



Centralstation

Haga

Korsvägen

A NEW DIMENSION

KORSVÄGEN

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Presentation: 2016, June
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A NEW DIMENSION

KORSVÄGEN

An Alternative Proposal to Västlänken's Korsvägen in
Gothenburg, Sweden

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ABSTRACT



This master thesis investigates an existing proposal to transform Korsvägen as part of the Västlänken project and proposes an alternative solution to one of Gothenburg's most complex transportation nodes.

With the growth of Gothenburg and the Västra Götaland region, finding an efficient method to connect the urban core with the outer suburbs is a crucial part of Gothenburg's development. Commuter trains are therefore becoming a more popular mode of transportation for those commuting from satellite cities. The Västlänken project aims to bring regional rail traffic into the urban center by constructing a tunnel beneath Gothenburg with three new underground railway stations at Centralstationen, Haga, and Korsvägen. In order to make better use of the square Korsvägen, the municipality is proposing a series of changes to the square, including traffic flows. The reality of city budgets, the desire to densify the area to maximally exploit floor space, and the political agenda to force a reduction in car traffic frames the existing proposal to reorganize Korsvägen.

This alternative proposal consists of two parts: (1) reorganize the traffic flows above ground in an efficient manner that best feels "natural" to the genius loci of Korsvägen and (2) establish a connection to the new underground commuter rail station that is part of the Västlänken project. The connection between the city square and the underground station is not only a transition between two separate systems but is also a meeting of two different morphological languages.

The resulting proposal will establish the transportation node Korsvägen as a landmark within Gothenburg and use architectural qualities to enhance the transition space by capitalizing on the duality between the underground and above ground systems.

Examiner: Anders Hagson Supervisor: Dag Tvilde (internal), Måns Larsson (external)

CONTENTS

I. INTRODUCTION	5
i. Project Västlänken	7
ii. Korsvägen in the past	11
iii. Korsvägen in the future	15
iv. The two proposals	19
II. EXISTING PROPOSAL	21
III. ALTERNATIVE PROPOSAL	29
i. Traffic node Korsvägen	31
ii. Traffic flows	33
iii. Use of space	41
iv. Comparison	45
v. Station Entrance	51
vi. Documentation	57
vii. Model photos	65
IV. REFERENCES	73

I. INTRODUCTION



In order to keep up with the growth and trends of the 21st century, the city of Gothenburg under the project "Västlänken" is constructing an underground rail tunnel with a series of underground stations, one of them being Korsvägen. Korsvägen has been a traffic intersection and meeting point for hundreds of years – even before the city of Gothenburg expanded around the square. Today the square handles vehicular traffic between several directions: Örgryte and the motorway to the east, Gothenburg city center and Ullevi to the north, Johanneberg to the west, and Mölndal to the south. The square consists of five incoming roads that meet in a large roundabout several lanes wide. Trams and buses proceed to stop in the traffic island in the center of the square. Due to the complexity of the location Korsvägen and to better coordinate the various infrastructure projects with specific investments in the Korsvägen area the municipality has come up with an Urban Development Plan "stadsutvecklingsprogram".

The Development Plan for Korsvägen sets out strategic goals which guide the planning process from zoning to urban design to the design of the buildings themselves. The planning process is done by the municipality and consultants are chosen to come up with proposals for the different parts. Traffic and flows are planned by an arm of the municipality – the traffic planning office "Trafikkontoret". The Västlänken project

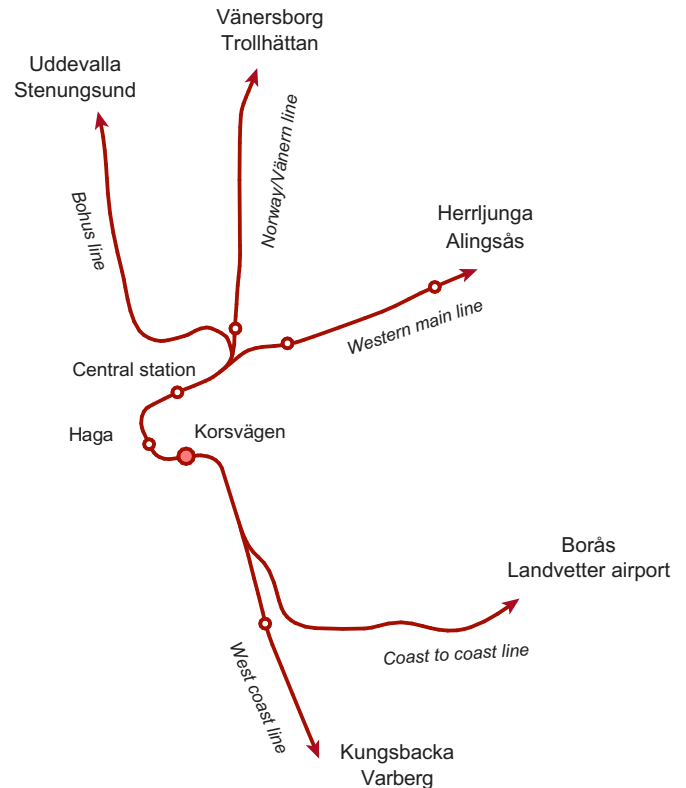
itself is managed by ÅF, a large engineering and consulting company who help determine the placement of the tunnels and stations. The architectural designs of the stations and their connecting buildings are then contracted by various architectural firms. In Korsvägen's case White Architects are responsible for the architectural design based on the technical parameters already determined by the placement of the station below ground and the urban plan above ground. The purpose of this thesis is to present an alternative proposal that challenges the assumptions and limitations of the existing proposal.





Korsvägen's expanded role as a new center within Gothenburg is dependent on the Västlänken - one of the largest infrastructure projects ever undertaken in Gothenburg's history. Like similar projects in Malmö and Stockholm, Västlänken seeks to provide a solution to the various challenges Gothenburg is facing: the need for more efficient connections and the pressures on existing infrastructure due to demographic expansion.

The built-up region Gothenburg has a population of more than 1 million today is estimated to grow to 1,6 million in the coming decade – an increase of roughly 50%. The existing rail infrastructure is based off of a 19th century with some expansions in the later decades. Furthermore, the terminal station's “sack station” layout reduces the capacity of the infrastructure by forcing trains to spend time standing on the platforms and reversing. The large number of tracks terminating at the central station consume a large surface area in the city center. Gothenburg Central serves as a terminus of both regional and distance traffic – commuters traveling to the city center overwhelmingly disembark at that single spot. This existing infrastructure requires a complete update to serve demands of the 21st century.



Source: Stadsutvecklingsprogram för Korsvägenområdet



Central Station

Haga

Korsvägen

Västlänken completely rethinks the rail infrastructure by constructing a 6 km long tunnel with 3 stations under the city center. Regional rail traffic will become through traffic instead of being forced to reverse in the “sack station”. As a result fewer platforms will be required for the central station to serve long distance traffic and tracks can be demolished to free up space for public or private use. Private investors will have the opportunity to profit from the high m2 price in the immediate vicinity. Passengers will be more efficiently connected to the city center due to: (1) trains accessing deeper parts of the city center with the underground stations (2) more connections with public transportation as a result of deeper connections, and (3) less time will be spent by trains waiting for other trains to reverse before entering the station due to limited amount of tracks. Large areas of the Gothenburg city center will be directly connected to Landvetter Airport and satellite cities such as Borås. Instead of disembarking at one spot, passengers will be brought directly to different parts of the city: Central Station, Haga/Vasastan, Götaplatsen, Liseberg, and Korsvägen.

Of the three new stations, Korsvägen is expected to be the second busiest with an estimated usage of 25 000 passengers per day. For comparison, 30 000 passengers are expected to use the Gothenburg Central Station once Västlänken is completed while the busiest station today in Sweden is Stockholm Central with a daily use of 250 000 passengers. Roughly 14 700 people live and 20 000 work within 10 minutes of walking distance from Korsvägen. The vast majority of the passengers are expected to be commuters using the station every day without long waits associated with long-distance traffic. As a through station, Korsvägen will be directly accessible to travelers traveling from/to regional cities as far as Borås, Alingsås, Kungsbacka, and even Trollhättan.

I.ii. KORSVÄGEN IN THE PAST



Source: Johannebergs Landeri

Despite not being part of Gothenburg municipality until 1850, the area was known to handle much of the southbound traffic into and out of Gothenburg. Maps going back to the 1600s show a junction at the exact location where Korsvägen stands today. From the 1600s and 1700s, the surrounding area was used as a collective farm, known as "Landeriet Johanneberg". Accompanying buildings were used as shelter during the summer, of which one of them still stands today on the slopes towards the west of Korsvägen.

It was primarily during the late 19th and early 20th century expansion of Gothenburg due to population growth that the area of Korsvägen became part of the urban fabric. Between 1866 and the 1930's, the city of Gothenburg expanded and reached the area known as Korsvägen today with finely crafted masonry buildings modeled after continental cities. By 1902, electric trams were running in Gothenburg with one of the first lines connecting Korsvägen with Drottningtorget in the city center. The nearby amusement park Liseberg and the Swedish Exhibition grounds Svenska Mässan opened their doors for the Gothenburg Exhibition in 1923.

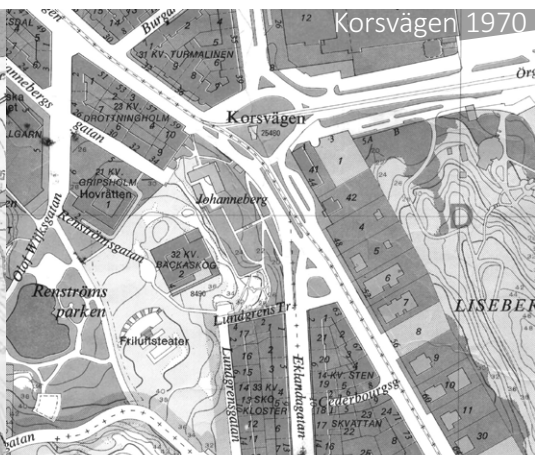
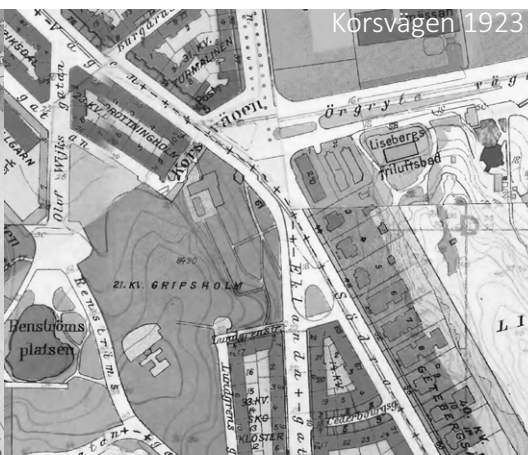
Between 1907 and 1927, Gothenburg's chief urban planner Albert Lilienberg developed plans to extend the city upwards along the slopes of Johanneberg. Inspired by the Austrian architect Camillo Sittes, he sought to align the outer facades of buildings closer to the street in order to expand the court yards of the city blocks. He also sought to follow the slopes of the terrain when laying out the street grid system. The resulting additions of Eklandagatan and the brick buildings are thanks to Lilienberg's urban design.



Source: Kulturmiljöunderlag Korsvägen



Source: Kulturmiljöunderlag Korsvägen





Source: Johannebergs Landeri

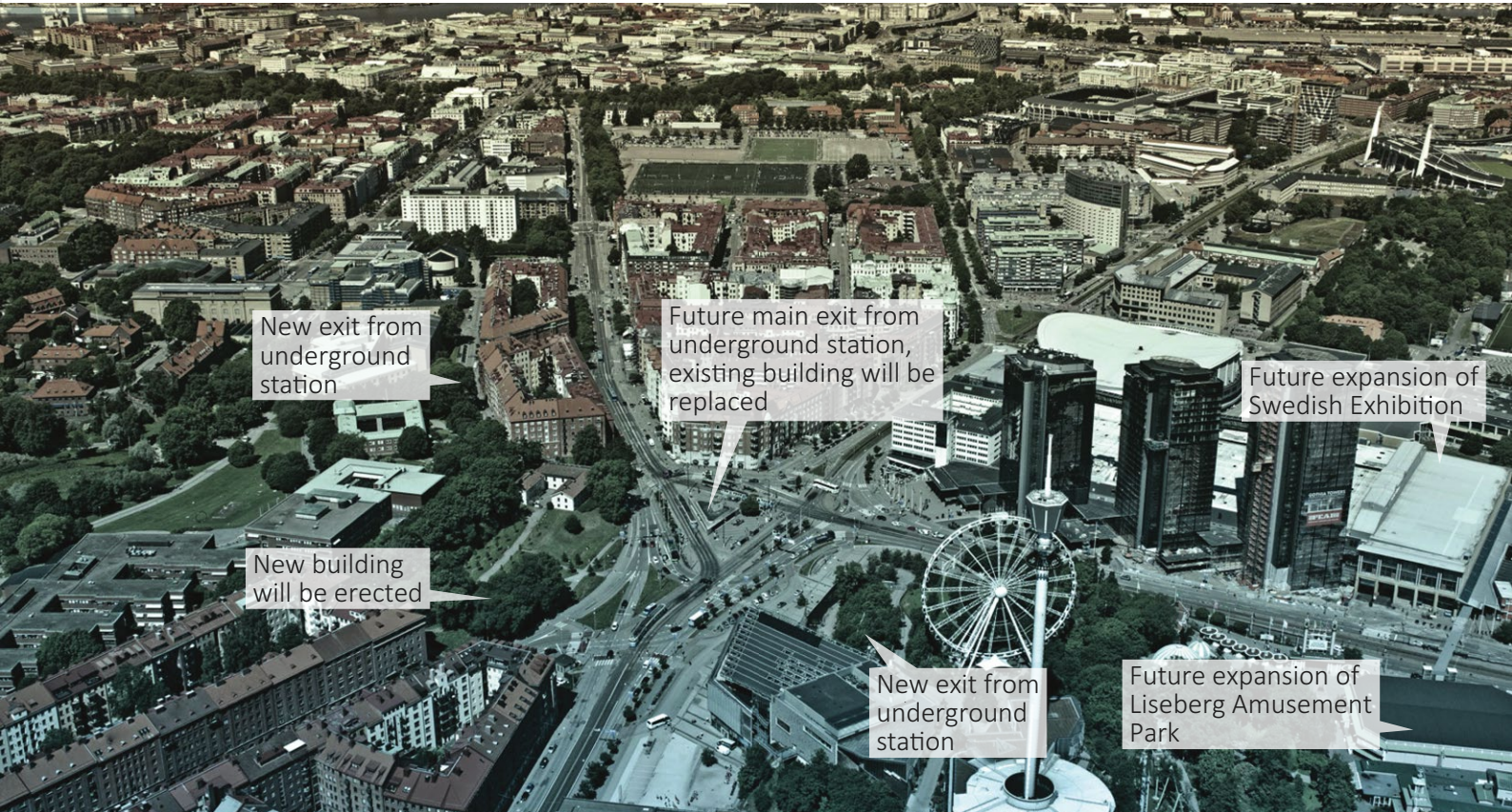
By the 1950's, cars have become a new mode of transportation for the masses and Korsvägen was redesigned with car transportation in mind: the junction became a roundabout for cars. The roundabout was initially located at the northern half of Korsvägen before being expanded to include all five connecting roads due to an increase in traffic. Korsvägen has since handled high volumes of traffic and became the 3rd busiest traffic intersection in Gothenburg. Korsvägen today connects five different roads in five directions and is organized as a very large traffic roundabout around a large triangular-shaped transfer zone. The trams and buses that stop at the square use the "central island".



