D R O T T N I N G T O R G E T

Cover image, Flygfoto över Göteborg. Drottningtorget med järnvägsstationen.

D R O T T N I N G T O R G E T

- How can rain gain the experience of architecture?
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Master Thesis, Chalmers University of Technology 2020
Architecture & Urban Design

Examiner: Kia Bengtsson Ekström
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DROTTNINGTORGET

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"If the rain were to stop, and I remain motionless here, there would be silence. My awareness of the world would again shrink to the extremities of my skin." (Hull, 1997).

Any study of architecture and water has at its disposal a rich history of meaning and tradition as well as a foundation in mesmerizing physical and natural wonders. When the fusion of architecture and water is treated carefully and creatively, the potential for meaningful expression is practically limitless. The world of water embraces every culture; each has its own way of designing with water and including it in architecture. (Moore, Lindz, 1994).

ABSTRACT

Gothenburg is a city that is currently facing several significant changes and has the ambition to become the best city in the world by 2021, when it comes to experiencing rain. Gothenburg has evolved from a shipping industry to an event city. Investing in rain experiences fits well with the overall direction that the city is taking.
The city has a sustainable environmental program where the delay of the rainwater is an important issue.

We try to protect ourselves from rain becuase we don't like getting wet, but there are many positive qualities that rain can offer us. Rain effect our minds in many different ways. Experiencing rain is something that everyone can relate to, regardless of one's cultural or religious background.

This thesis is an attempt to solve the issues of a specific part of town in Gothenburg. I'm trying to do so by not focusing on the underlying issues but rather work around it, focusing on other challenges, that in the end will, make it easier to solve the specific issue. In this case, the rain experience is a driving force and concept that, thanks to its qualities, can help to change a problematic place like Drottningtorget.

A city is also a place between our target points. Open spaces, plazas, are connected with movement. You often move from one target to another as you pass a square. The motion that belongs to a square can be slow and enjoyable, and it can cause one to stop. Drottningtorget does not let you stop, and instead it forces one away.
Through a design proposal for a better solution for the use and expression of the place, I want to capture peoples interest and make use of the different qualities of rain to make Drottningtorget a place where the rain becomes an experience and a square for stay and enjoy.

Keywords : Rain, Drottningtorget, Urban design, Public Space.

INTRODUCTION

CITIES

Literature is, in principle, a fiction, trying to have probability, it creates an imaginary reality, while architecture, unlike utility construction, produces new original and organized forms. The city is also a neighborhood, an environment, and a space to observe and admire. Architecture, which belongs to the field of art as an art form, is addressed to the recipient, who is able to enter the assessment. The architectural object is not just a building, a block, a geometric implementation, or a color visualization. It's not just walls, floors, corridors, stairs, and vaults, or the application of details. Perhaps an even more important thing is that the building itself, as a whole, is blended into the environment and the landscape. It is an urban phenomenon related to a given community, the time in which it was created. It gives a message, additional content and information sent for a specific purpose.There are always reasons why an architectural object is implemented. Of course, the purpose of the object changes over time, which gains or loses value. The transformation of the square Drottningtorget has become more and more unclear and unconsidered. Once upon a time, it was the welcoming town square for the newly arrived, but today it is a place you pass somewhere else.

It is not difficult to notice that we live in a constant movement, everything around us is changing. Of course, this also applies to changes in architecture on the example of changes that are taking place in cities. If we look at how it is implemented, we can list three inevitable tendencies:

1: inevitable changes in adapting the city's functions to current needs and poetically fulfilling the desires and expectations of residents.

2: the needs and requirements for modernization, i.e., the use of new technological solutions that make life easier and even adapt to the prevailing fashion. Change of lighting, electric trams, widening of streets, replacement of asphalt pavement, broadband in every home, and adjusting the city to everything that affects the change and blurring of the original shape of the town.

3: admiration for the already existing architecture and the tendency to maintain style and form.

INTRODUCTION

WATER ARCHITECTURE

The key to understanding the water of architecture is to understand the architecture of water, what physical laws govern its behavior, how the liquid acts and reacts with our senses, and, most of all, how its symbolism relates to us as human beings. Whenever architects or designers include water in their compositions, they can plunge into a treasure chest of physical characteristics, legends, and allegories to enhance their designs. (Moore, Lindz, 1994).

By giving nature's power a presence in contemporary society and providing thereby the exciting places that speak directly to man's every sense as a living, human beings, you can create the spirit of a culture.

"The use of water in my architecture is an attempt to bring to bear a spiritual dimension which is directly related to Japanese thought and tradition". (Jodidio, Ando, 2007). This "spiritual dimension" does not concern only the architecture of religious destination – the sacred one, but accompanies the architect's accomplishments regardless of the purpose of the designed building, making it a universal, transcendent factor of cultural identity, typical of Ando's creative achievements.

Ando attaches to the elements of nature in his projects. It is enough to recall his statement that illustrates the purpose of their use: "When water, wind, light, rain, and other elements of nature are abstracted within architecture, the architecture becomes a place where people and nature confront each other under a sustained sense of tension.

Water used as an element of the idea and composition in Ando's creative work serves to influence senses and human imagination, thus participating in reaching the ultimate goal of architecture, which is the ability to "touch the heart". Antonio Monestiroli says: "The ultimate goal of architecture is to touch the heart" (Monestiroli, 2009).

METHOD

This master thesis development methods will be a combination of research for design and research by design. Since the Drottningtorget is one of the central and historical places in Gothenburg's history I will begin with historical investigations of the site. I will use DIVE analysis to map the qualities of the site. I am analyzing the changes of Drottningtorget over the years and quality in its surroundings. The site is also a public space outdoors that is affected by weather conditions. I will do site observations and map movement and utilities in different weather conditions. Suggestions for suitable rain experiences will be developed and purified from previous studies.
By making a 3D model of the site and trying out different concepts and design suggestions, I will use VOA analysis to compare various proposals.

- historical research: books, articles, maps
- site observations: mapping movement
- DIVE analysis: describe, interpret, valuate, enable
- VOA analysis: value opportunity analysis

VOA analysis is a seven-step questionnaire with subheadings.

- Emotion: adventure, independence, security, sensuality, confidence, power
- Aesthetics: visual, auditory, tactile, olfactory, taste
- Identity: point in time, sense of place, personality
- Impact: social, environmental
- Ergonomics: comfort, safety, ease of use
- Core Technology: reliable, enabling
- Quality: craftmanship, durability

My previous studies of rain, together with new knowledge of the site, will be woven together into a design proposal.

