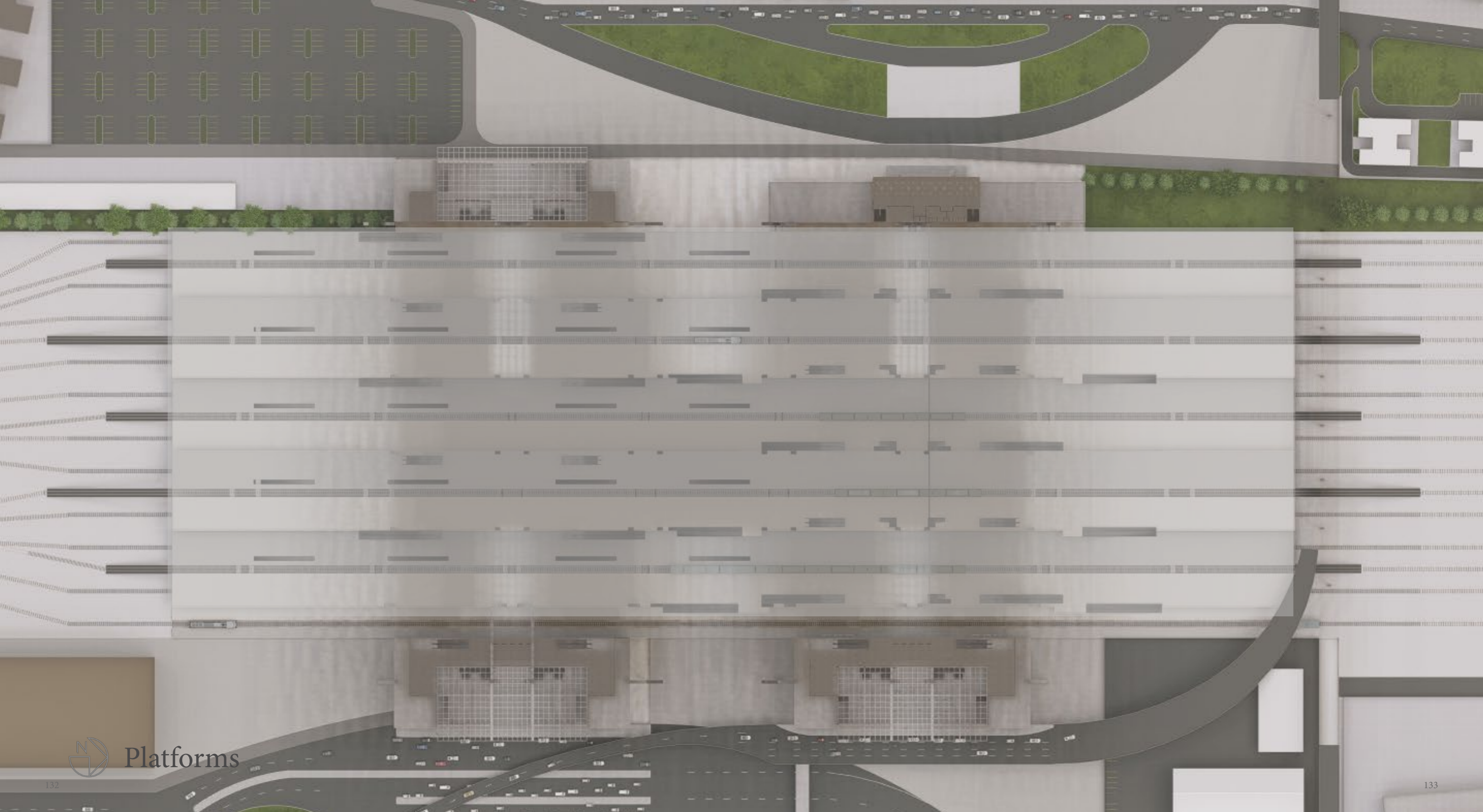
Waiting Hall

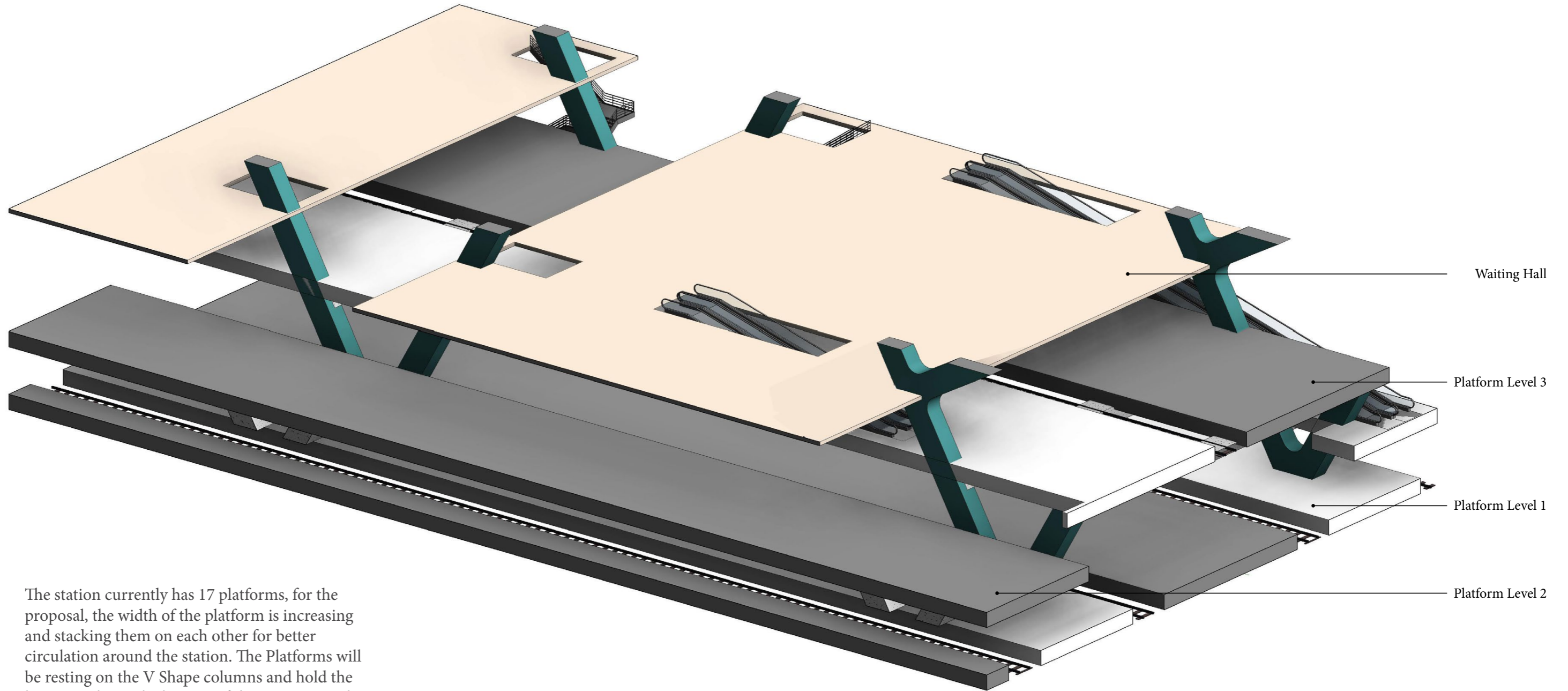
Security office floor plan (connection between waiting area floor and Pharganj building)