Source: Johannebergs Landeri

Today the motorization trend reversed and Korsvägen became a focus for the city regeneration and development of public transport infrastructure. Compared its peak during the 1970's, the amount of vehicular traffic has decreased to less than 50% as more people switched to other modes of transportation. The proximity of the city center in addition to the Liseberg amusement park and the Swedish Exhibition center lends itself well to further develop the area. During the 1990's the "Event City" concept emerged to bind together the aforementioned facilities nearby with the city center through Korsvägen. This development ties into the large-scale infrastructure project Västlänken which is set to increase Korsvägen's role as an important public transportation node.

I.iii. KORSVÄGEN IN THE FUTURE



Source: Stadsutvecklingsprogram för Korsvägenområdet

The Urban Development Plan "Stadsutvecklingsprogram" for Korsvägen presents general goals to (1) strengthen the accessibility of the square, (2) improve the quality of life, and (3) improve the attractiveness of the event facilities in the area. Korsvägen is strategically wedged between the urban core, the city park Renströmsparken, and an area filled with large-scale cultural facilities (such as the Swedish Exhibition and Liseberg Amusement Park). Any plans to improve the quality of this "in-between" space requires a holistic view of Korsvägen's role in Gothenburg and the region Västra Götaland. This includes any infrastructure plans that affect Korsvägen, including the Västlänken project. It is therefore crucial to maximize the synergies between the Västlänken project and Korsvägen's development plan.









The Urban Development Plan prioritizes accessibility for pedestrians over vehicles through investments in public transport infrastructure and by forcing a reduction in car traffic. The plan calls for P+R spaces to be built close to motorway exits to encourage use of public transportation. The plan also calls for a reduction of the number of lanes from the incoming road Örgrytevägen and only outbound traffic will be allowed on Skånegatan. At the same time, pedestrians and cyclists will enjoy more space on both sides of the road. The large roundabout will be restricted to one lane from the 2-3 lanes today while expanding the large traffic island in the center for passengers using public transportation. All of these plans are dependant on rerouting traffic from the motorway to other exits so that Örgrytevägen does not remain as a "feeder" of traffic coming to/from the motorway.



Source: Stadsutvecklingsprogram för Korsvägenområdet

The Urban Development Plan seeks to improving the quality of life for those living and using the area through specific interventions and investments in the area. Despite its location next at the edge of the 19th century urban core and Renströmsparken, Korsvägen lacks small-scale activities that enhance street life. The development plan calls for additional buildings to be constructed on the borders of Korsvägen and the nearby Renströmsparken. These buildings could house small-scale retail or consumption such as cafes or restaurants. Furthermore, the buildings are intended to act as a barrier between Renströmsparken's relaxed tempo against the bustle of Korsvägen. Reducing vehicular traffic in the area also helps in reducing pollution and noise pollution. The greenery surrounding the nearby Landeriet is set for a major intervention – today the hillside between Korsvägen and Renströmsparken is an unattractive place for visitors.

A key point of the Urban Development Plan is to strengthen the profile of Korsvägen as a location to host major events with high cultural capital. There are already several cultural and leisure facilities that attract visitors from other parts of Sweden and abroad: scandinavia's largest amusement park Liseberg, the Swedish Exhibition grounds, and museums such as Universeum. The development plan calls for a stronger interconnectedness and more interchangeability between these facilities. Additional buildings around Korsvägen would bring the benefit of being able to house more cultural facilities. Örgrytevägen can be used for parades and festivals once the traffic from the motorway is rerouted. Västlänken's new station under Korsvägen will have exits that allow passengers to directly access the nearby cultural and event facilities without crossing any of the roads.

-  New construction
-  New pedestrian/cycle path
-  Motorway traffic
-  Green pathway
-  Square and meeting area
-  Green meeting area
-  Underground station exit
-  Bus/tram stop

I.iv. THE TWO PROPOSALS





Source: Ölskroken planskildhet och Västlänken, Gestaltungsprogram

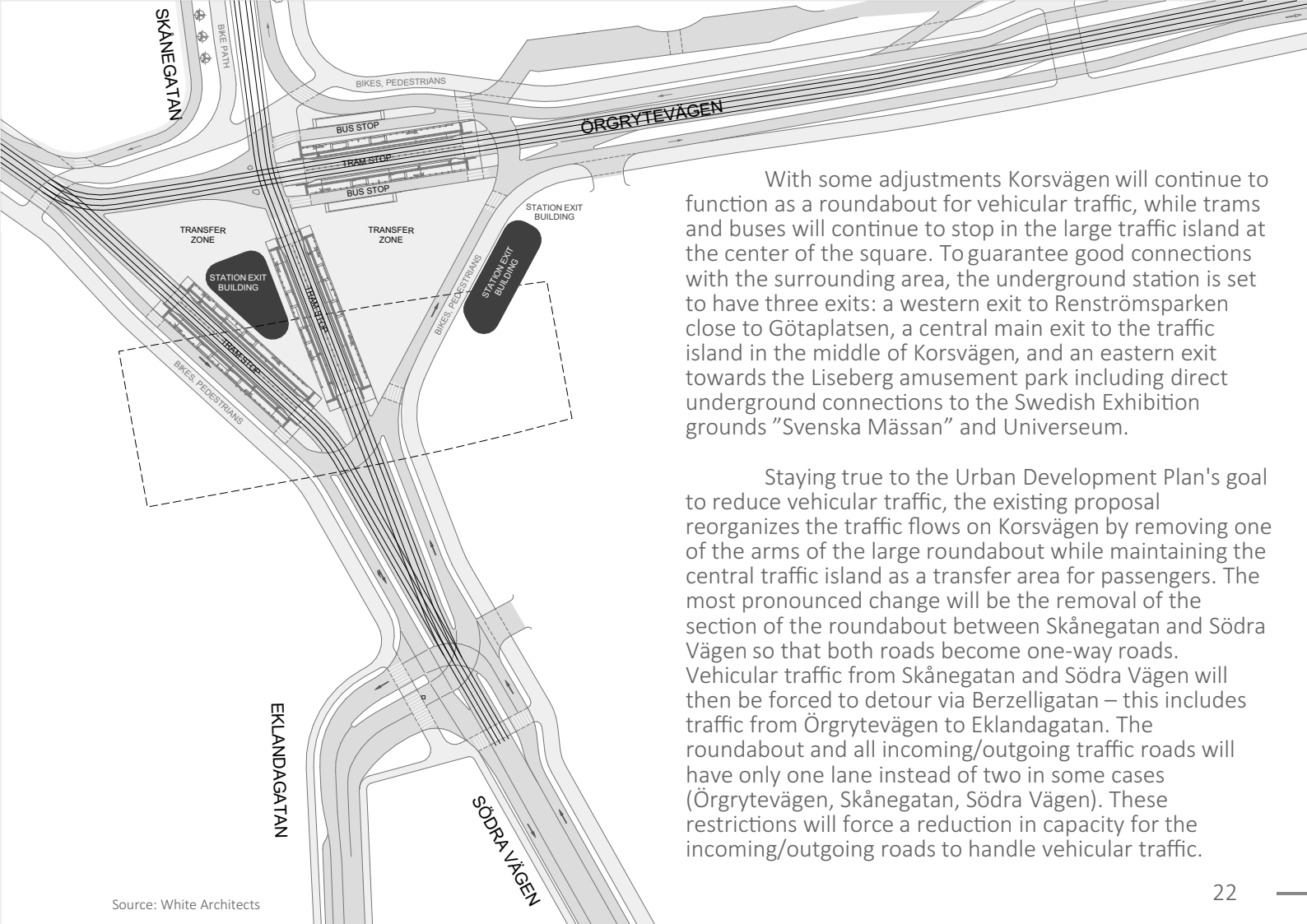
The existing proposal for Västlänken's new station at Korsvägen is dependent on the solution to traffic node itself, which in turn follows the goals of the Urban Development Plan. The municipality is responsible for planning Korsvägen's traffic flows, ÅF for planning the location of the underground station, and White Architects for planning the architecture of the station along with the exits. The contracted firms are limited by the scope of their contracts and therefore do not have a holistic view of the project. Therefore, the resulting plans are beholden to the work process and the order in which the different contracts are done.

The alternative proposal presented in this thesis is developed in an academic environment without the limitations of budgets and responsibilities. This proposal focuses on the main concept without being carried away by minor details and technical requirements such as fire safety above the tracks. However, this proposal does not challenge the goals of the Urban Development Plan and adheres to the same zoning principles as the existing proposal.

II. EXISTING PROPOSAL

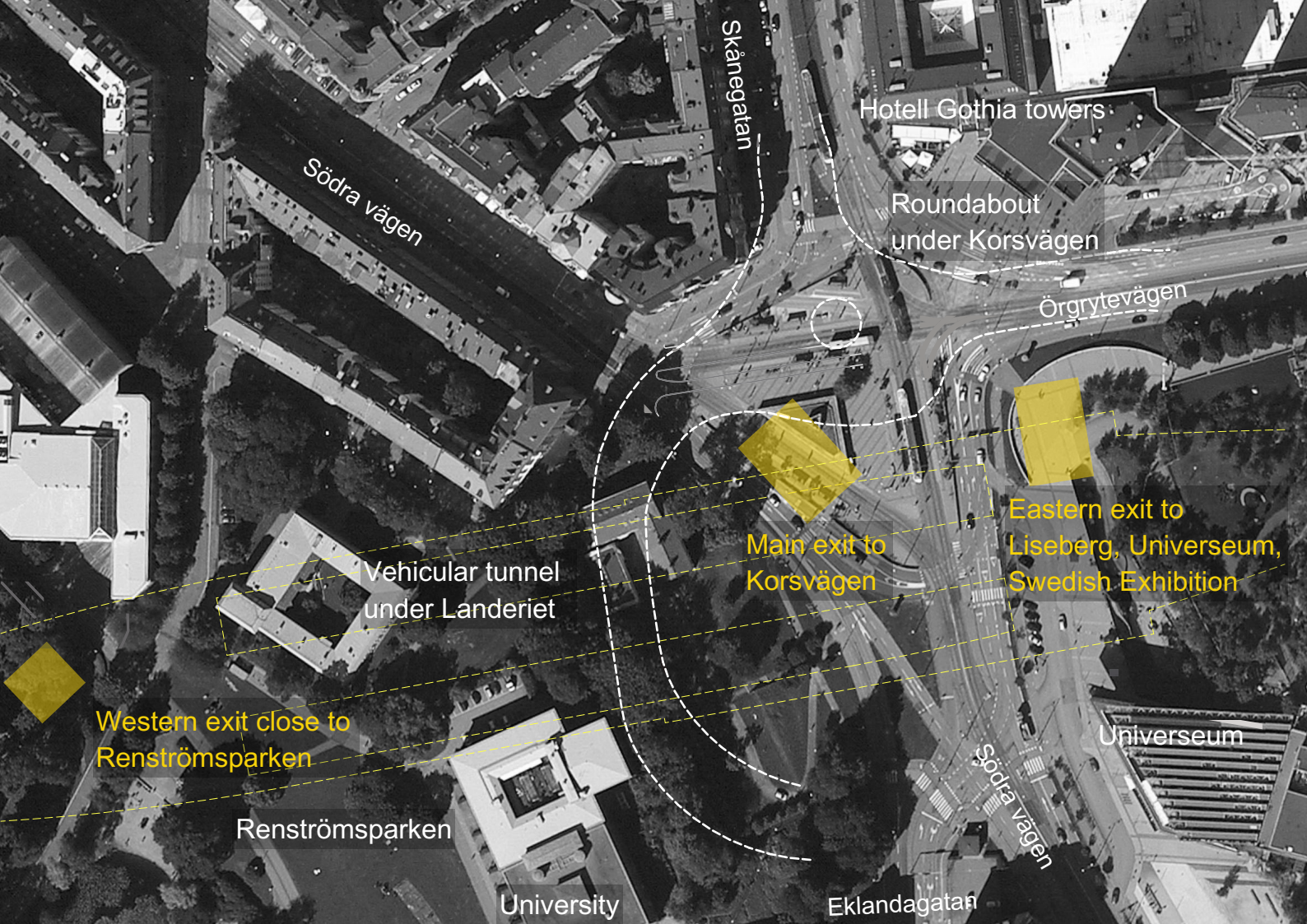


Source: Olskroken planskildhet och Västlänken, Gestaltungsprogram



With some adjustments Korsvägen will continue to function as a roundabout for vehicular traffic, while trams and buses will continue to stop in the large traffic island at the center of the square. To guarantee good connections with the surrounding area, the underground station is set to have three exits: a western exit to Renströmsparken close to Götaplatsen, a central main exit to the traffic island in the middle of Korsvägen, and an eastern exit towards the Liseberg amusement park including direct underground connections to the Swedish Exhibition grounds "Svenska Mässan" and Universeum.

Staying true to the Urban Development Plan's goal to reduce vehicular traffic, the existing proposal reorganizes the traffic flows on Korsvägen by removing one of the arms of the large roundabout while maintaining the central traffic island as a transfer area for passengers. The most pronounced change will be the removal of the section of the roundabout between Skånegatan and Södra Vägen so that both roads become one-way roads. Vehicular traffic from Skånegatan and Södra Vägen will then be forced to detour via Berzelligatan – this includes traffic from Örgrytevägen to Eklandagatan. The roundabout and all incoming/outgoing traffic roads will have only one lane instead of two in some cases (Örgrytevägen, Skånegatan, Södra Vägen). These restrictions will force a reduction in capacity for the incoming/outgoing roads to handle vehicular traffic.