RAIN EXPLORATIONS

VISUALLY

INTERACTION

CONTRASTS

REFLECTING LIGHT

COLOR

INTERRUPTION

CONTRASTS

REFLECTING LIGHT

COLOR

As a result of my previous studies of rain experiences in a wide range, some key features have become more significant and superior to others. Two of these main observations fields will be a base-categories for further development and division into subcategories.

INTERACTION

Interaction is an experience that touches and affects many minds, imaginations, and memories, an innovation in a natural way. When something reacts with something else like in the world of chemistry, it creates something new. The subject of Interaction appears in many scientific fields. When it comes to rain and us humans, the interaction becomes immediate and touches all our senses. It is about interaction with hearing, scent, taste, haptic feeling, and sight.

The effects of interaction are more interesting.
How can we influence it and how to achieve the intended effect? By affecting the interaction of factors, we can strive for balance or even intentionally break it.
Rudolf Arnheim's writes:" The task in life of trying to find the proper ratio between the demands of the self and the power and needs of other entities was also the task of composition. This psychological relevance justified the concern with the formalities of composition" (Arnheim, 1988).

Figure 1. Water and glass. Photo: Miko Rezler

INTERRUPTION

A break is a natural phenomenon in our lives, the transition from night to day and from day to night. In daily life, beginning with work and ending for the day, etc. A staged break is something we are fascinated by, something we can control. Rain as a constant flow can be there at the same time it ceases where we want. We shut out the rain to protect ourselves from getting wet, but to experience the contrast between wet and dry, we need the rain.

Rain could be compared to fountains as with its constant flow. Throughout history, fountains have symbolized sacred sources, the origin of life, and the initial stage of the water cycle. Metaphors for life and sustenance are common in poetic fountain imagery (Moore, Lindz, 1994).
Like veins and arteries, rivers and canals are waters of connection and communication. Rivers are classic examples of water arteries that flow not only through space but also through time. Interruption to the flow is also the remindness of time existence (Moore, Lindz, 1994).

Figure 2. Midtown Manhattan Waterfall Glass Tunnel, NYC
Adapted with permission.

CONTRASTS

Both fields, Interaction and Interruption, can be enhanced when the experiences of contrast, reflecting light and color are activated and emphasized in different ways.

Visually we perceive form by contrasts of color and light. These contrasts help us to distinguish borders and edges (Klarèn, 2017).
Contrast enhances the experience of what we see and experience.

Contrast can be improved through the right choice of material. Material meetings between e.g. stones and water that are opposite each other create a contrast. One is liquid and the other solid. At the same time, there is an observed link between those two in the nature which creates a unity.

Figure 3. Random International, Rain Room, 2012. Photo courtesy of the artis.

Stationary waters are natural reflectors; their mirrored surfaces absorb, repel, and reflect their surroundings. Mirrored images of landscapes or buildings expand space by extending the foreground in a silver sheen or repeating the infinite depth of blue skies (Moore, Lindz, 1994).
Many times, in the absence of lakes or ponds, designers and builders have made pools to imitate the natural ones. Artificial pools can mimic nature closely and even adorn it by exaggerating edges, shapes, or the surroundings. The chief elements for naturalistic pools are amorphous shapes with soft and untrained banks that connect harmoniously to the neighboring terrain.
The passive collection of the still water brings the mind back to a contemplative state, away from the hustle and bustle of life in the exterior world of streets, markets and canals (Moore, Lindz, 1994).

Unlike fountains and springs, rivers and canals, the pools and lakes of the world are not kinetic gushers or connectors; rather, they collect the water unleashed by rushing rivers or cyclical rains (Moore, Lindz, 1994).
Still waters have traditionally represented the contemplative and pervasive "indwelling spirit" of nature residing in the nature.

The water is used not only to reflect the building but also to isolate physically the heavenly mansion from the ordinary world, symbolically segregating the mortal from the immortal.

Figure 4. The Liquid Room, 2002, Forth Ports Warehouse, (Kirkcaldy, Fife, Scotland)

The color strategies, most often used in the design process regarding the architectural form, assume a choice between contrasting the form with the environment and attempt to harmonize the form with the context. The balance between shape and color of the design in architectural or urban projects should have the same value. Color is a co-essential part of the architectural form. Urban space compositions should therefore be carried out on two equal levels - form idea like a shape, scale, proportions, mutual relations between space and buildings as well as color and materiality.
Colour experts intuitions do have an empirical ground: colour choices are affectively driven. Emotional character of color has also a significant contribution to building the identity of the place.
Light and colour are things that all seeing persons percive, and that we have often reasons to comment, refer to or discuss.

Figure 5. Niagara Falls with lights. Photo by: Bryan Goff.

GOTHENBURG IN THE BEGINING

FROM FORTRESS TO ATRADING TOWN

The core of Gothenburg is built as a grid city within the moat. Two hedges, Skansen Lejonet and Skansen Kronan, protected the city's wooden housing. Pointed bastions stuck out in the moat and the mighty fortification Carolus Rex at Rosenlund completed the entire facility. Dutch colonists raised what is today Gothenburg's "city" - out of dunes with unique technology for them. Expanding harbor canals gave the city its regular plan and divided it into five blocks, lined with long straight streets and cross streets (Lönnroth, 1992).
During the 18th century, many trading houses were built by the East India Company on the Great Harbor Canal, and the importance of the fortifications was overplayed, and the land around the canal was transformed into a park belt with a more prominent green area, Trädgårdsföreningen. When the first railway was opened in 1856, the station was built on the part of moat, which was filled in with the beginning from present Drottningtorget towards north direction. The canal closest to Lilla Bommen was filled in 1878.

Ever since the Dutch were asked to design and construct the first inner city with its canal system, Gothenburg has to a large extent, been formed by groups that have brought knowledge and experience from other countries and continents. Gothenburg has, in recent decades, made a journey from industrialism to post-industrialism. Gothenburg became one of Scandinavia's leading industrial cities as one of the most important port cities in Northern Europe in connection with the breakthrough of industrial capitalism (Holgersson, Thörn C, Thörn H, Wahlström, 2010)

MAP 1786

Figure 6. Copyright Göteborgs Stad.

This map shows how screened off the actual city was behind the fortress girdle with its strictly guarded gates and canal barriers.

MAP 1820

Figure 7. Copyright Göteborgs Stad.

During 60 years, stately facilities such as the stately park belt along Vallgraven and spacious railway-equipped quays are being completed on paddocks in the dredged river.