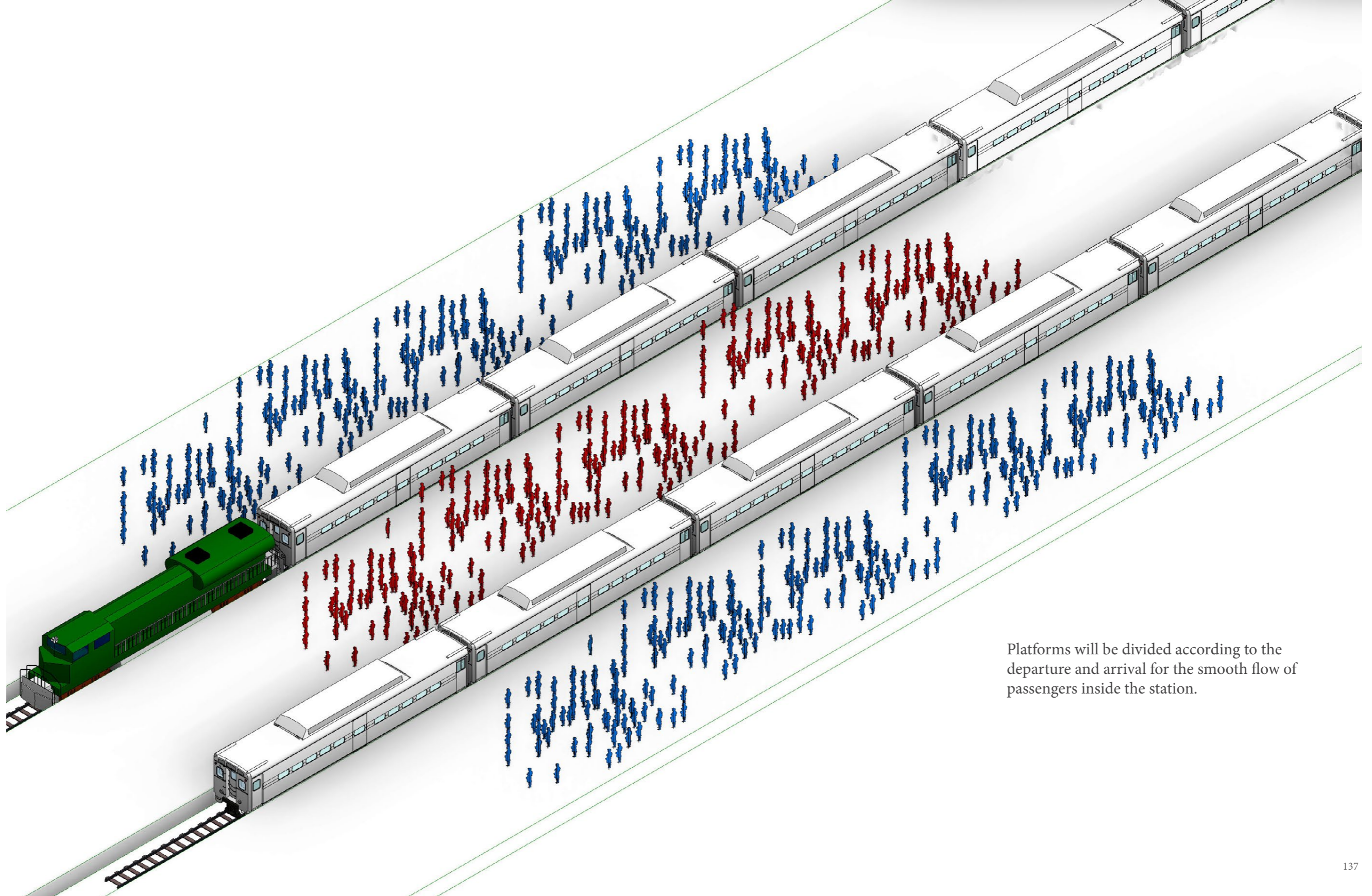
View from security area to the waiting hall.





The station currently has 17 platforms, for the proposal, the width of the platform is increasing and stacking them on each other for better circulation around the station. The Platforms will be resting on the V Shape columns and hold the heavyweight on the bottom of the structure and the top there will be the waiting floor.