Södra vägen

Skånegatan

Hotel Gothia towers

Roundabout under Korsvägen

Örgrytevägen

Eastern exit to
Liseberg, Universeum,
Swedish Exhibition

Main exit to
Korsvägen

Vehicular tunnel
under Landeriet

Western exit close to
Renströmsparken

Renströmsparken

University

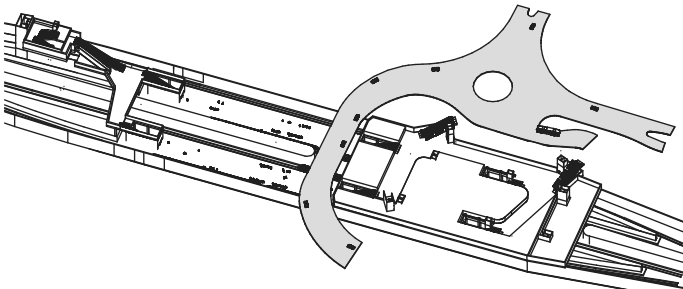
Eklandagatan

Universeum

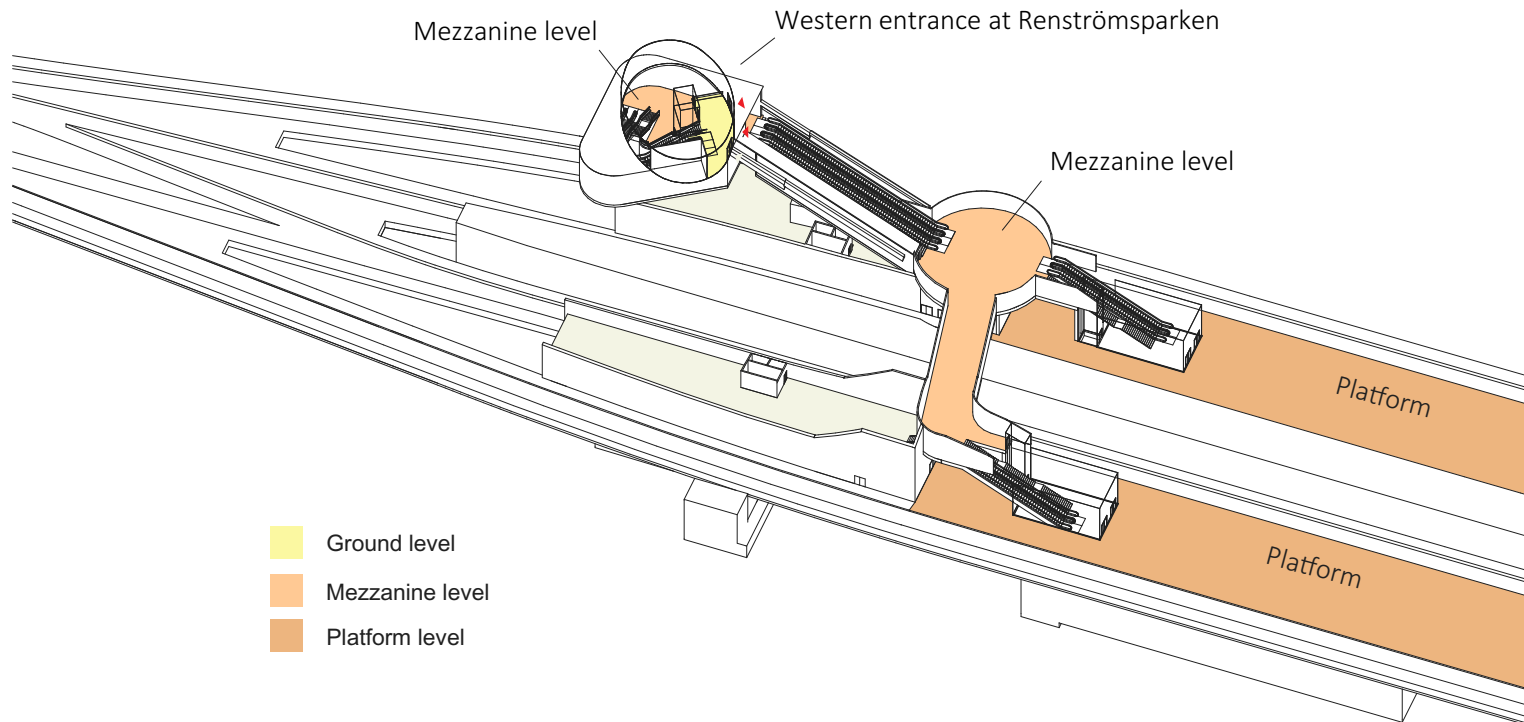
Södra vägen

The tram- and bus routes will be unchanged with the exception of leaving open the possibility that trams from Örgrytevägen take a detour via Skånegatan instead of Södra Vägen. The traffic island in the center will be expanded and the E-W tram stop will be moved to the east of Skånegatan along Örgrytevägen. As a result, the entire roundabout would chamfer or "cut off" a street corner which is used as a large stretch of empty pavement today. Because the E-W stop is the most used stop, trams and buses will be separated into parallel stops. Traffic towards Eklandagatan from Södra Vägen will use a conventional intersection instead of a separate lane. That same intersection will be moved to the south to free up construction space for a new building where the traffic lane towards Eklandagatan stands today. Tram stops will be lengthened to 45 meters to allow for longer trams and buses. These measures are in line with the Urban Development Plan's goals to restrict vehicular traffic and promote public transportation.

The layout of the underground station and the exits connecting the transfer area above are borne out of the planning process. At one point, a traffic plan with a vehicular tunnel and underground roundabout was considered by the planners as a way to "hide" vehicular traffic above ground. Planners then decided to place the underground station a bit to the south of the interchange. However the proposal with the underground roundabout just beneath the square was withdrawn in favor of retaining vehicular traffic above ground. Changing the underground station location along with the incoming/outgoing rail tunnels would have been problematic so the station's location remains slightly shifted to the south of the main transfer area at Korsvägen.

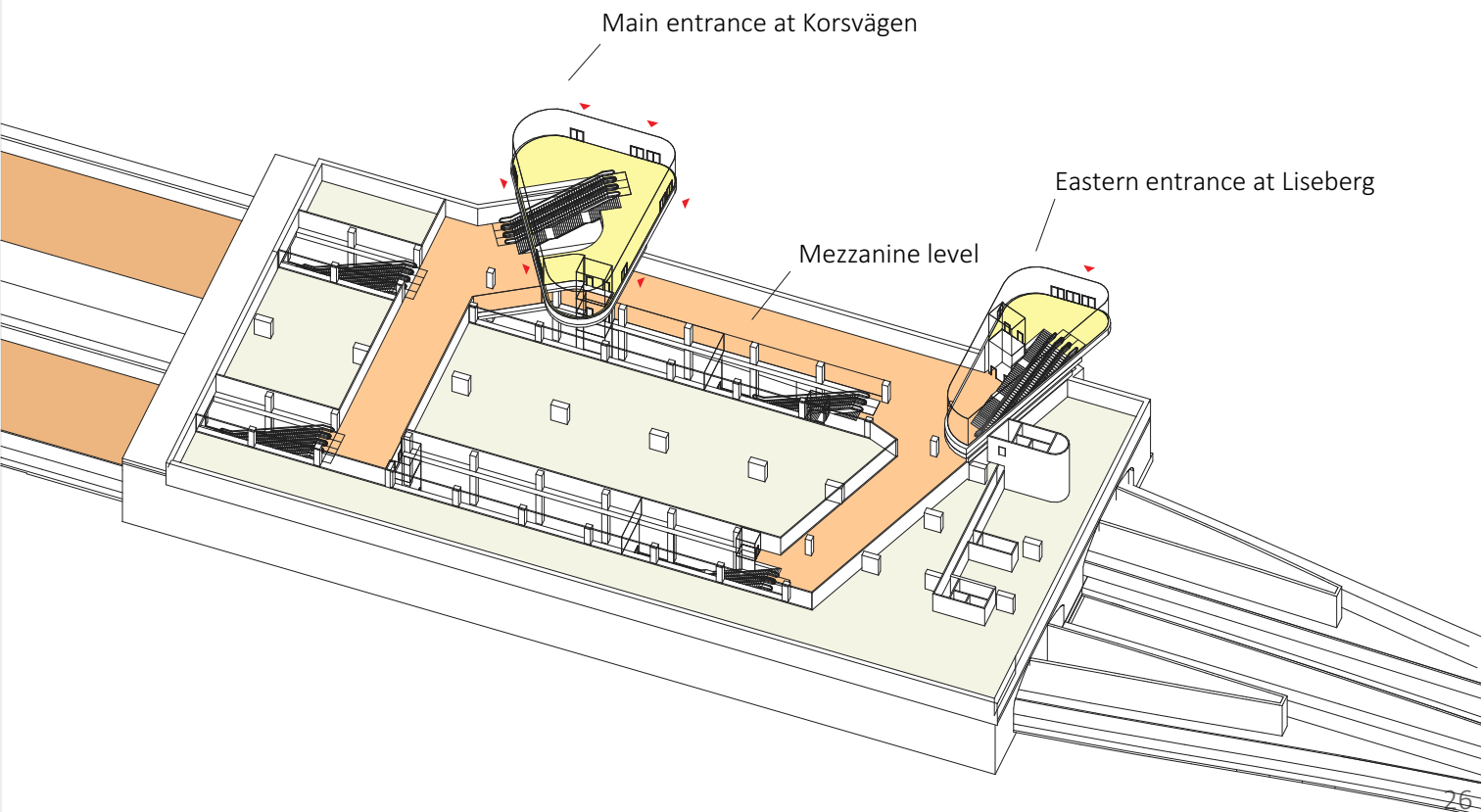


Source: Olskroken planskildhet och Västlänken, Gestaltungsprogram



AXONOMETRIC VIEW: EXISTING PROPOSAL

Source: Olskroken planskildhet och Västlänken, Gestaltungsprogram



The structure of Station Korsvägen is a result of the local ground conditions – the western half of the station lies in solid rock while the eastern half in soft clay. The ground directly under Korsvägen consists mostly of clay which necessitates the eastern half of the station to consist of a concrete box structure. The western half of the station extends into solid rock under Renströmsparken. The western exit towards Renströmsparken/Götaplatsen consists of escalators dug in solid rock while the two exits to the east towards Korsvägen and Liseberg use an intermediate mezzanine level located within the concrete box structure. Passengers using these exits to Liseberg or Korsvägen do so via sets of escalators/lifts/stairs to the mezzanine level and then via additional sets of escalators/lifts/stairs to the surface. The mezzanine level contains floor space useable for retail purposes and technical installations while gaps in the slab directly above the platforms enable a ceiling height of 12 meters. A row of pillars line the middle of the box structure to support the slab above the mezzanine level on which the ground level is located. The row of pillars become a wall of solid rock where the station crosses into the solid rock mountain under Renströmsparken. This transition is clearly visible from the platforms within the station.



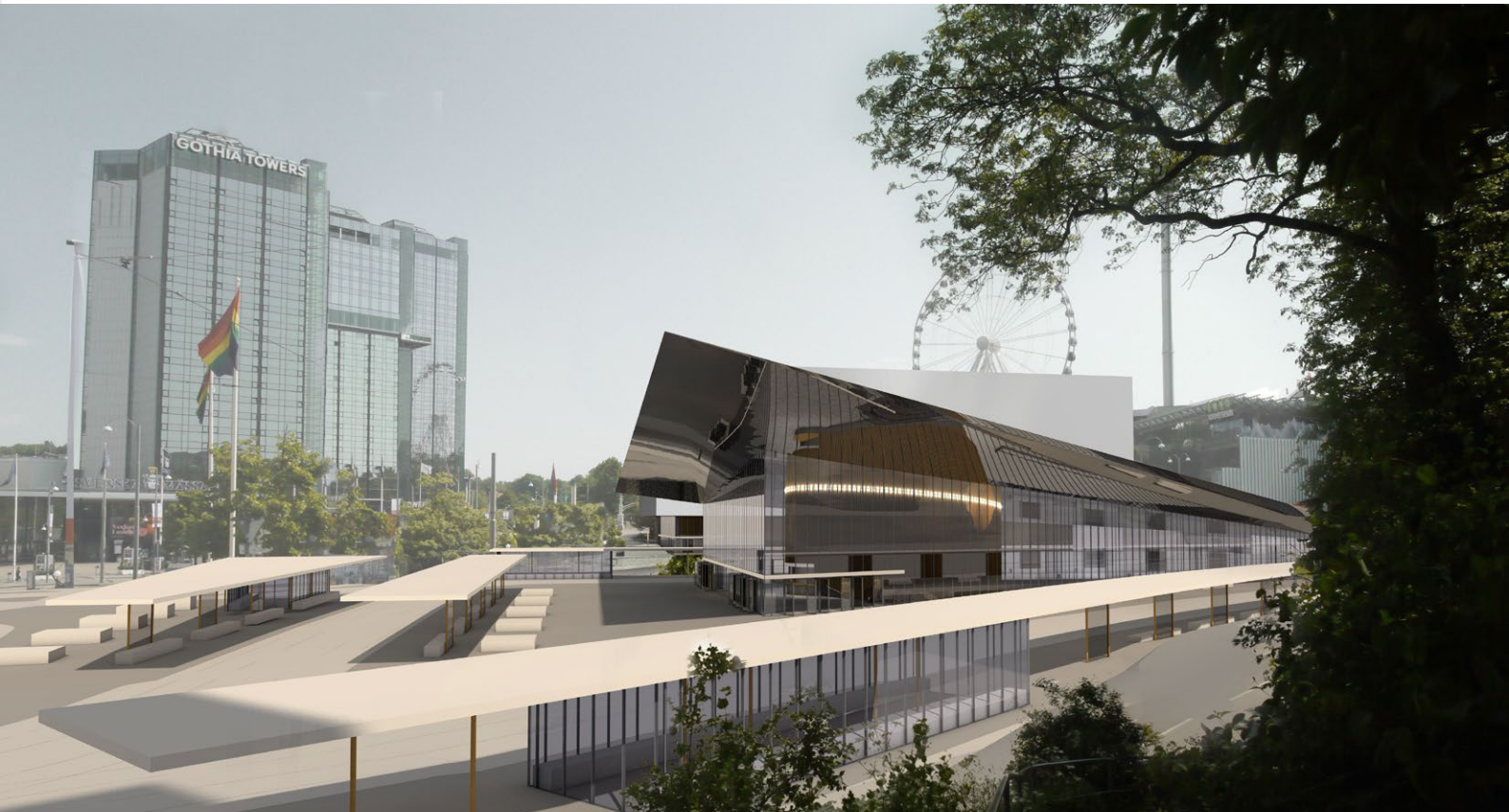
Source: Olskroken planskildhet och Västlänken, Gestaltningssprogram

The main purpose of the station's architectural design is to instill a sense of security and continuity for the passengers using the station. To avoid unpleasant contrasts that come with direct sunlight, the existing proposal seeks to adjust the amount of natural light that filters down onto each level of the station: natural light enters the mezzanine level via light shafts and the platform level via solar tubes. Passengers on the platforms would thus experience lighting conditions not unlike the prevailing conditions outside. Passengers entering/exiting the station would not have to cope with their eyes adjusting to a sudden difference in lighting and could easily orient themselves if there are visual connections between the three (ground, mezzanine, and platform) levels of the station. Passengers waiting on the platform would be able to better orient themselves and see as much as possible of the entire platform and beyond the pillars to the parallel platform on other side. At a generous width of 19 meters, the platforms can be divided into zones for waiting, moving, and resting with ample space for seating.



Source: Olskroken planskildhet och Västlänken, Gestalttningsprogram

III. ALTERNATIVE PROPOSAL



Challenging the traffic solution of the existing proposal, the alternative proposal comes up with a different traffic solution along with a different physical connection to the underground Station Korsvägen. The alternate proposal focuses on: (1) analyzing the existing traffic flows above ground, (2) how the different areas of the square Korsvägen are/will be organized, (3) how the main exit will connect to the existing infrastructure in the future, and (4) how the functions of the main exit will contribute to the square. This proposal does not change: (1) the goals of the Urban Development Plan, (2) the parameters of the station such as location and the types of functions, or (3) the design of the underground platforms themselves. The above-ground conditions and traffic flows are to be radically changed in this proposal which will also result in a different solution for the main station exit to Korsvägen.