GOTHENBURG TODAY

Today it is vital for a city to invest in iconic buildings and/or new sports arenas such as building preschools. Cities should not only provide service and care by traditional municipal policy but also create the conditions for growth. This has resulted in a new form of politics emerging - a strategy that is not primarily conducted in the City Hall but in so-called private and public partnerships that together develop the city. Central to these partnerships is to create a city that is attractive and attracts business start-ups, tourism, and also attracts the creative class to settle in the city. Sports events play a central role in this development. Large events not only generate financial revenue but also create, with reference to the event, the opportunity to carry out large urban transformation projects and market the city. Global competition means that cities must be able to market themselves in a recognizable way, while at the same time highlighting the city's unique qualities and its authenticity. Gothenburg has managed to be transformed from a port city to an event city (Thörn, 2010). Now hopefully, the world's best rain city in line with the city's thoughts on being an event city and the city where innovations happen.

Figure 8. Region City. Photo: Jernhusen.

This section describes how Drottningtorget has developed over the years. The different stages of the development are described using map material from old town plans and photography. The most important individual preserved buildings are defined. The features of architecture from different eras are presented with the help of photographs and historical imagery.

The birth of Drottningtorgets started in the construction of the train station building, which had to be built at a place on the outskirts of Gothenburg. The station building with its design in yellow unplastered brick, large round-arched windows, and picturesque towers became an unsuspected city entrance at a new square on the outskirts of the city.

The entire railway area and all the land that lies north of it were reed areas in the river, which were claimed and filled in caused by the construction of the railway in the 19th century. Until 1853, the moat was in a zigzag pattern, across the square and away towards Hultman's islet. Gothenburg had 26,000 inhabitants in 1850. The city boundary line was almost the same as in the 16th century.

Figure 9. Copyright Göteborgs Stad. MAP 1855

Figure 10. Copyright Göteborgs Stad.

In the 1600s, one of Gothenburg's three fortified city gates was erected here in what was then the outskirts of Gothenburg. The gate was called the Queen's Gate, and that´s where the site got its name from. In the beginning, this was primarily a place for fortifications. Bastion Johannes Rex was located where the central station was built later on. Also nearby was a lock and a hydroelectric power station. During a period of time due to some trade the square was called " Wooden Square". In the 19th century, the fortifications were demolished, parts of the moat were filled in, and the railway entered. Communications have dominated the site since then.

MAP 1860

MAP 1872

Figure 11. Copyright Göteborgs Stad.

Figure 12. Copyright Göteborgs Stad.

The first horse tram across the square came on December 9th in 1881, on the newly opened line Brunnsparken - Redbergslid, and on October 27th in 1902, it was time for the first electric tram on the Ring Line to stop at Drottningtorget.

MAP 1890

MAP 1923

Figure 13. Copyright Göteborgs Stad.

PHOTO 1931

PHOTO 1942

Figure 14,15. Flygfoto över Göteborg.

PHOTO 1995

PHOTO 2008

Figure 16,17. Copyright Göteborgs Stad.

CENTRAL STATION BUILDING

The central station was completed in 1858 in the English new gothic style, build with the locally connected yellow unplastered bricks, it has a moderate scale and a rich detail level. The station building was drawn by A W Edelswärd, who for many years was SJ's chief architect. Folke Zettervall redesigned the railway hall in 1923 and, a few years later, added an open hall over the tracks. His understated design gives the impression that the old and the new in an organic way have grown together. The railway architecture in the cities was given a more conscious representative character. The city gate of the modern age was expected to provide a dignified and official impression.
A station house in a city would be designed so that it became equivalent to the other institutions of the city. It would ideally be located next to a square, and be built of stone, either with visible brick or plastered, and given a design that corresponded to the perception of the time of how a public building would be shaped. From the beginning, the station building was built with cathedral-inspired roof formations and decorations. Much of the building's decoration were removed in the 1870s when the roof of the main building was changed and got its present steep shape. In 1923 the Central Station was severely burned, and major damage was sustained. The Gothenburg Central Station is a state monument and is part of a culturally historically valuable development environment of a national interest.

The central station is one of the few non-municipal places in the city that is free, open, and accessible to all residents of the city. In this way, Central Station has a unique position in its role as one of the city's most important meeting places, where the city's residents can meet on equal terms, and many people have several different reasons for staying and passing through the area. The station also offers some service and shopping for its visitors. The area and its functions have one of the greatest conditions in the city to function as an integrating place, a place for everyone.
Today 40000 people are daily passing the main entrance, and 80000 people in the entire central station area.

Figure 18. Central Station. Photo: Miko Rezler

HOTEL EGGERS

The area where hotel Eggers was built in the remains of the old Nye Port block and the oldest parts, were probably erected in the 1820s since the moat that ran through the area was filled in. The railway hotel nowadays Eggers next to the station was erected in 1859, almost three years after the current Central Station was completed. Remains of Gothenburg's old city walls from the 17th and 18th centuries have been found under the hotel property. In 1894 after a total renovation, the hotel changed its name from its original railway hotel to hotel Christiania and later on to Hotel Eggers. One of the city's first lifts was installed in the building. A popular glass porch for the guests is being built as part of the renovation. The hotel early had a so-called American Bar. It would be positioned like an island so that guests could be served 360 ° around it. Due to its location opposite the Post office, the hotel became a free zone and natural meeting place during the Second World War when less official information was exchanged.
The hotel had a fire accident in 1947, which was fortunately stopped in time before the whole building became flared by flames. In 1944, the City of Gothenburg took over ownership of Hotel Eggers.

The reason for the purchase was entirely strategic. If the traffic situation that was already difficult would worsen, the municipality could demolish the property without other interference or further processes. There were thoughts of demolishing the hotel and replacing it with car tunnels and a new office building. After many lengthy negotiations with the municipality, new owners managed to convince the authorities of the building's historical value for Gothenburg. Now you are not allowed to demolish or rebuild without special permission. The house is culturally protected.

Figure 19. Hotel Eggers. Photo: Andrzej Otrebski.