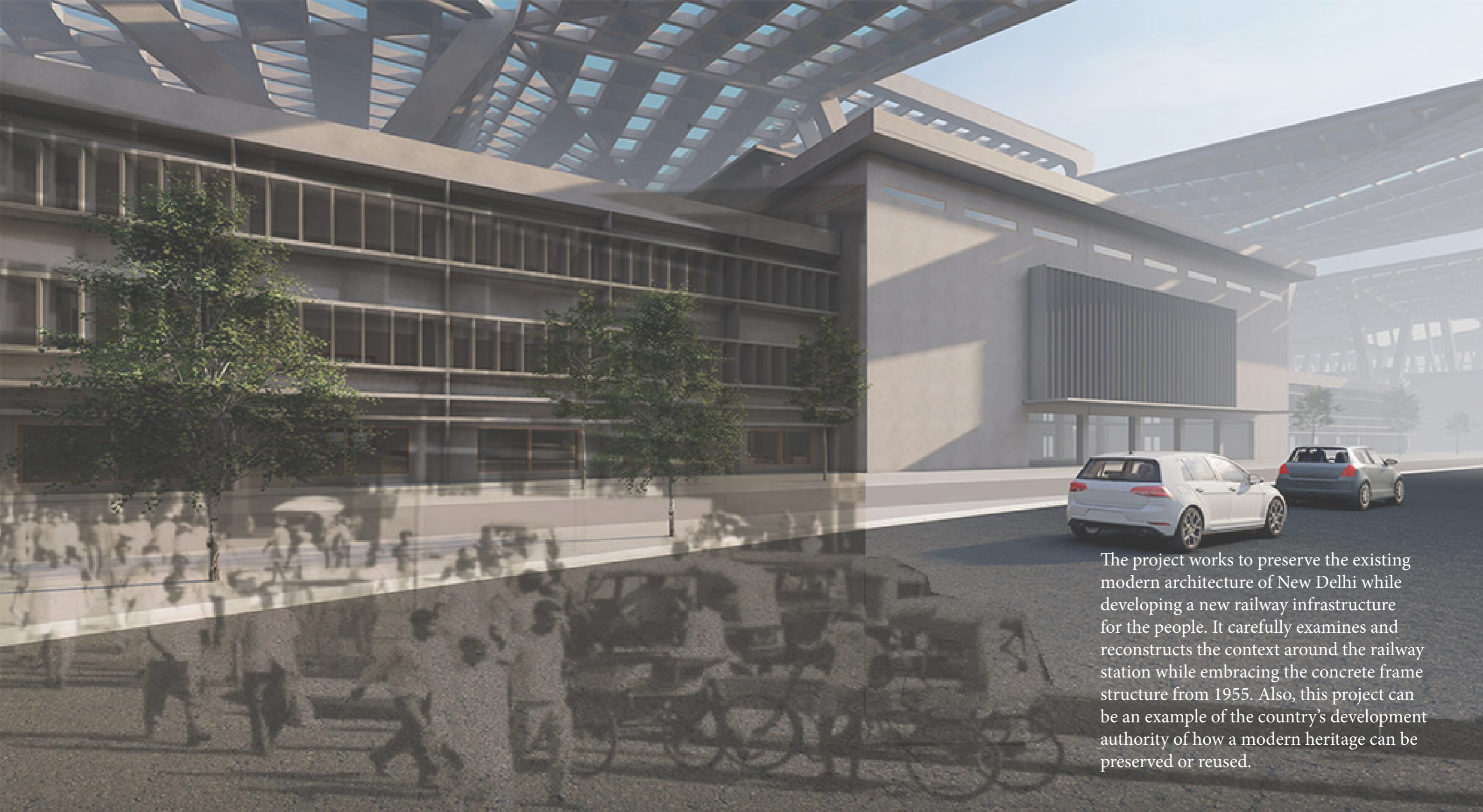
Boarding
Alighting



Platforms will be divided according to the departure and arrival for the smooth flow of passengers inside the station.



CONCLUSION



The project works to preserve the existing modern architecture of New Delhi while developing a new railway infrastructure for the people. It carefully examines and reconstructs the context around the railway station while embracing the concrete frame structure from 1955. Also, this project can be an example of the country's development authority of how a modern heritage can be preserved or reused.