III.i. TRAFFIC NODE KORSVÄGEN





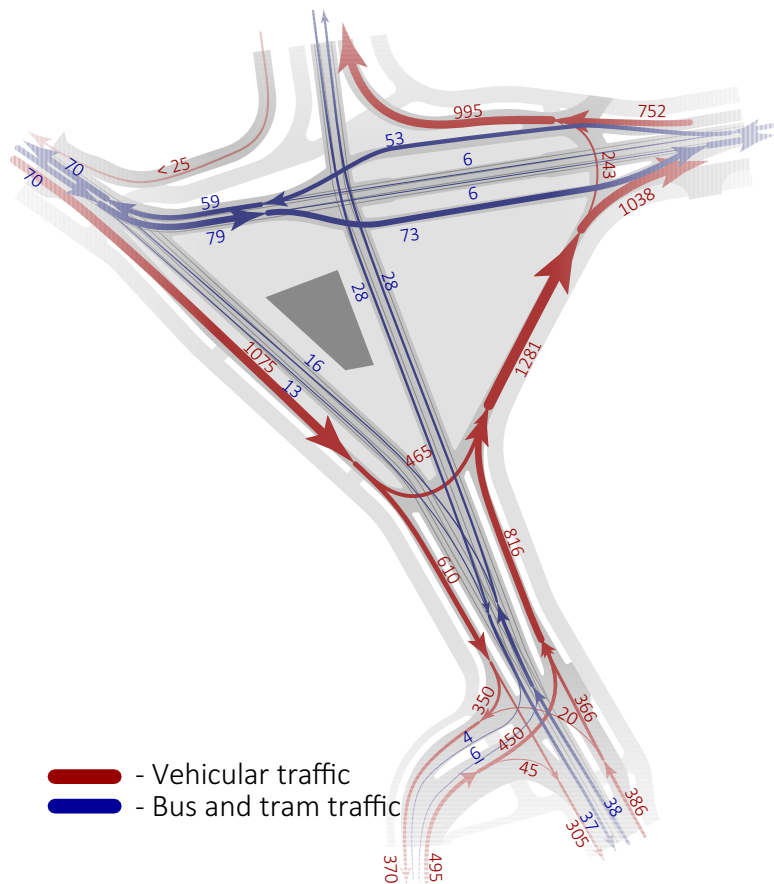
The alternative proposal fundamentally rethinks Korsvägen as a traffic intersection by replacing the large roundabout around the square with two smaller roundabouts on the west side. This will remove any barriers between the central transfer zone and Renströmsparken to the west. To realize this concept, one out of the four incoming roads (Södra Vägen) is eliminated from the intersection. As a result, vehicular traffic arriving from the one-directional Södra Vägen to the north will arrive to Korsvägen via Skånegatan instead. Södra Vägen to the north will become a Cul-de-sac intended for those using the nearby blocks for residence or business. Tram routes will be unchanged and passengers will continue to use the three pairs of tram stops surrounding the central transfer zone. The transfer zone will be greatly expanded to roughly double today's size and is set to contain the main exit from the underground station. Long distance buses may stop along the section of road between the two roundabouts at bus stops that run parallel to the tram tracks running along the north-south axis.

III.ii. TRAFFIC FLOWS

Traffic flows have been modeled by a consulting firm WSP with the help of a simulation program VISSIM. The firm has done vehicular traffic flow simulations for two cases: traffic flows in 2014 and the estimated traffic flows in the year 2035. Values for pedestrian traffic flows are used from the year 2035. The estimated vehicular traffic flows assume that a 15% reduction of vehicular traffic using Korsvägen will occur between 2014 and 2035. This is based on extrapolation the trend since 1970 that less vehicles use Korsvägen. However this thesis will use the vehicular traffic values from 2014 to better compare the effects both proposals have on the traffic flows by excluding any other variables. Values used in this analysis represent the number of vehicles during the peak hour. Values used for buses and trams are derived from their respective bus / tram schedules.

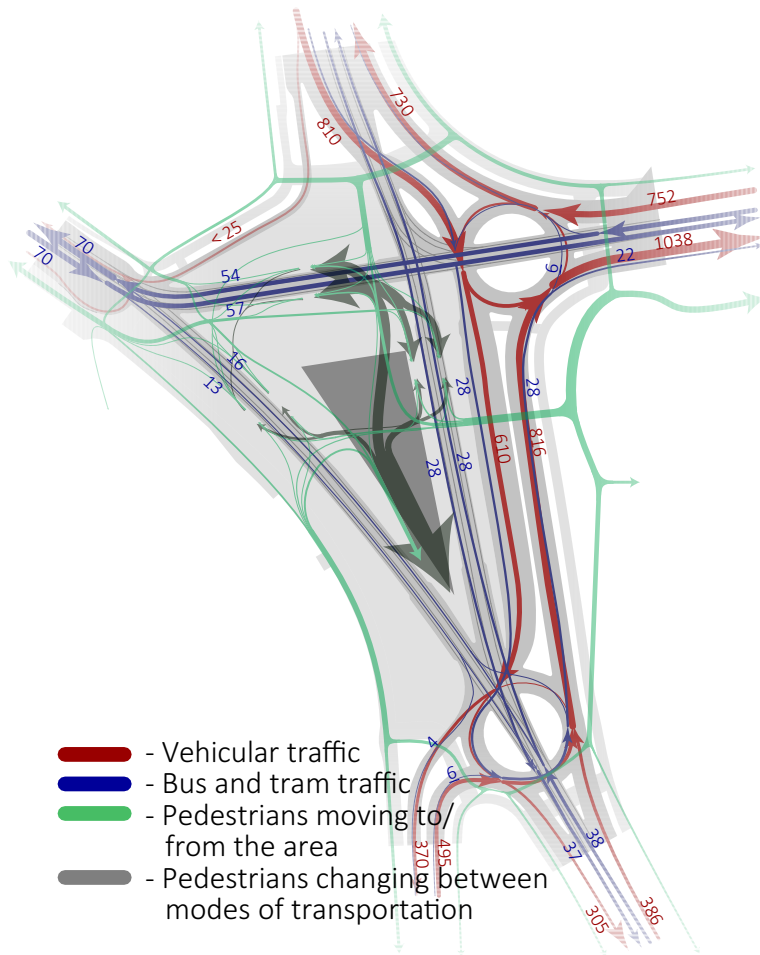






Skånegatan under the existing proposal becomes unidirectional for through traffic so that vehicles will use Södra Vägen to the north to access Korsvägen. As a consequence vehicles from Örgrytevägen towards the southbound roads will take a longer detour to the north via Berzelligatan and arrive to Korsvägen from the northwest via Södra Vägen. A large amount of vehicles will continue to use the roundabout (1000-1300 vehicles/rush hour) as per WSP's calculations for 2014. Unlike the situation today where the same amount of traffic is distributed among 2-3 lanes, the existing proposal leaves only one lane in each arm of the roundabout for these vehicles. Each arm of the roundabout will contain 2-3 pedestrian crossings without traffic lights. Pedestrians seeking to use the bus/tram transfer area need to cross one of the arms of the roundabout at least once while those passing through Korsvägen will need to use multiple pedestrian crossings. Bus and tram traffic is largely unchanged with the exception of the tram/bus stop in the east-west direction: the stop has been moved to the east and the stop has been doubled so it can handle the high volumes of bus and tram traffic. Passengers switching between the east-west and north-south tram lines will be concentrated at the intersection of the tram lines.

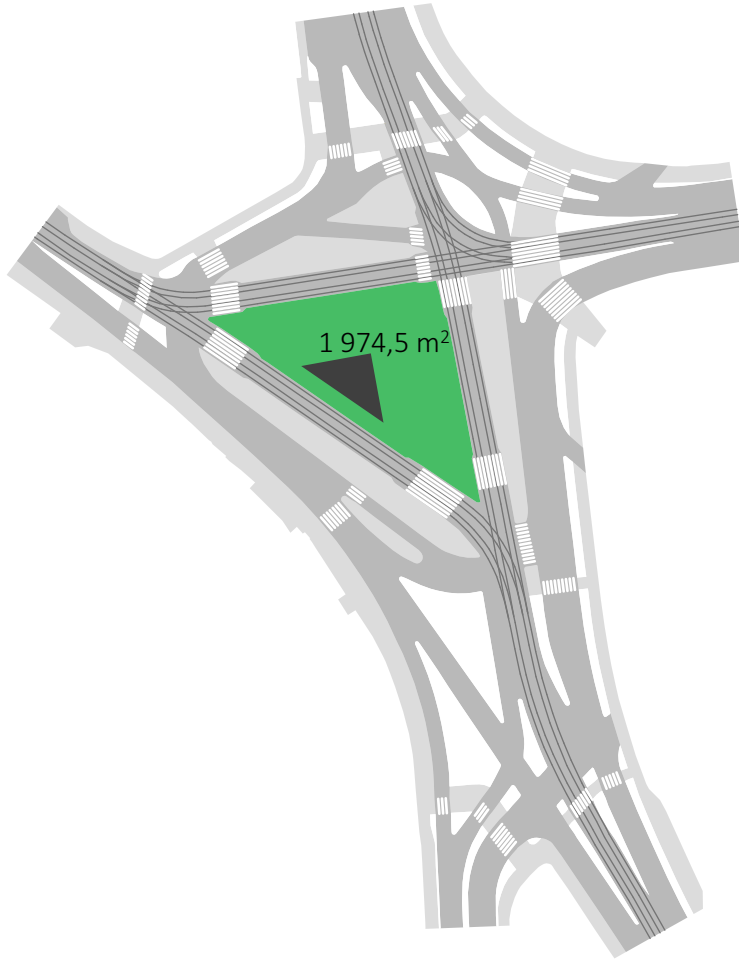




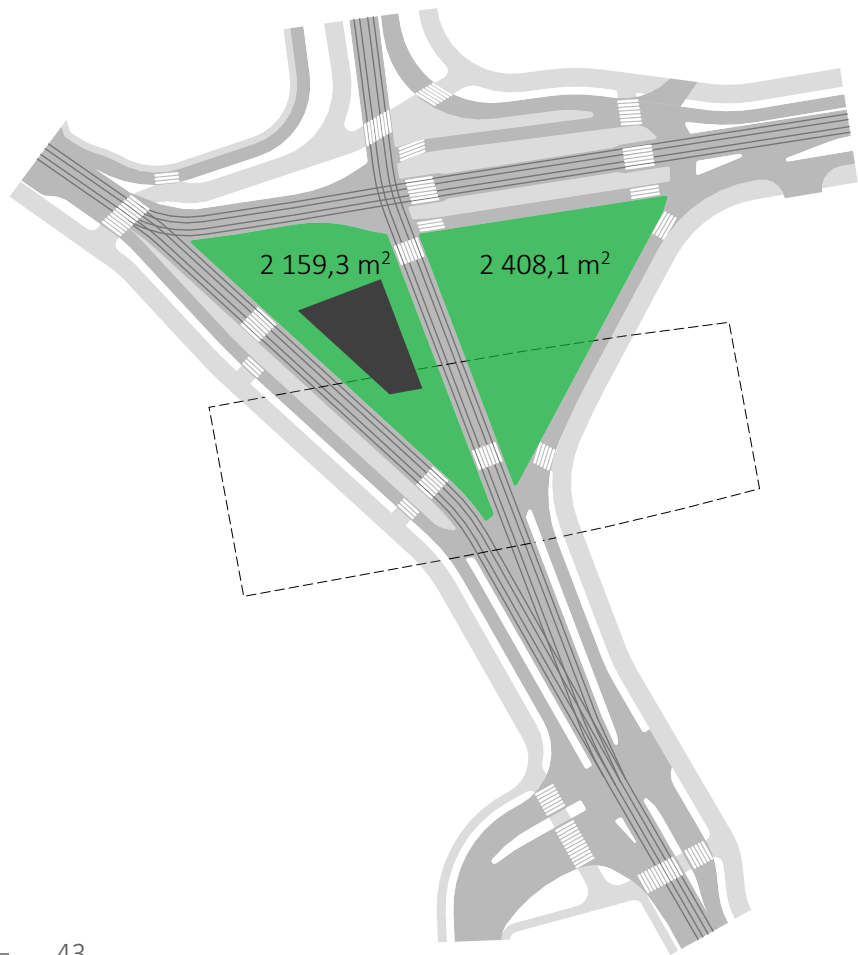
Most of the vehicular traffic from Södra Vägen to the north of Korsvägen is expected to be rerouted to Skånegatan via Berzelligatan as a result of severing Södra Vägen's northwestern connection to Korsvägen. Traffic is expected to increase along Skånegatan as a result. At the same time, vehicular traffic will be completely removed from the west side of Korsvägen and will instead be funneled through a connecting road between the two roundabouts. Traffic volumes are expected to be slightly more intense at a total of 1400 vehicles/rush hour in both directions along the bidirectional connecting road between Korsvägen and Liseberg. By comparison the section of roundabout running along a similar path today handles 1300 vehicles/rush hour. Vehicles will no longer need to make a detours around Korsvägen with their path being shortened by the connecting road between the roundabouts. Tram and bus traffic will be unchanged with the sole exception of allowing long-distance buses to stop at the section of road between the two roundabouts so that the East-West tram stop is not overloaded. Pedestrians going to/from Liseberg or the Swedish Exhibition still have to cross the major road once but will no longer have to deal with multiple crossings as they progress through Korsvägen. Those wishing to access Renströmsparken do not have to cross any roads when disembarking from public transportation. Passengers switching between the different tram stops will be more distributed and less concentrated at any single point than in the existing proposal.

III.iii. USE OF SPACE

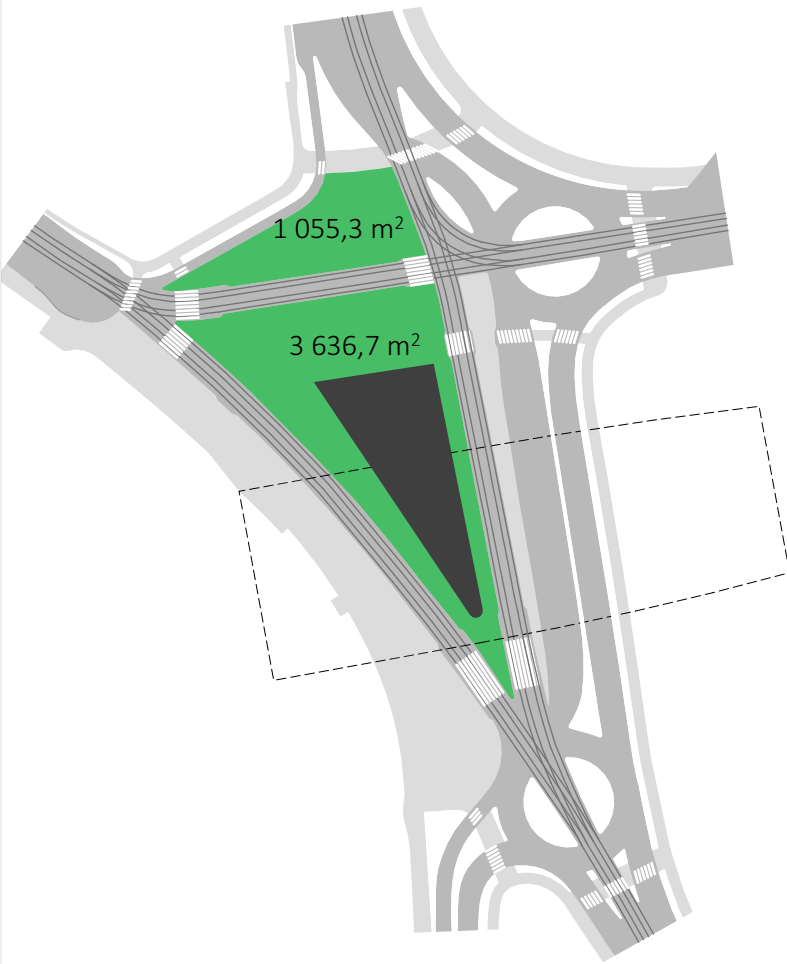
Both proposals have in common the ambition to reduce the amount of space used by vehicles and increase the amount of free space useable for pedestrians. The proposals diverge in they manner in which they organize the traffic flows which results in a different arrangement of the various functions. The existing proposal maintains a similar scheme to the status quo while the alternative proposal more clearly seperates the interchange zone from vehicular traffic.