POST OFFICE BUILDING

In 1924 the enormous new Post Office was built and finished on the east side of the square Drottningtorget.
The Post Office was built on the remains of the fortresses from the 1700 century. It was designed by the Swedish architect Ernst Torulf.
When it was built the building was the largest post office in the whole Scandinavia, and also the most expensive building ever in Sweden at that time. The final cost was SEK 8.4 million. The building became the second largest building in Gothenburg with a ground floor area of 6235 sqm.
Half of the premises were used for postal activities, and the rest were on lease.
During World War II, the German nazis had their headquarters in most parts of the Post Office building.
The building was erected in yellow brick in a neoclassical style. The building has the shape of a horseshoe and is mainly built of granite from the region of Hunnebostrand. It also has a lot of national romantic forging details and a roof of slate from Grythyttehed's slate plant. Engraved pictures in the granite are showing postal transports in pre-historical times with skis, horses, and dragons. The indoor ground is made out of limestone that came from Gustav Stenförädlingsverk in Brunflo (near the city of Östersund).

Figure 20. Post Office. Photo: Miko Rezler

I N T E R P R E T

Drottningtorget in the present state is an undefined place, unclear in its borders where distinct framing is lacking. The square is divided by various barriers such as bus files, bench rows, bicycle parking, parking lots, and as always on Gothenburg squares, a lot of tram stops with associated waiting shelters. There are a lot of elements that stand in the way of experiencing a whole.
One of the barriers with a greater impact on site cohesion is Burggrevegatan, which cuts through the site in front of the station's main entrance. This is the first thing you encounter when you arrive at Gothenburg by train or bus, a busy four-lane street that stops one from just stepping into the city.
There are tram tracks that also interfere with the overall experience of the place. A remnant from the 1930s, where the tramway had its end stop and tramways could turn around by rounding the then called Jernvägshotellet.
There is a bicycle parking area which occupies a land area of 17 x 22 meters (374m2). Two bicycle parking umbrellas that are not perceived in the apparent way to belong to the bicycle parking.

The round kiosk building (Pressbyrån) and public toilets are two smaller buildings of different shapes and sizes that stand for themselves in the middle of the square. These also contribute to unclearness and the disturbances of the whole site as well as occasionally placed flower boxes, a bulletin board, junk barrels, advertising columns, map signs, flagpoles, and wooden benches that are perceived to be located a little here and there on the large square.
In front of the hotel entrance, there are a few 10 minutes of parking lots.
And not least the sounds of all the traffic that embraces the place.

VALUATE

Drottningtorget conveys a historical feel and authenticity. Facades from different time periods have different expressions and, at the same time, are old enough to feel genuine. These embrace the place and give it the power of feeling authentic and historical. Signs on buildings that are surrounding the square with various texts from different eras increase the genuine feeling. Details such as the bridge railing, roof decorations, and lampposts also remind us of the history of this site.
The yellow unplastered brick has seen most closely in the facade of the station building, and the facade of the post office building also contributes to an authentic feeling.
The site holds qualities as different sightlines. From the main entrance of the station building, you can see right up to the garden association (Trädgårdsföreningen), a large park area downtown of the city with the palm house in the middle. Obliquely to the right, the sightline connection to Södra Hamngatan 2 with the house from the 1700s on the corner closest to the canal. Directly to the right a sightline to one of the entrances to the 5th house (femmanhuset) and hotel Europa. To the left, a sightline past the Åkareplatsen right up to the old GP house. From the new Post hotel, you look straight out to Gustav Adolf's square and further along the Stora Hamnkanalen.

Drottningtorget, despite its size, has a low settlement, which makes the pedestrian space a graspable and human in scale. A place with many connections with the city in different directions. A place with very high potential in terms of experiencing the character and genuineness of the area itself. The site has close contact with the water channel, but unfortunately, the connection is not fully developed and utilized.

ENABLE

According to a study done for the Central area "Centralområdet" and Region City by the City of Gothenburg and the City planning, strategies were made for how the area adjacent to Drottningtorget should be developed. These overall guidelines also fit and concern Drottningtorget.

THE PURPOSE AND CONDITIONS OF THE PLAN

- Create a welcoming entrance to Gothenburg.
- Create an attractive communication hub and local meeting place.
- Create a dense, mixed, and vibrant city.
- Create new routes that connect the Central area to the water, across to Hisingen, towards the old city center and open to development in Gullbergsvass

The plan structure of the urban development program aims in the year 2040 and is built up of the three main categories:
- paths
- meeting places
- buildings

The meeting places and buildings will strengthen the area's role as a regional venue and a welcome entrance to Gothenburg and the Gothenburg region.
By building the city from the inside out, Gothenburg can strengthen the region. A dense and interesting regional core where everyone can meet and feel belonging is important for the development of business and for people's quality of life.
For Centralområdet the focus is stated as: "We will develop the Central area into an attractive communication hub and regional center."