Korsvägen today is dominated by a high ratio of "dead space" in the form of traffic islands between the various lanes. Compared to the size of the square the amount of space reserved for passengers using the transfer area is relatively small, even if the triangular pavilion is counted. Three pairs of tram/bus stops surround the central triangle with two additional outer stops for long-distance bus traffic strung behind the inner stops. The 2-3 lanes around the interchange zone consume a large amount of space.



The existing proposal reduces the surface used as a road by reducing the number of lanes and traffic islands. Meanwhile, the proposal practically doubles the amount of space usable by pedestrians and public facilities. This useable space is cut into two halves by the tram tracks running along the north-south axis. One half is set to be used by the building housing the station exit while the other half becomes a free space that can be used by the public for waiting or recreation.



The alternative proposal makes more efficient use of the existing roads. The space taken up by roads is slightly larger than the existing proposal but this is due to the use of double-laned roads rather than single-laned roads. If the number of lanes were to be reduced then the amount of space used by the roads would be even less than what is used by the existing proposal. Like the existing proposal, the alternative proposal doubles the surface area of the "useful space" central to Korsvägen. Unlike the existing proposal, the "useful space" in the alternative proposal consists of a single large surface rather than a surface divided into two.

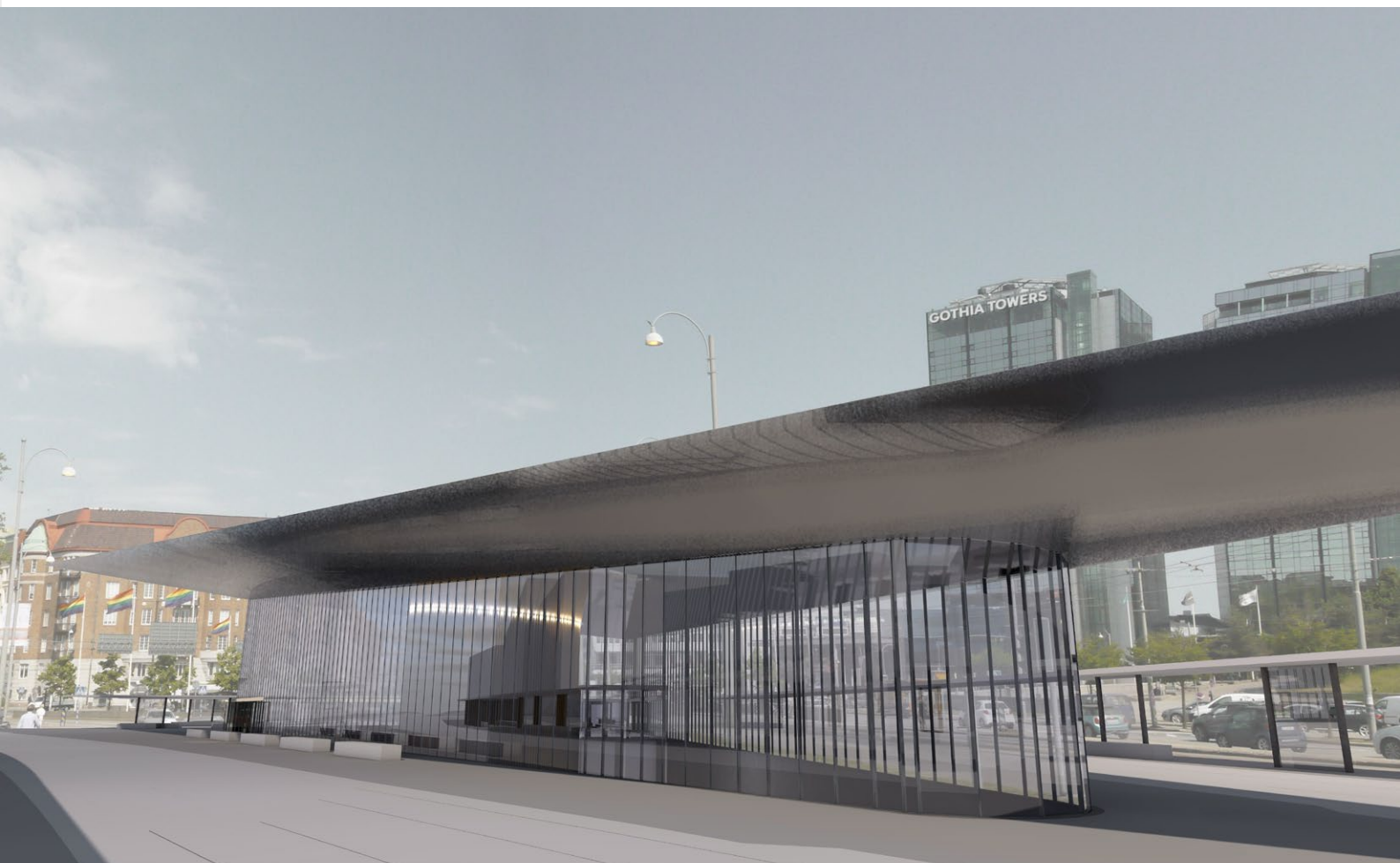
III.iv. COMPARISON



Korsvägen today consists of a multi-lane wide roundabout with a transfer area in the middle isolated from the adjacent urban blocks. As set out in the Urban Development Plan, the goals of both the existing proposal and the alternative proposal are to provide a higher quality of life for locals, promote use of public transportation, and to improve the profile of Korsvägen for larger events. The existing proposal retains Korsvägen as a large roundabout while the alternative proposal fundamentally changes the functioning of the square.

In the existing proposal, large volumes of traffic will continue to separate the transfer area from the surrounding urban landscape including Renströmsparken. The alternative proposal removes physical barriers between the transfer area and the urban core: pedestrians in the transfer area no longer have to cross any busy roads to access Renströmsparken or Södra Vägen towards the north. Pedestrians moving between the city center and Liseberg have to cross the road at least twice in the existing proposal while pedestrians need to negotiate only one crossing in the alternative proposal. The transfer area in the alternative proposal is reattached to the urban core while disentangling vehicular traffic flows from the square. Pedestrians in the alternative proposal are brought into closer contact and enjoy high accessibility to the surrounding urban fabric.

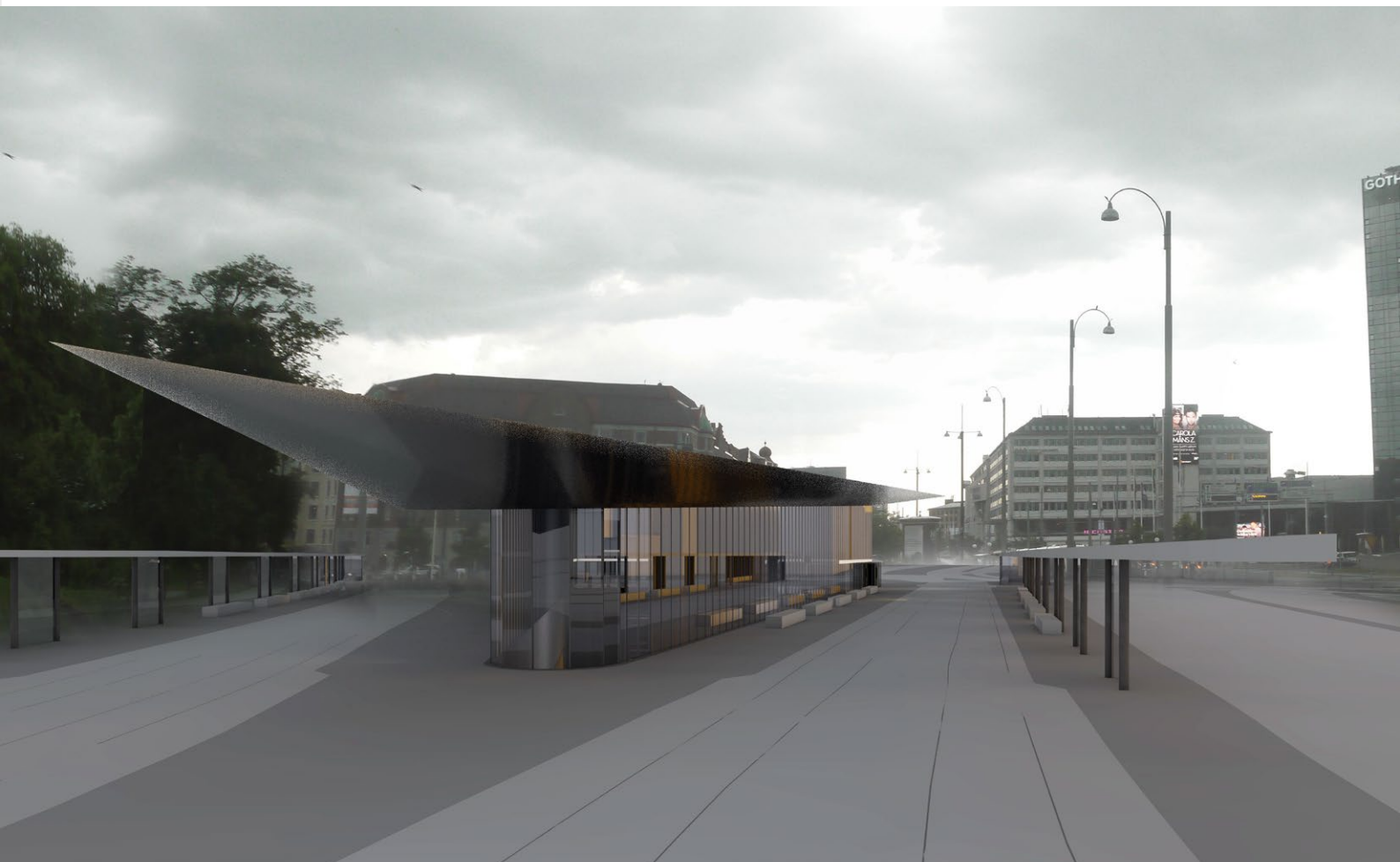




The existing proposal reroutes vehicles from Skånegatan to Södra Vägen where the amount of vehicles is set to double. While the number of lanes in the existing proposal is set to be halved the large number of pedestrian crossings will remain which may cause traffic to slow to a crawl. Traffic jams along Södra Vägen would increase pollution and noise pollution within the urban core. The alternative proposal on the other hand cuts off Södra Vägen on the northern side of Korsvägen and achieves more than a 90% reduction in vehicular traffic. Södra Vägen will be used predominantly by trams and buses with the occasional car. Pedestrians and cyclists will continue to use Södra Vägen as a through street connecting the city center with Liseberg and the nearby exhibition center. The immediate area to the west of Korsvägen becomes a more attractive area for small-scale businesses and leisure activities.

Skånegatan's conversion to a one-directional road in the existing proposal burdens drivers with a long detour and is subject to bottlenecks. This detour affects vehicles traveling from Örgrytevägen to the southern branches such as Eklandagatan and Södra Vägen. As of 2014 the direction Örgrytevägen to Eklandagatan is the one of the most trafficked (240 vehicles/rush hour) direction. Ambulances often drive between Örgrytevägen and Sahlgrenska via Eklandagatan and would be forced to take a much longer detour via Berzelligatan as per the existing proposal. With the two-roundabout system, the alternative proposal greatly simplifies and shortens the way vehicular traffic is handled – vehicles in both directions will use the connecting road between the roundabouts. Although Södra Vägen will be cut off from the north, all other roads will remain bidirectional with two lanes in most cases. The number of pedestrian crossings will be reduced and consolidated with the option of using traffic lights. Thus the distance and the amount of time necessary to navigate Korsvägen will be reduced for vehicles.

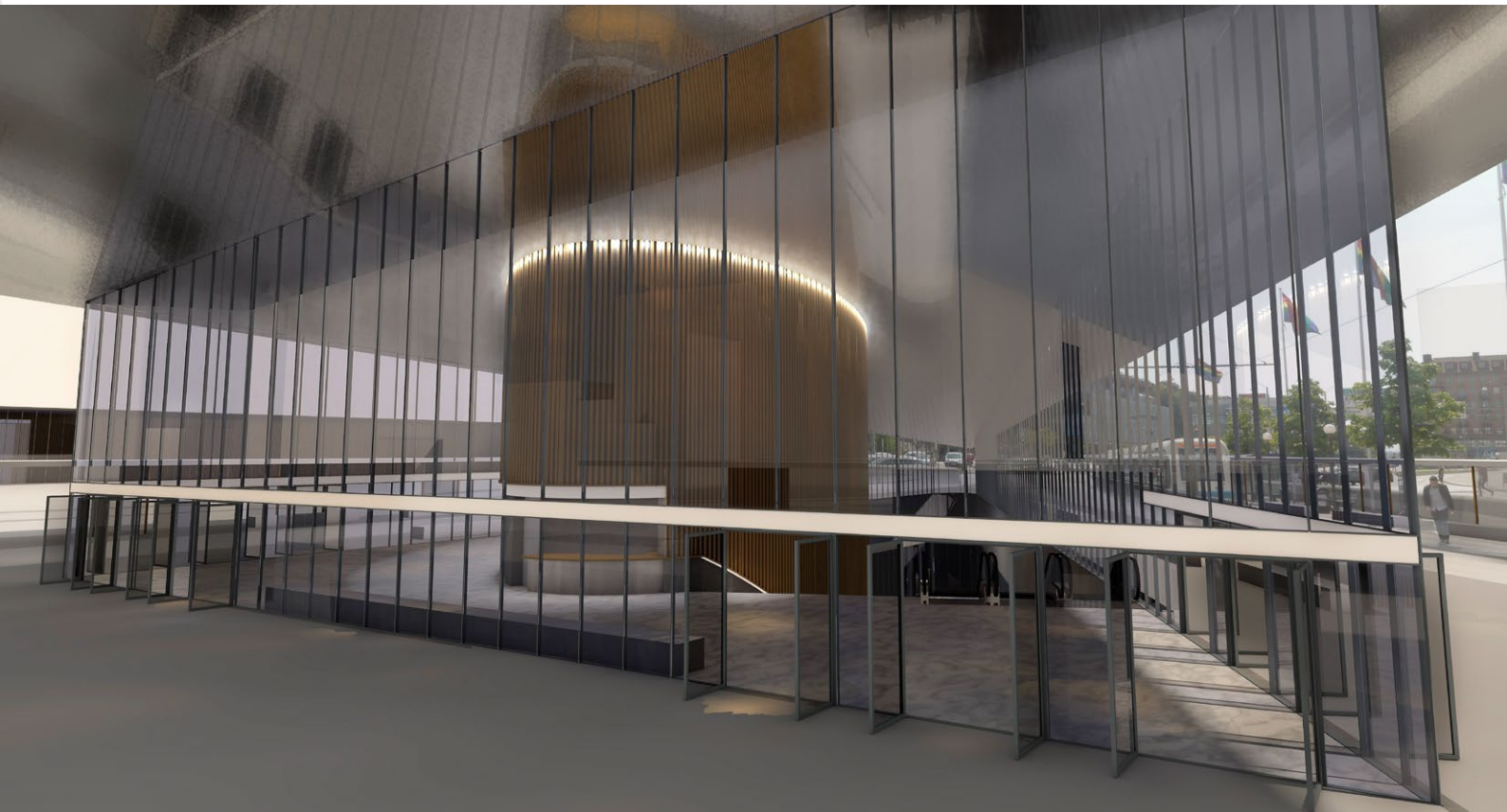




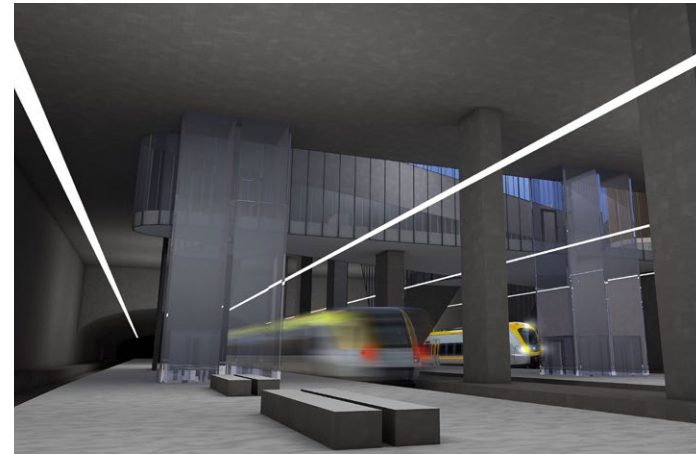
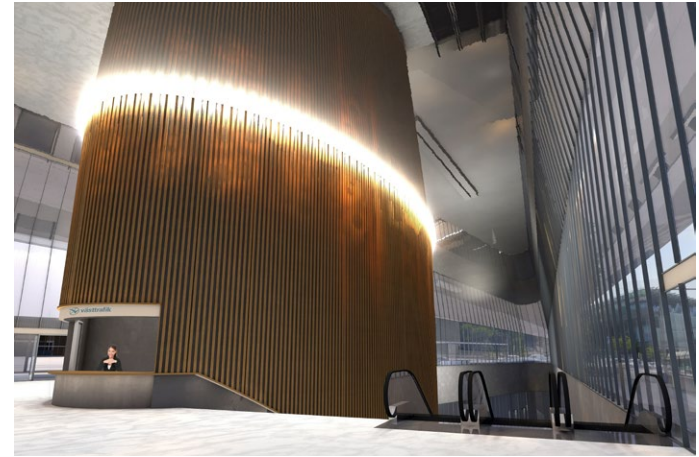
Through a fundamental change to the traffic flows, the alternative proposal simplifies the way pedestrians, cyclists, trams, buses, and vehicles move about and interact. The alternative proposal changes Korsvägen from an urban desert dominated by vehicles to an appealing square reattached to the urban core without compromising the way traffic flows are handled. At the same time, the alternative proposal encourages investment in small-scale urban activities by removing barriers towards Renströmsparken and by radically reducing vehicular traffic on Södra Vägen. While both proposals adhere to the stated goals of the Urban Development Plan, the alternative proposal more easily fulfills the goals the Urban Development Plan sets forth. In fact, the alternative proposal can even function as a standalone proposal independent of the Västlänken project!



III.v. STATION ENTRANCE

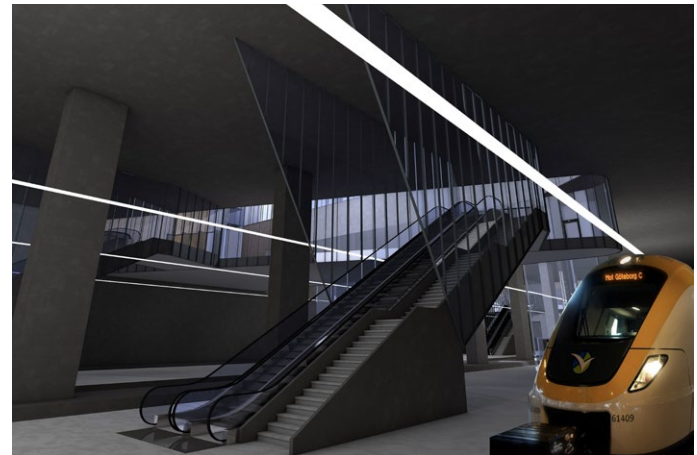
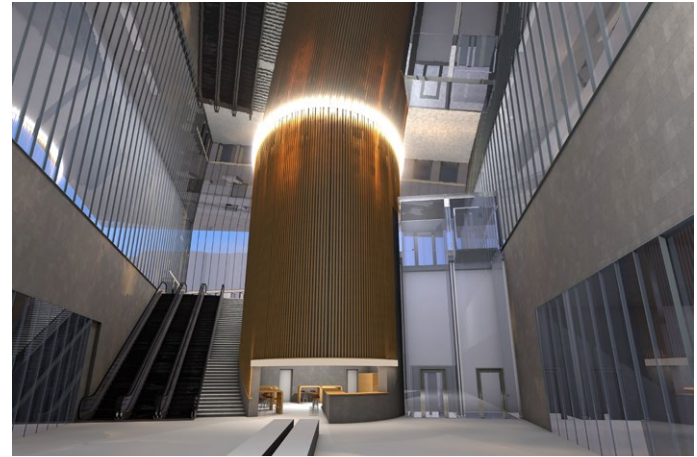


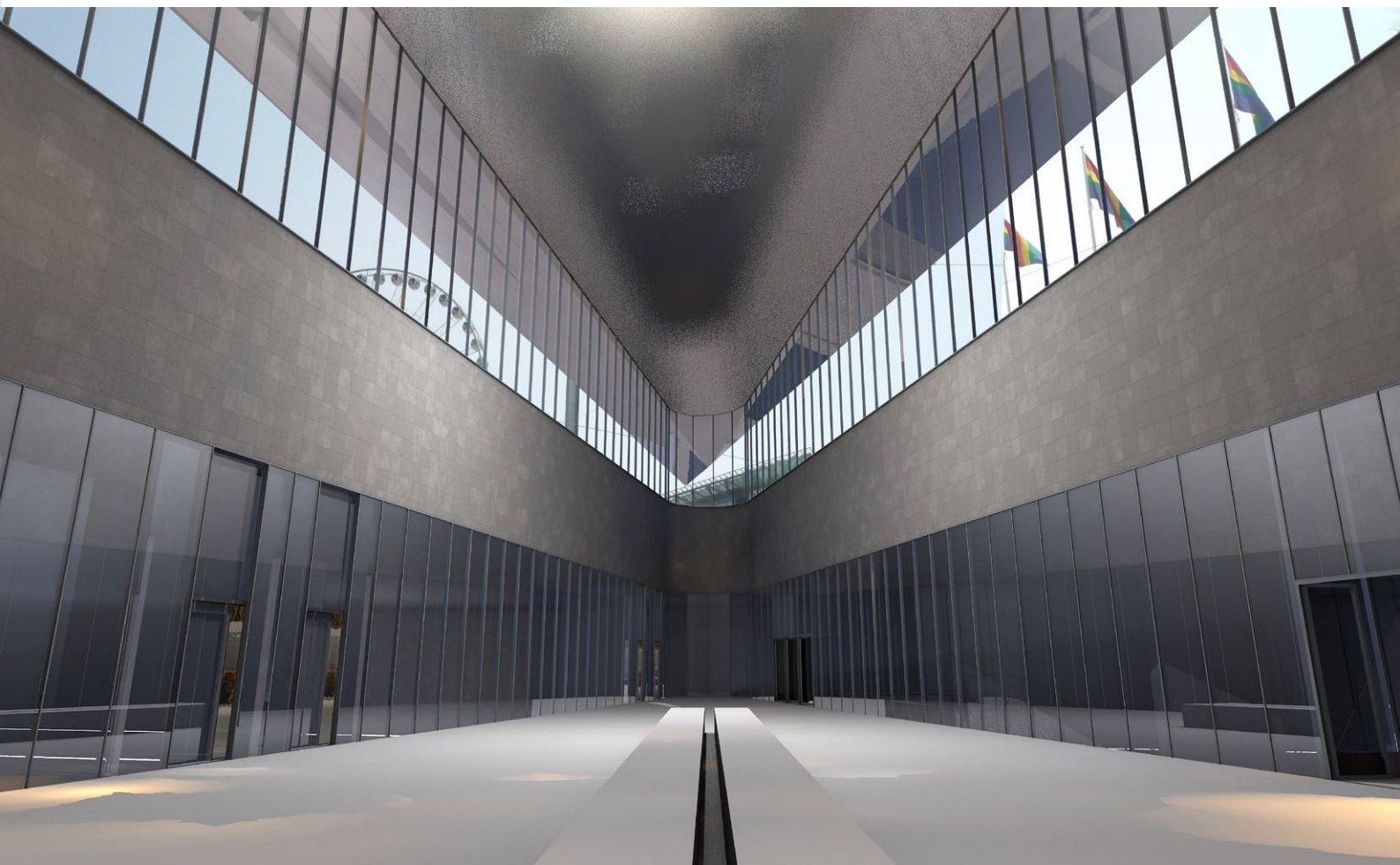
The physical connection between the overground transfer zone and the underground station is predetermined by the traffic solution and position of underground square. In the existing proposal there is very little overlap between the transfer zone above with the station below. Hence any light shafts would have minimal dimensions in the existing proposal. The alternative proposal grants more generous dimensions to the central transfer zone which allows a higher degree of freedom when designing the physical connection. The physical connection is only restricted by the position of the tram tracks and the underground station. These two restrictions present two contrasting forms: the rectangular shaped underground station and the above ground triangular-shaped space between the tram tracks. The resulting triangular-shaped building becomes the intersection of these two forms that extend below the surface as the mezzanine level.





The escalator/lift/stair system is unchanged between the existing proposal and the alternative proposal: a set of escalators/lifts/stairs descend from the ground level to the mezzanine level where passengers continue to descend another set of escalators/lifts/stairs to the platforms with one set to each platform. The ground level is mainly intended for those waiting for the trams – benches line the inside glazing to give waiting passengers direct visual connections to arriving trams and buses. The ground level is greatly expanded towards the north to provide generous waiting areas during cold or rainy weather. Basic amenities such as restrooms, information/ticket booth, and a small shop are housed within the central core on the ground level. 8,5 meters below the ground level, the mezzanine level provides extended areas for waiting and relaxation for travelers to/from the platforms below. Additional space for retail can be used to sell freshly baked goods or coffee. Passengers waiting on the mezzanine level are expected to be those using longer distance regional trains. Those waiting on the platform level about 17,5 meters below the surface are those who are spending less time waiting for commuter trains.



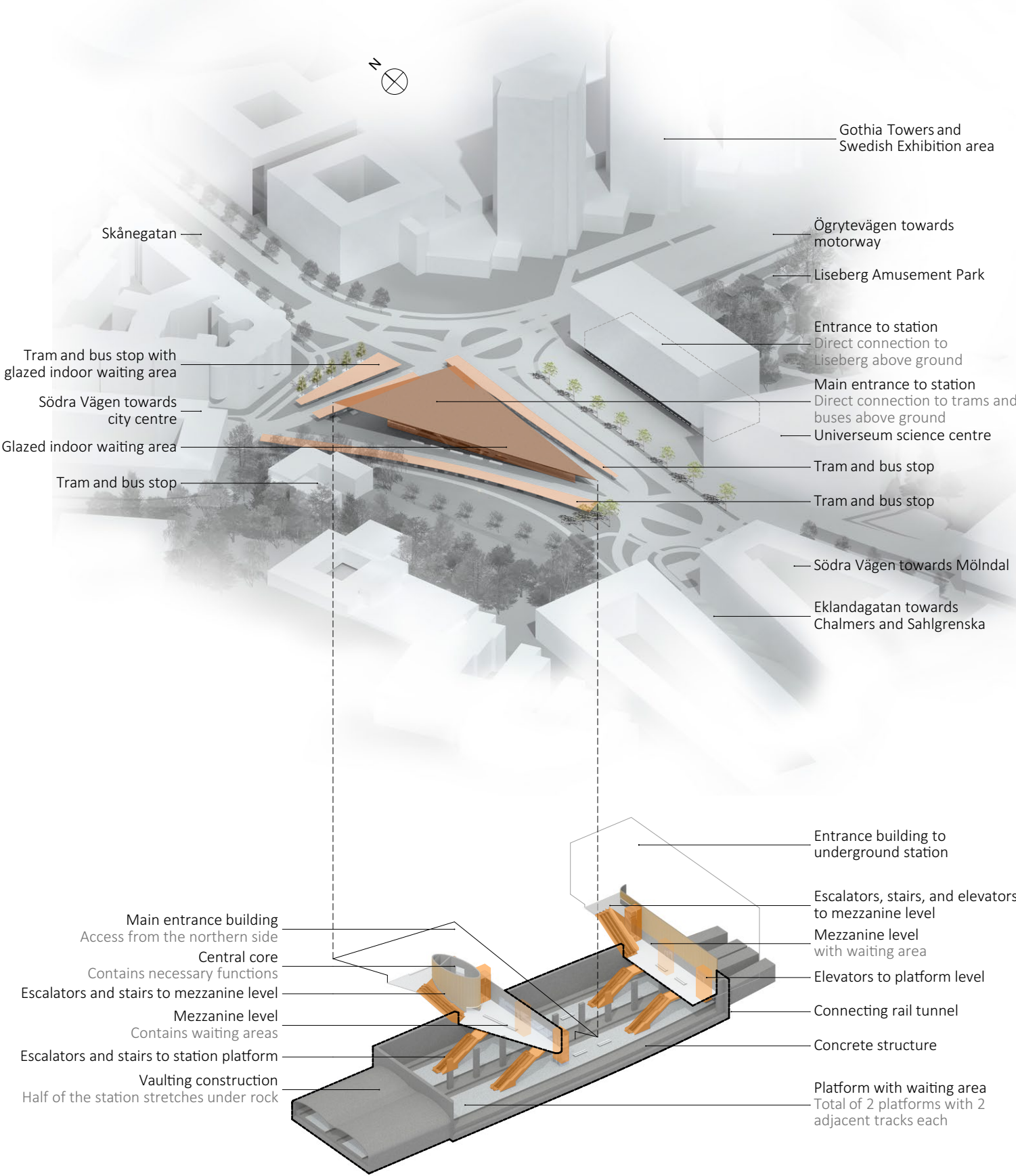


With less geometric restrictions in alternative proposal, the entire mezzanine level becomes a cathedral of light. Supporting the roof and visually connecting the mezzanine level with the ground level above, the central core of the building houses the essential functions around which the stairs, escalators, and lifts are organized. This oval-shaped central core gives the entire building the appearance of a mushroom. Vertical wooden panels line the central core to give the structure a sense of continuity between the ground level and the mezzanine level. The roof extends far beyond the building to protect passengers from Gothenburg's oft-rainy weather and to prevent direct sunlight from hitting the mezzanine level. The glazing that defines the contours of the building extend below ground to give the mezzanine level its triangular shape. The glazing becomes a monolithic concrete surface where it intersects the ground so that passengers traversing the mezzanine level see a cross section of the ground level and the station below. Users will enjoy a visual connection to the adjacent levels at all times: between the platform level and the mezzanine level and between the mezzanine level and the platform level. Passengers on the mezzanine level will be able to view Liseberg's giant ferris wheel above and the platforms below at the same time. These visual connections allow travelers to better orient themselves instill a sense of security.