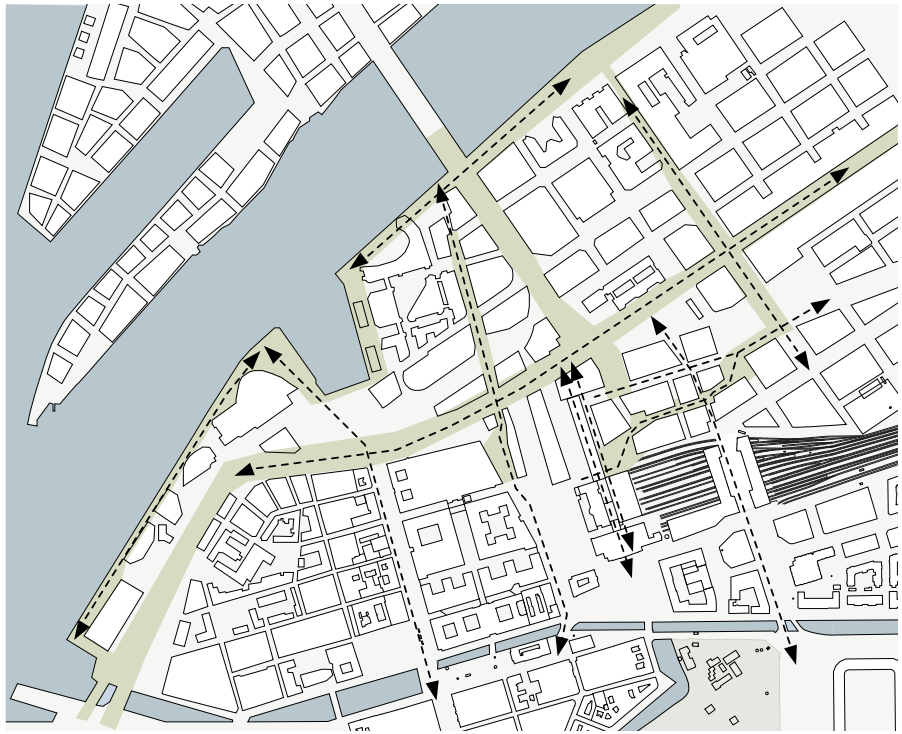
THE GREEN AREAS

The area north of Drottningtorget and Drottningtorget today mainly consists of hardened paved surfaces. Smaller planting areas and tree plantings exist, though, to a limited extent and without being coherent green areas. An overall natural environment study reports that the area around the Central Station is characterized by the intensive traffic situation and by hardened surfaces with limited access to places for recreation and greenery. No valuable natural environments or protected trees are identified in the plan area. The dense development within RegionCity requires the establishment of green spaces for relaxation and recreation in the surrounding urban areas. They are also needed for heat exchange with the densely populated area for a better local climate within the central area "Centralområdet". Smaller park areas in the surrounding area, such as Bergslagsparken, combined with the planning of a district park within Gullbergsvass provide an important complementary and supportive green function to the plan area. The river is also an important recreational blue resource in the immediate area, which can be developed as a recreational environment and also contributes to heat exchange.

According to a decision in the City Council, the City of Gothenburg will work with compensation measures to ensure the Gothenburg citizens' access to valuable nature and recreation areas. Compensation measures mean that natural and recreational values lost through exploitation are replaced by actions in the immediate area primarily.

RAIN AND FLOODING

The report states that to achieve both purification requirements and the city's requirements for delay of 10 mm of stormwater per square meter of hardened surface, it is proposed that stormwater from neighborhood land should be delayed and cleaned with green roofs, sunken plant beds or pipe storage. For the management of stormwater in general, it is proposed that submerged plant beds, skeletal soils, pipe storage, or collection and retardation, which could, for example, be integrated into the design of planned target point in the middle of the square of Region City.



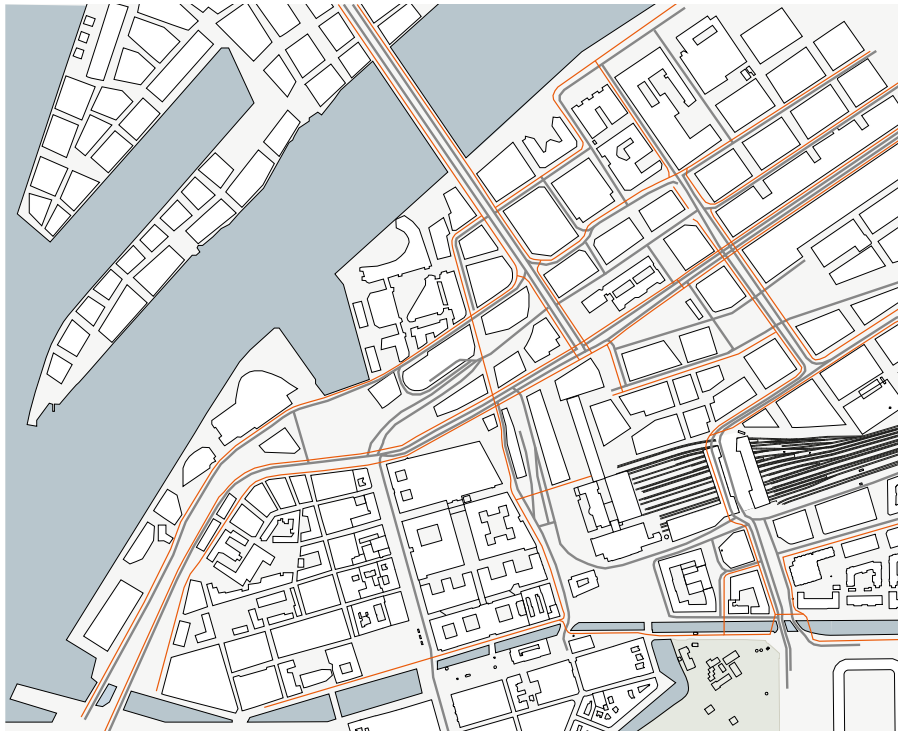
Places, paths and streets in the Central area, from urban development program 2.0

TRAFFIC

The objectives of the traffic strategy:

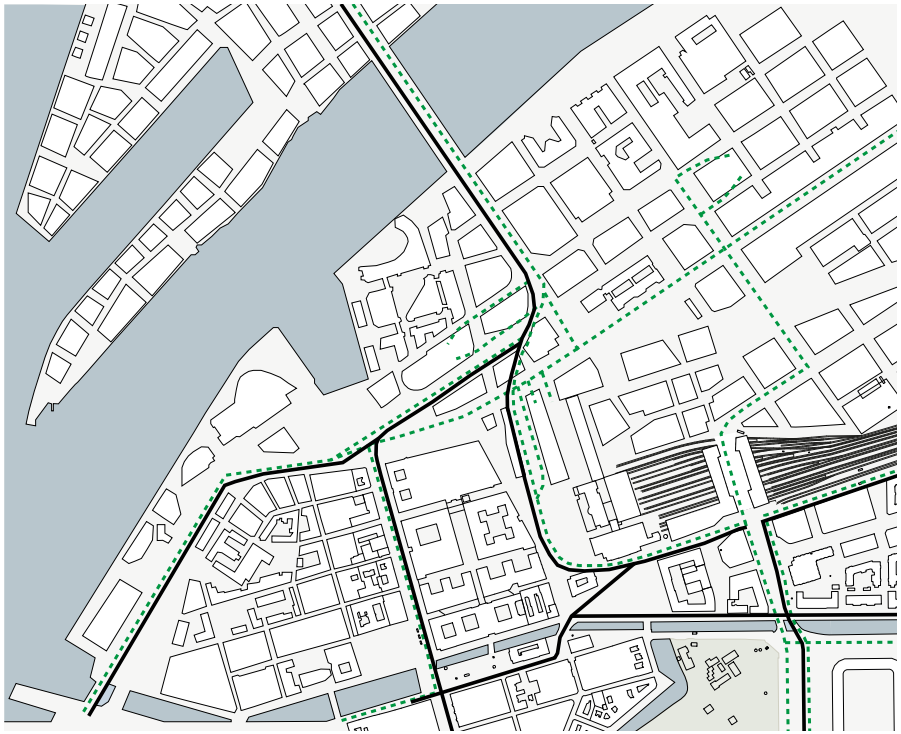
-Travel: An easily accessible regional center, where it is easy to reach important places and functions, regardless of means of transport and conditions. Gothenburg should be perceived as easily accessible. Create a welcoming entrance to Gothenburg.
- Urban spaces: Attractive urban environments and vibrant urban life, where people want to live, work, shop, study, and meet.

Some basic principles in the strategy are that by 2035 the number of car trips in the city as a whole will be reduced by 25%, while the number of pedestrian and bicycle journeys will be increased, and trips by public transport will double. The goal is for the proportion of bicycle trips to triple by 2025, compared with 2011. It is therefore important that there are areas to manage increased bicycle travel, including access to bicycle parking for the station function.



Plan structure for the Central Area 2040. Car traffic and main street system in gray, main bicycle lane in orange.

A connection from Åkereplatsen on the south-east side of the station via Kämpegatan will connected to the E45 / Götaleden. Otherwise, the accessibility of car traffic should not be a priority. Car traffic may take place under the conditions of the other types of traffic.



Map showing planned public transport routes, tram in black and bus in dashed green lines, from urban development program 2.0 year2035.

SOCIAL ASPECTS

The social aspects are analyzed on the basis of the four themes that the municipality has developed for the social impact assessment.

- Coherent City
- Interaction
- Everyday Life and Identity
- Health and Safety

and Child Impact Statement.

The analysis is summarized in twelve social keys. The keys highlight the social aspects and values that are most critical in planning.

COHERENT CITY

Find new ways to increase diversity and everybody's right to the area.

More roads should be crossed.

Sew together the city - no backs.

INTERACTION

Strengthen the general public places.

Enables the bigger and the smaller meeting.

Gather people but find enough space.

EVERYDAY LIFE

Safety and populated places.

Qualitative and integrated sites for children and young people.

Make it easy for pedestrians and cyclists.

IDENTITY

Increase orientation for several.

Create rights to the area.

A social arena with ties to history and connections to the surroundings.