III.vi. DOCUMENTATION

AXONOMETRIC VIEW



SITE PLAN 1:2000



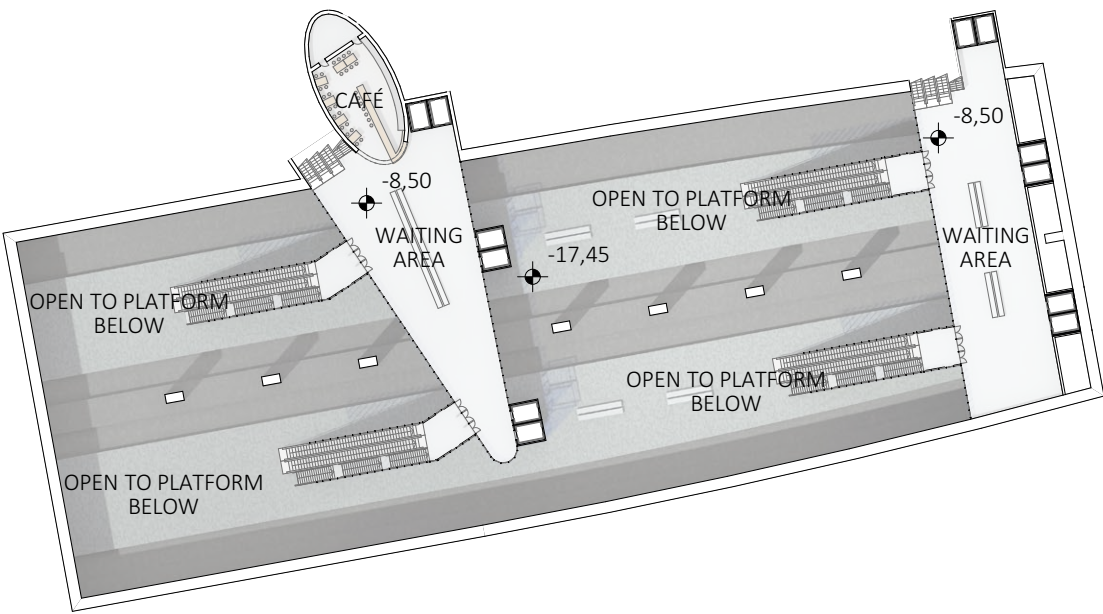
0 10 20 30 40 50 m





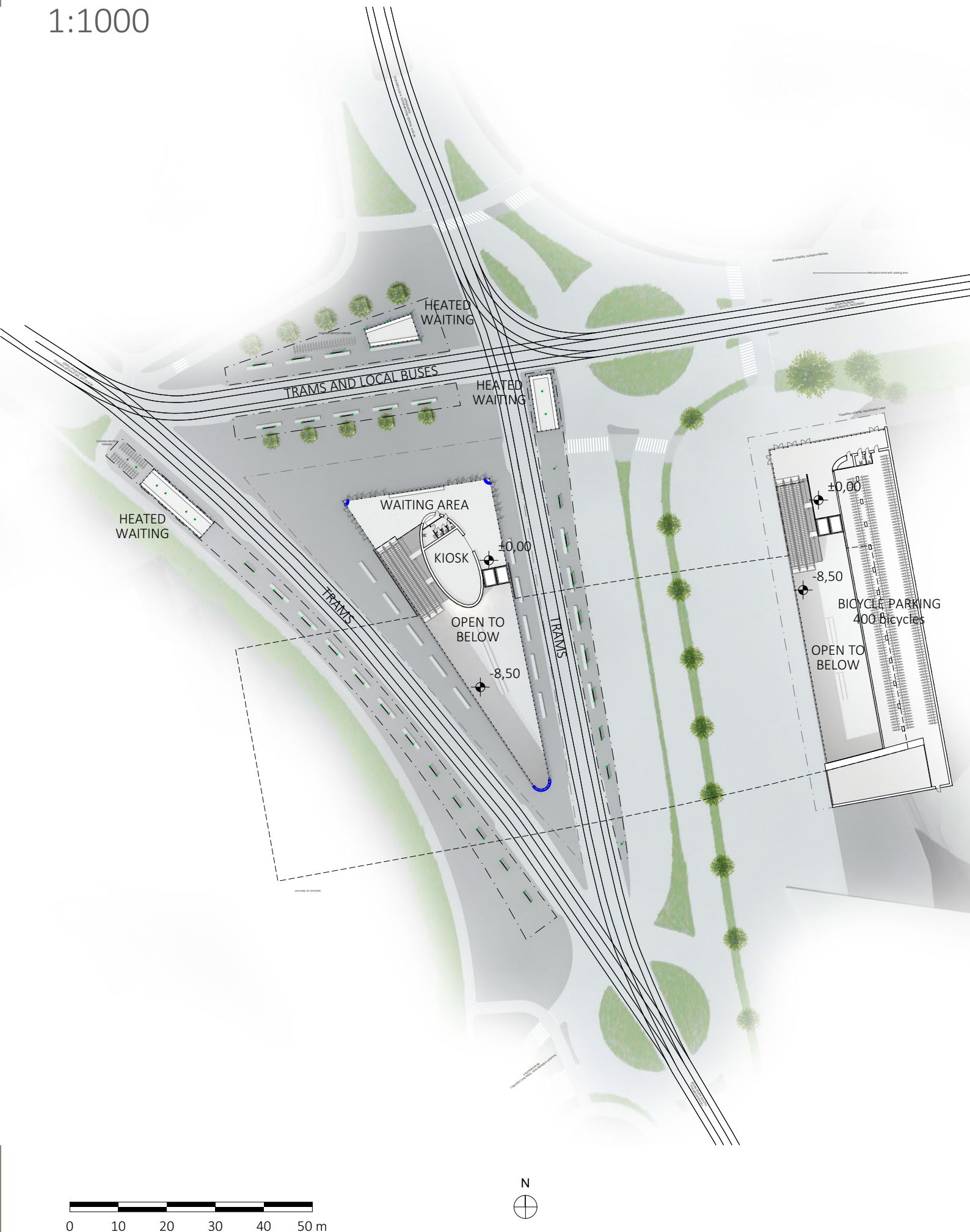
FLOOR PLAN: MEZZANINE LEVEL

1:1000



FLOOR PLAN: GROUND LEVEL

1:1000



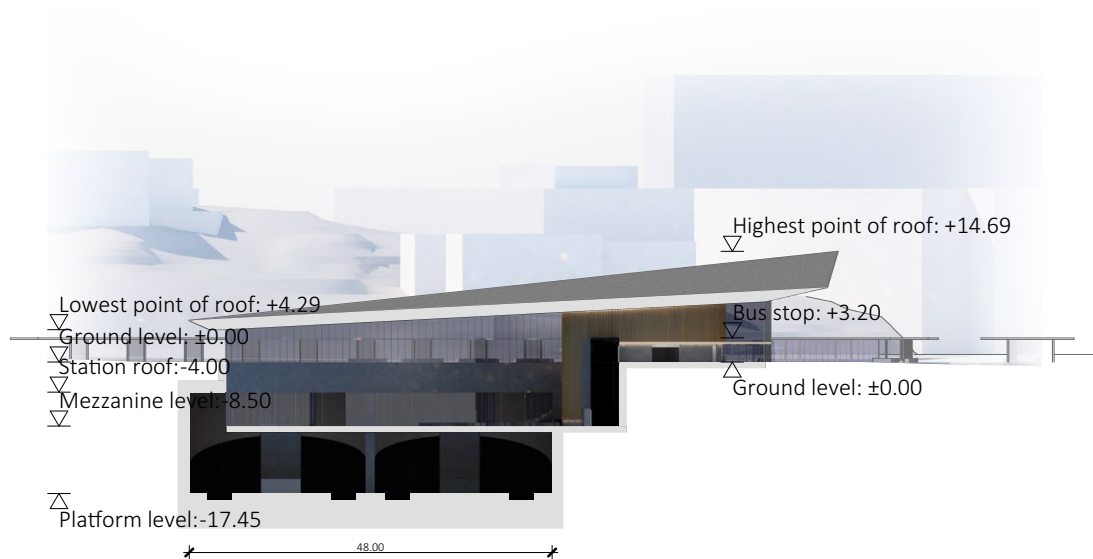
SECTION: WEST-EAST

1:1000

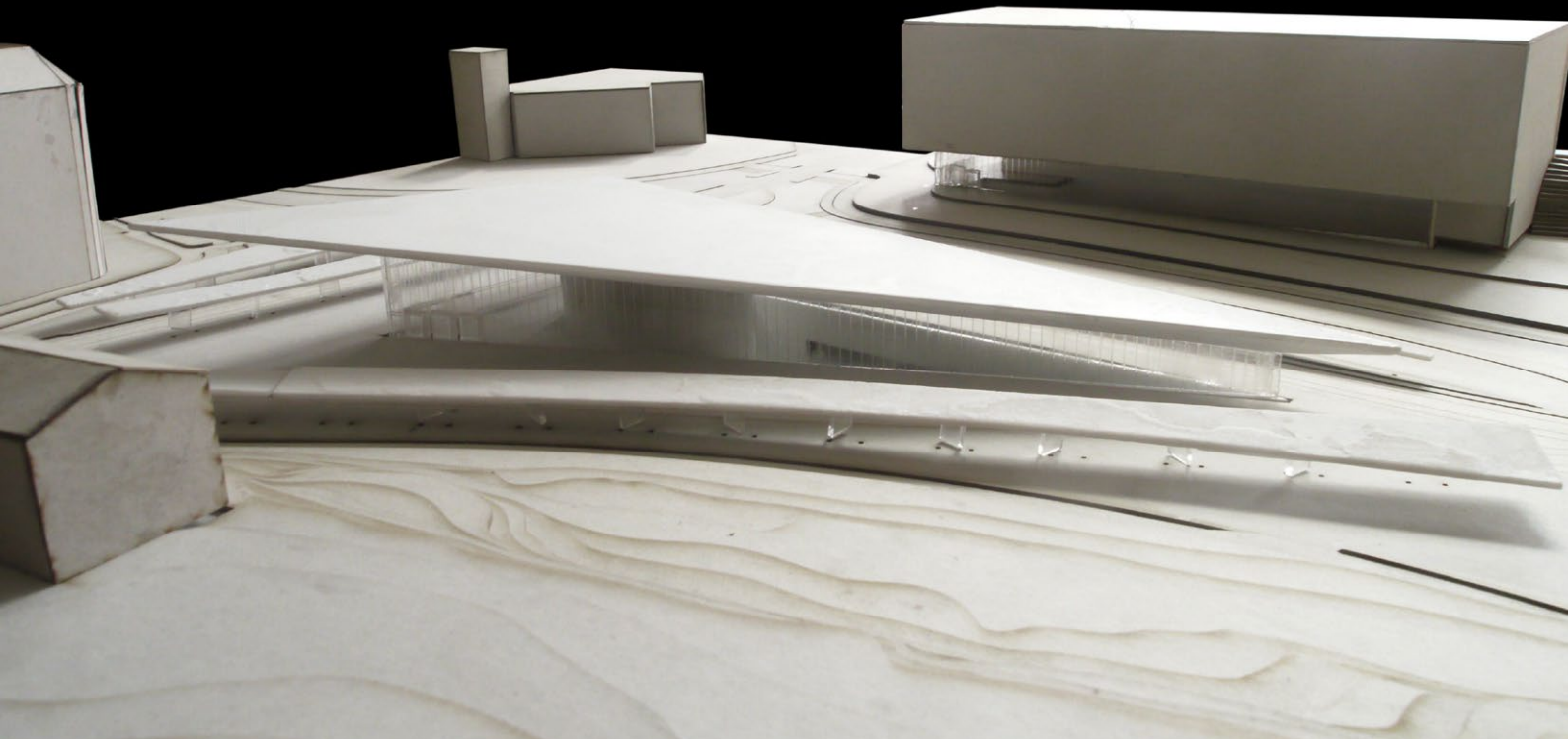


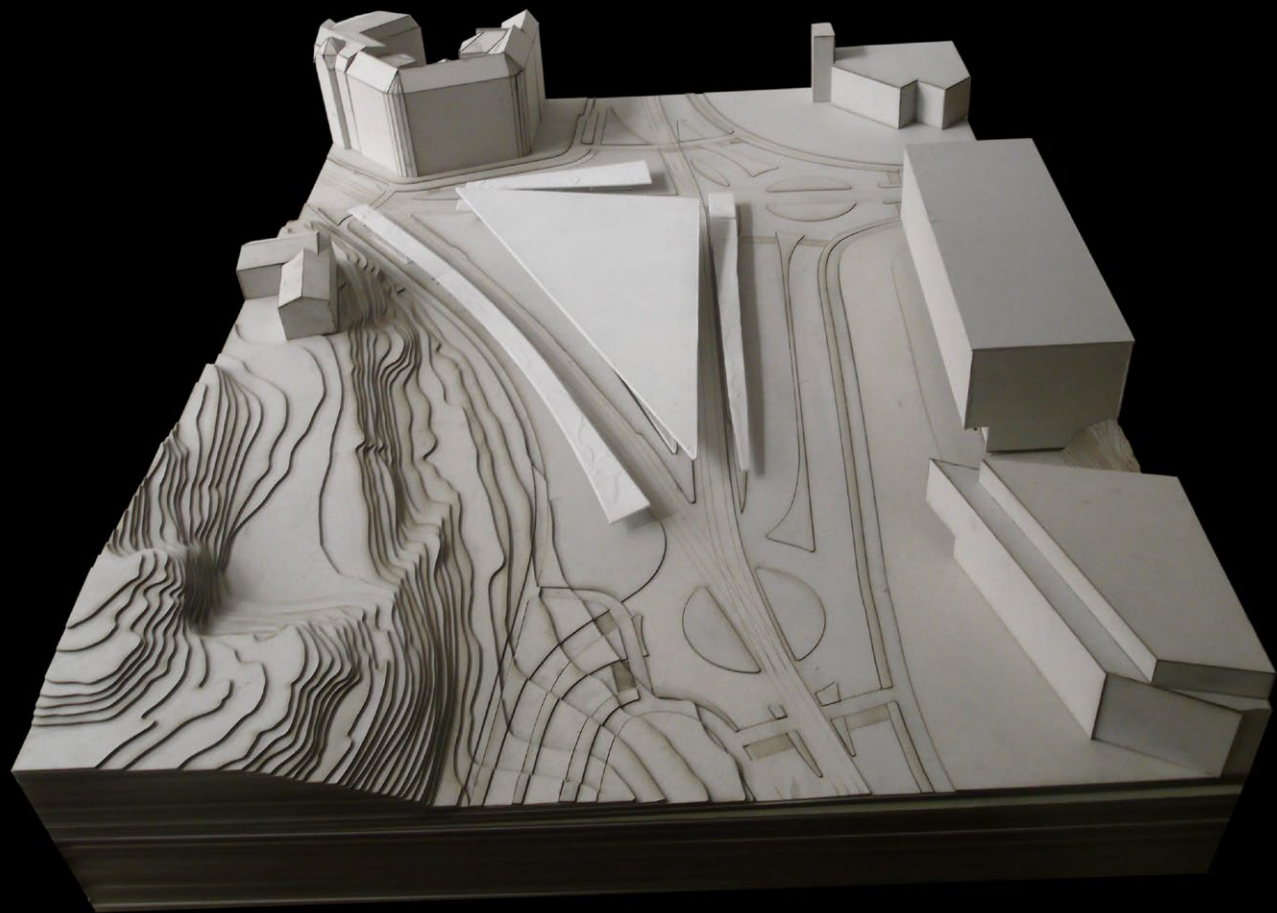
SECTION: SOUTH-NORTH