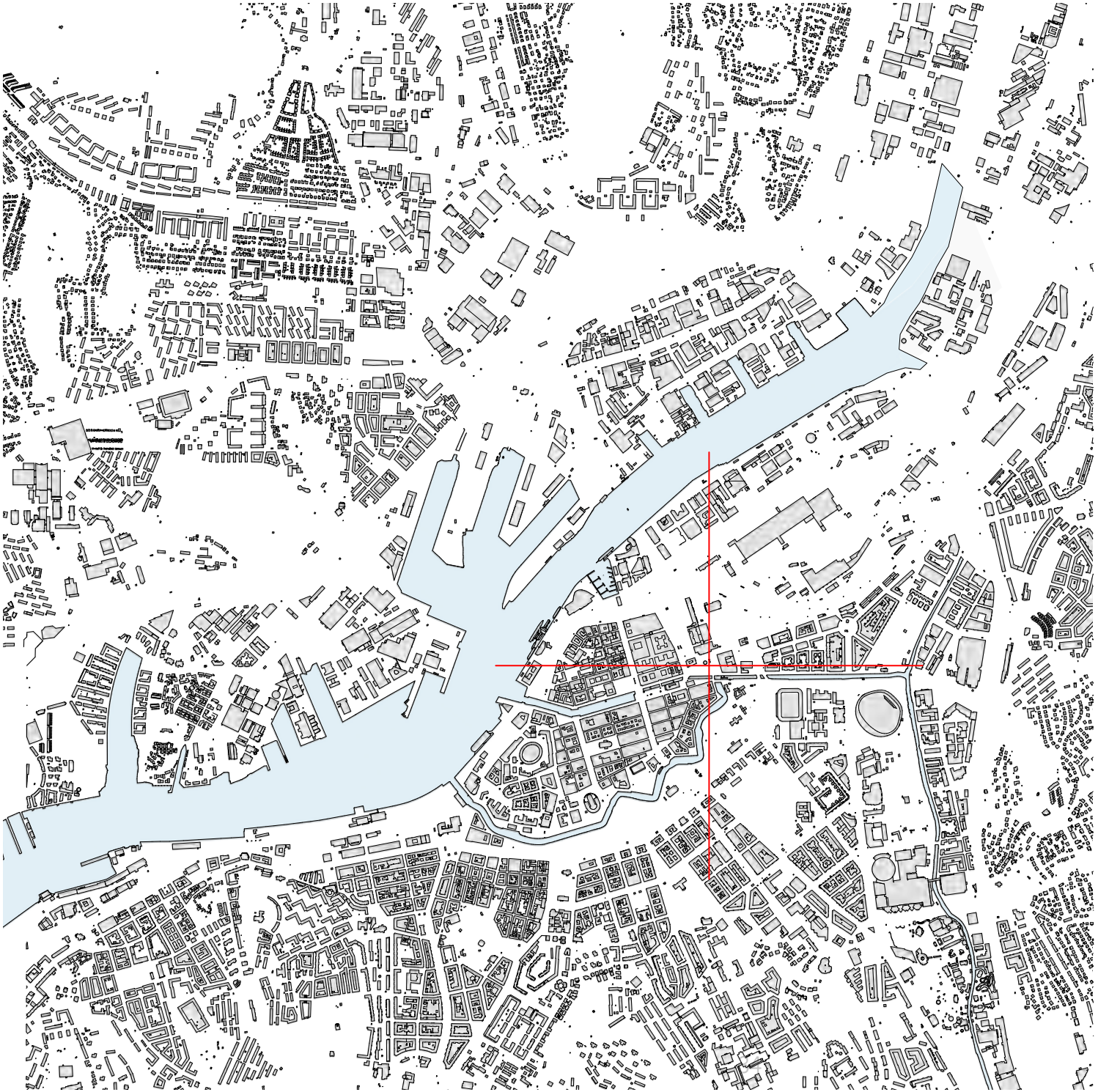
SOCIAL ASPECTS

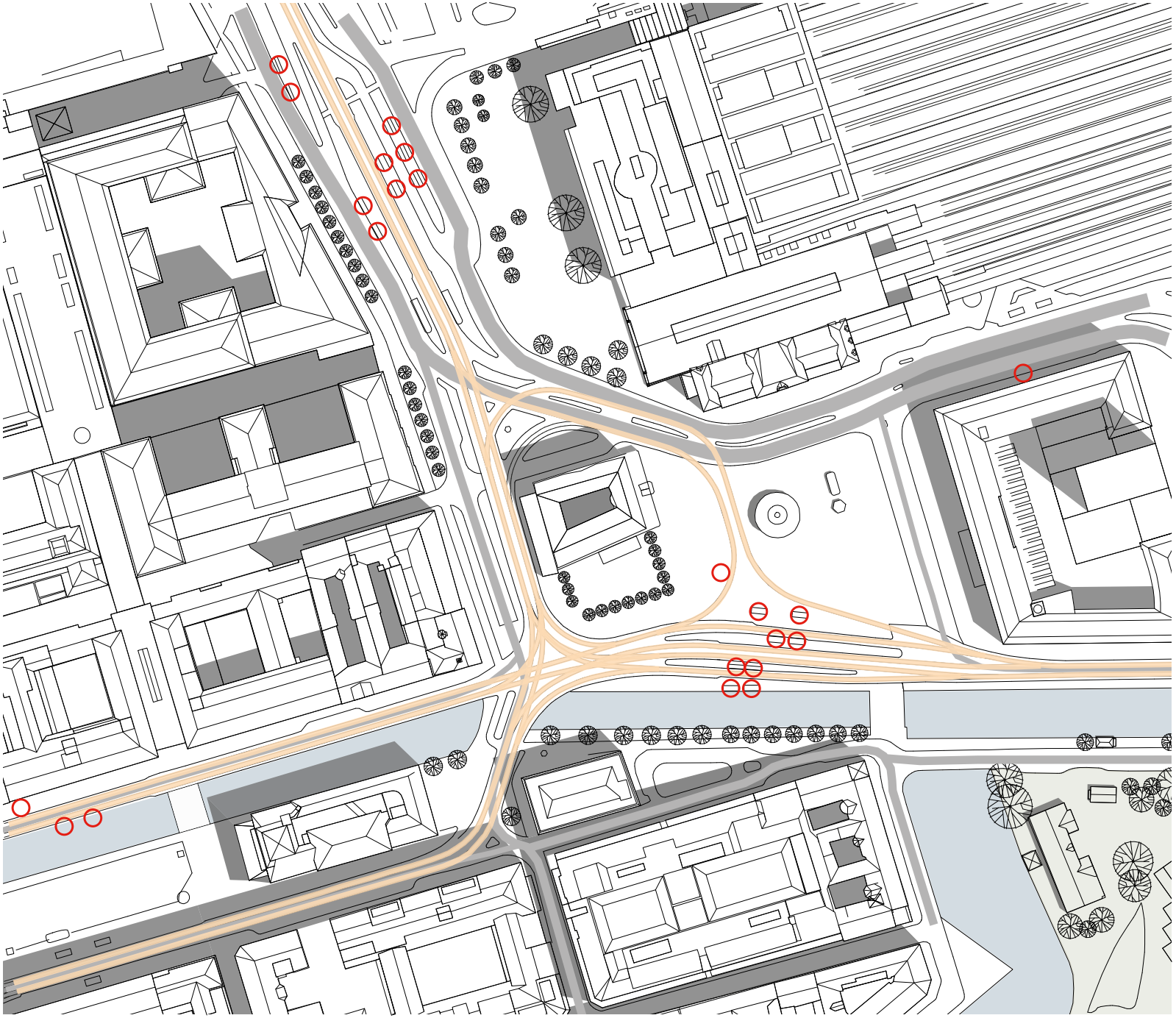
The detail plan addresses the need for quiet areas. The residents and workers of Regional City are entitled to relax and socialize. One solution is with the help of roof terraces. In contrast to the vibrant and active places at ground level, the roof terraces can offer better sunlight, microclimate, and a more relaxing and green environment. However, these areas are not considered to be sufficient to create a pleasant living environment, so supportive green spaces and places in the surrounding area will play an important role in the opportunities for relaxation and recreation.

OUTPUT

Expressions of national interest include the fortress city of the 17th and 18th centuries, the urbanization of the early 19th century, the port, shipping, and trade city, the late 19th-century metropolitan conversion, and the Gothenburg features of the cityscape.
Today in the north of the station building, buildings are planned for up to 36 floors, which form a group of taller buildings with a strong visual effect, a symbol of the growing city and region. The height of the buildings will have a significant impact on the shading and local climate within the plan area and in the surrounding areas like Drottningtorget.
This situation justifies and should highlight a contrast to the dense and highly built with the possibility to utilize Drottningtorget as the open space with a sense of space and respite. Drottningtorget is a grand square that is currently a place you pass. A big city is not only big buildings but also big spaces. This site should be cleaned up and purified on what you want to see and show off. The surrounding buildings are the grand decor scene that gives the square the magnificent decor that the square has. The square is no longer a place on the outskirts of the city but is now very centrally located and will, in the future, be in the middle of the planned new center. The need for more greenery in the area is great, and Drottningtorget could help to form and strengthen a green strip at the beginning of the river and away to the big green Garden space (Trädgårdsföreningen).

THE SITE





Site studies of a current situation regarding traffic.