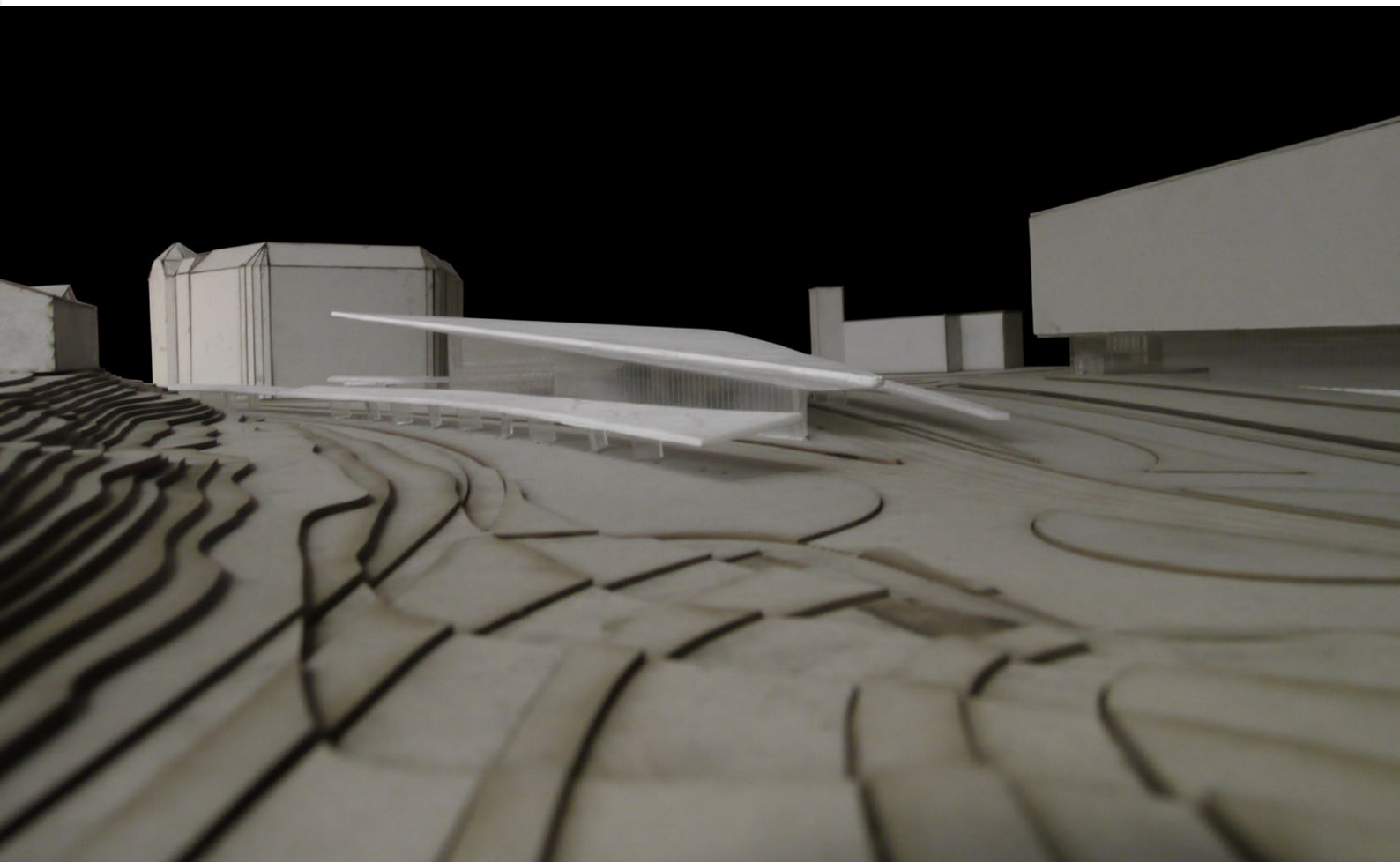
1:1000

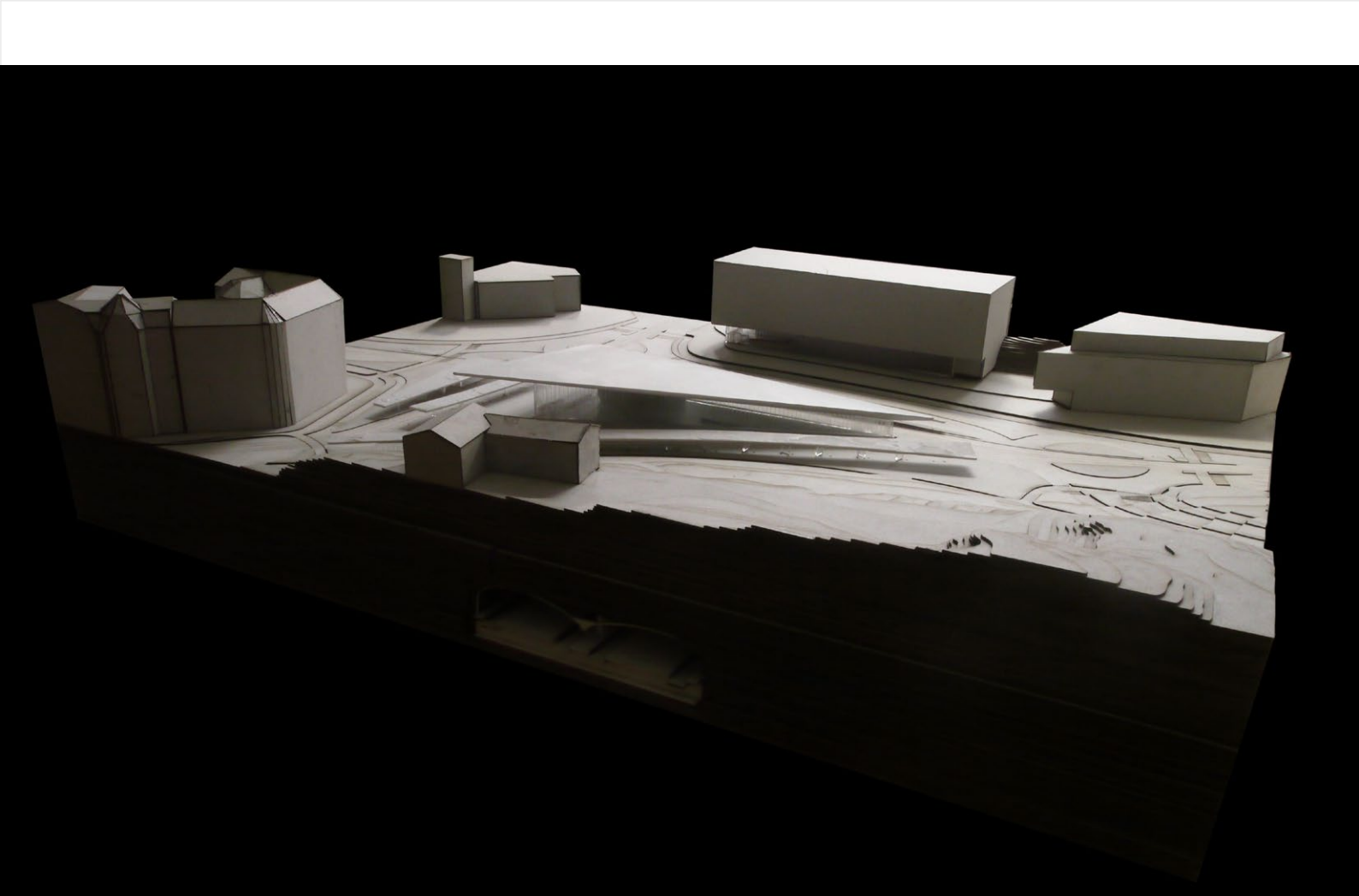


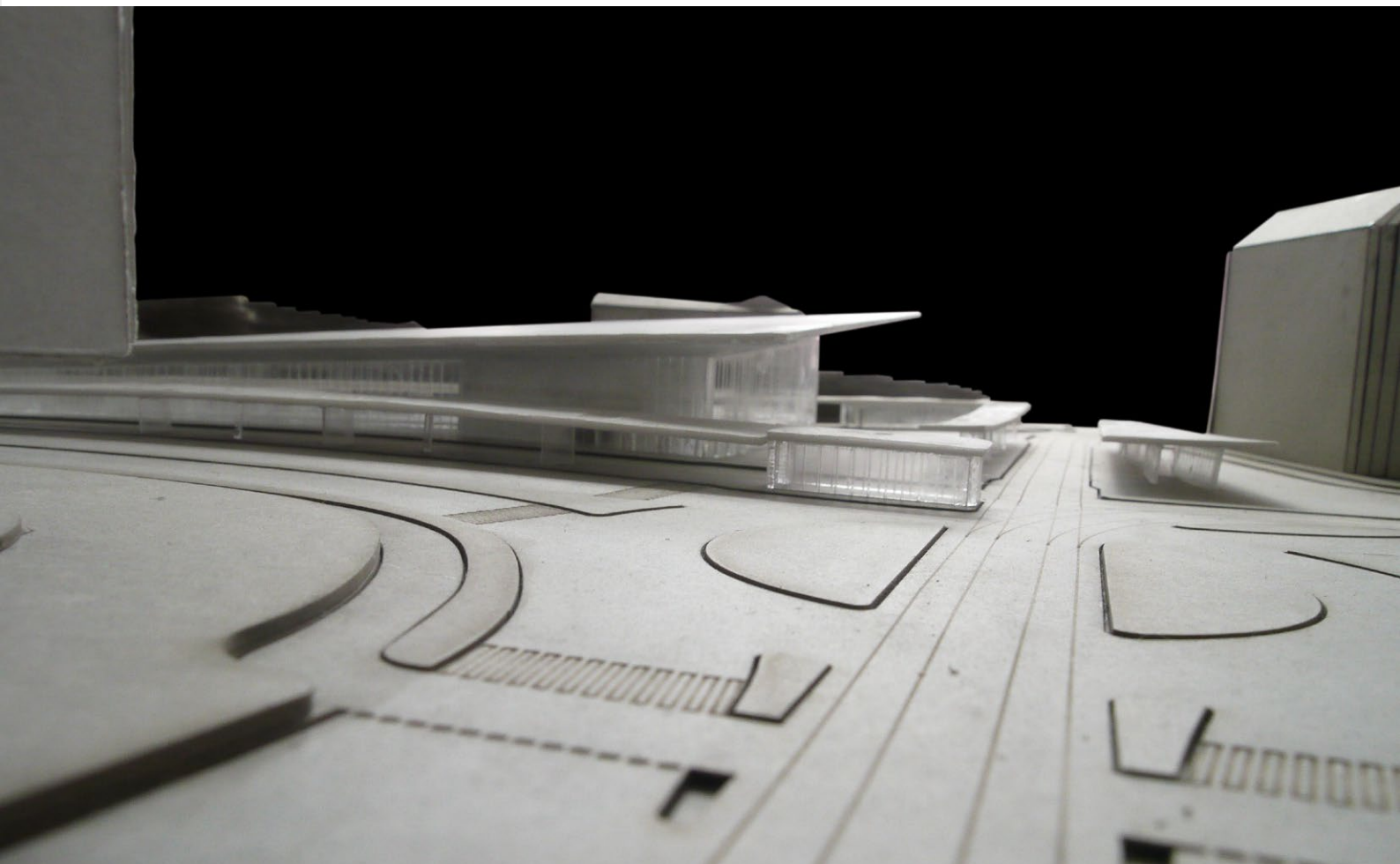
III.vii. MODEL PHOTOS



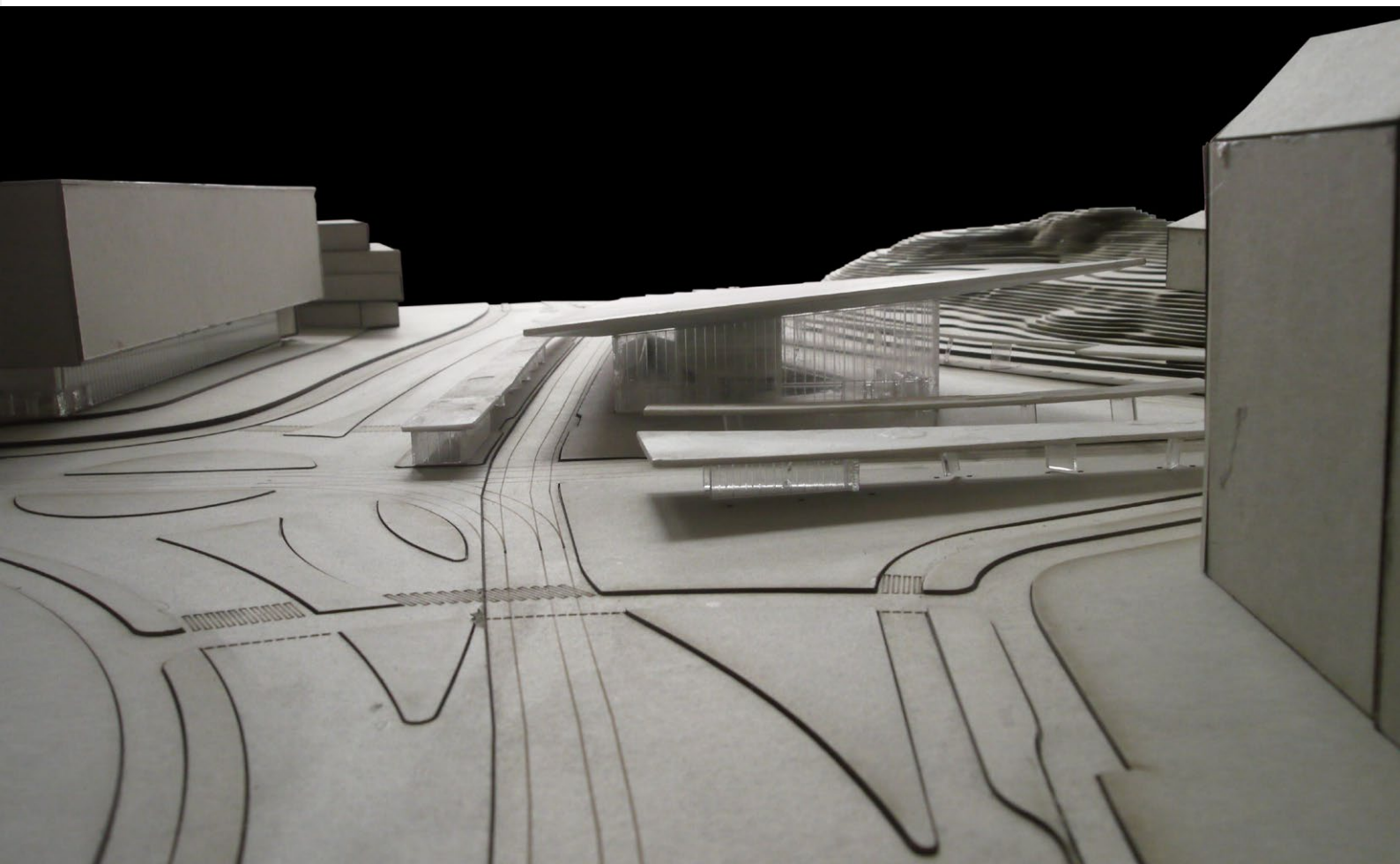














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SPECIAL THANKS TO

Carolina Lundberg, Fastighetsutveckling Västtrafik
Lina Gudmundsson, Trafikkontoret Göteborg
Måns Larsson, White Arkitekter