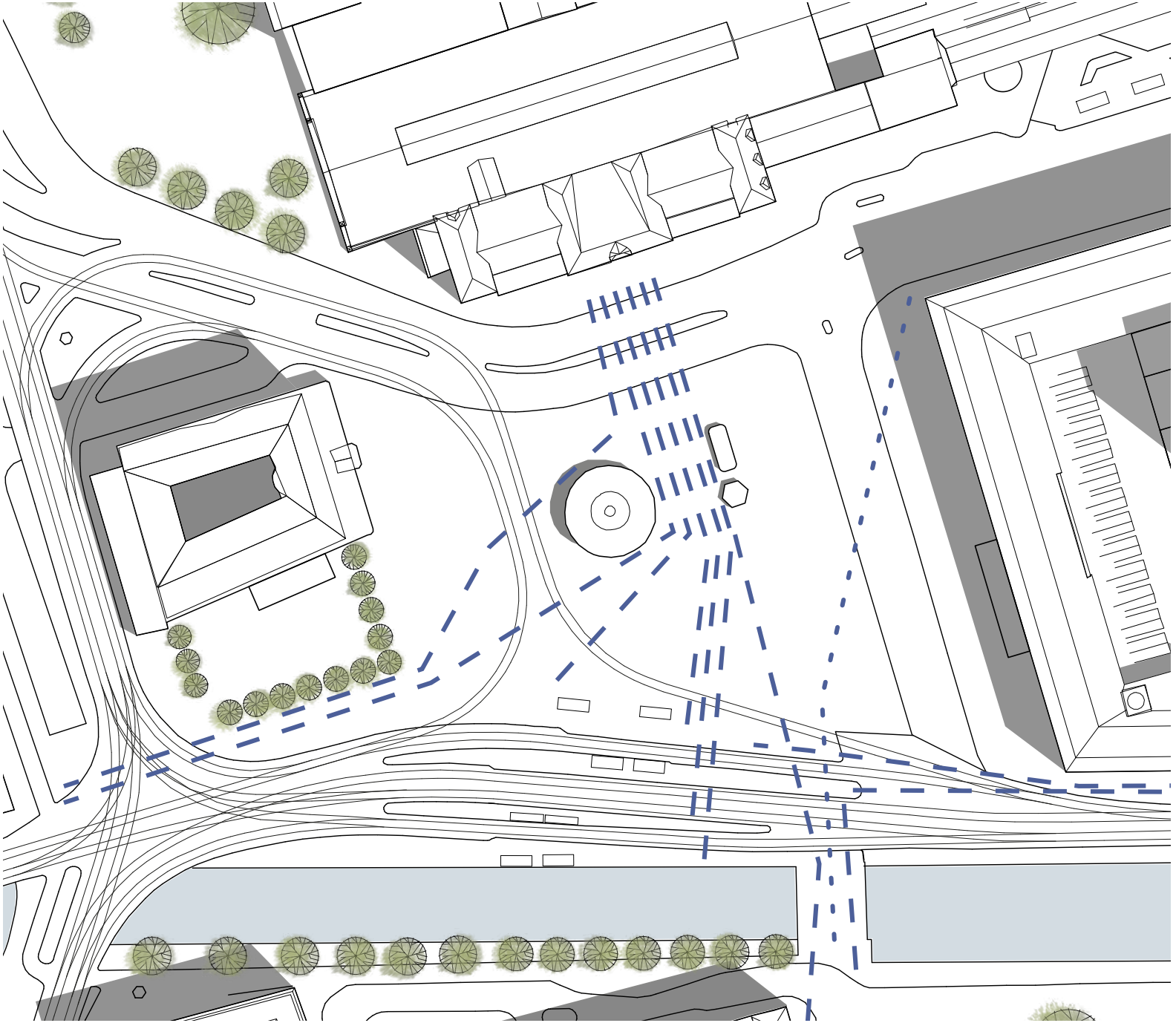
INFRASTRUCTURE/
EXISTING TRAFFIC FLOW

TRAMWAYS

TRAFFIC ROADS

BUSS/TRAM STOPS

SCALE 1:2000



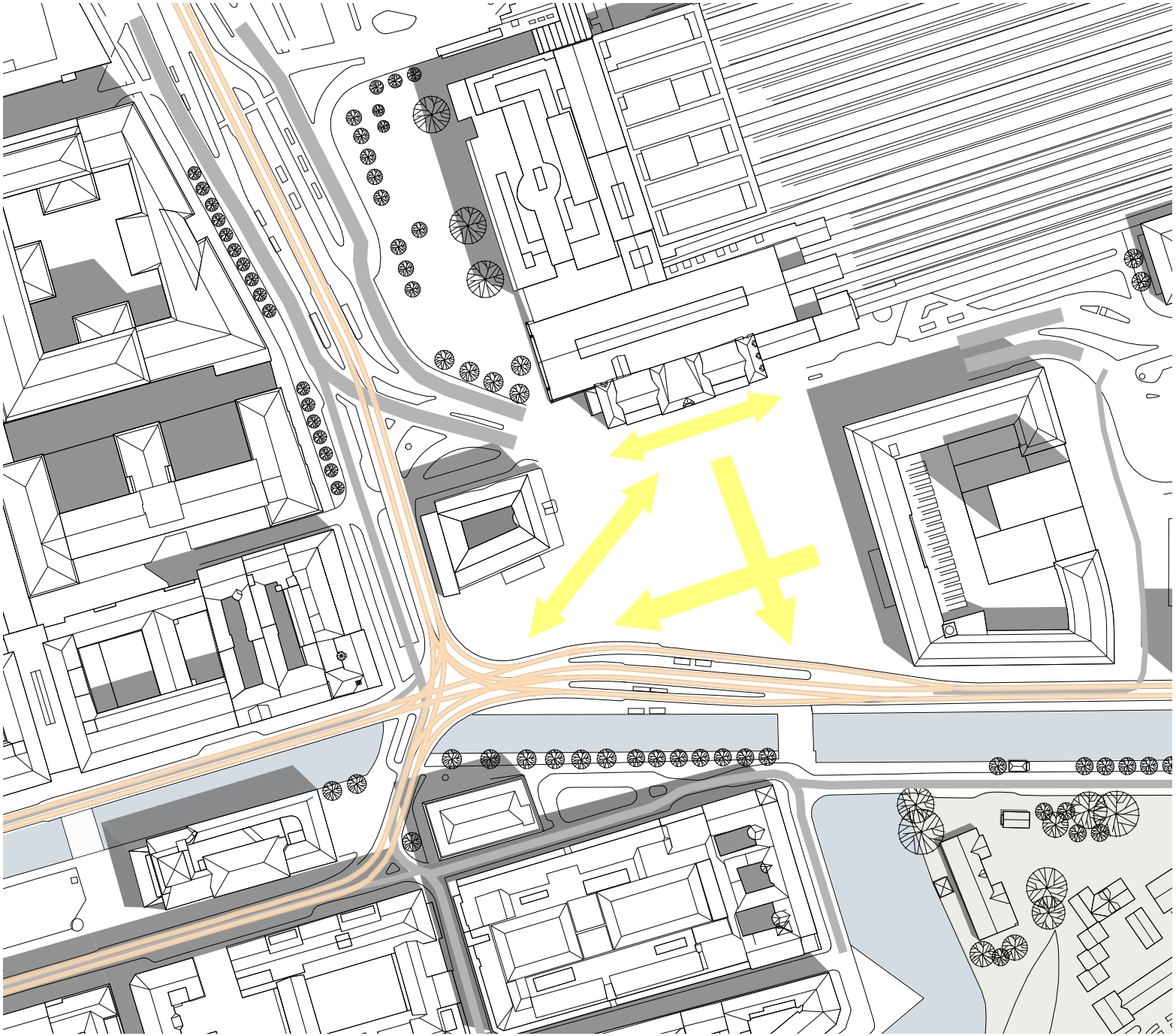
Site studies regarding people's movement of a current situation.

GREEN AREAS/GREEN PARTS

MOST USED WALK PATHS

SPORADICALLY USED WALK PATHS

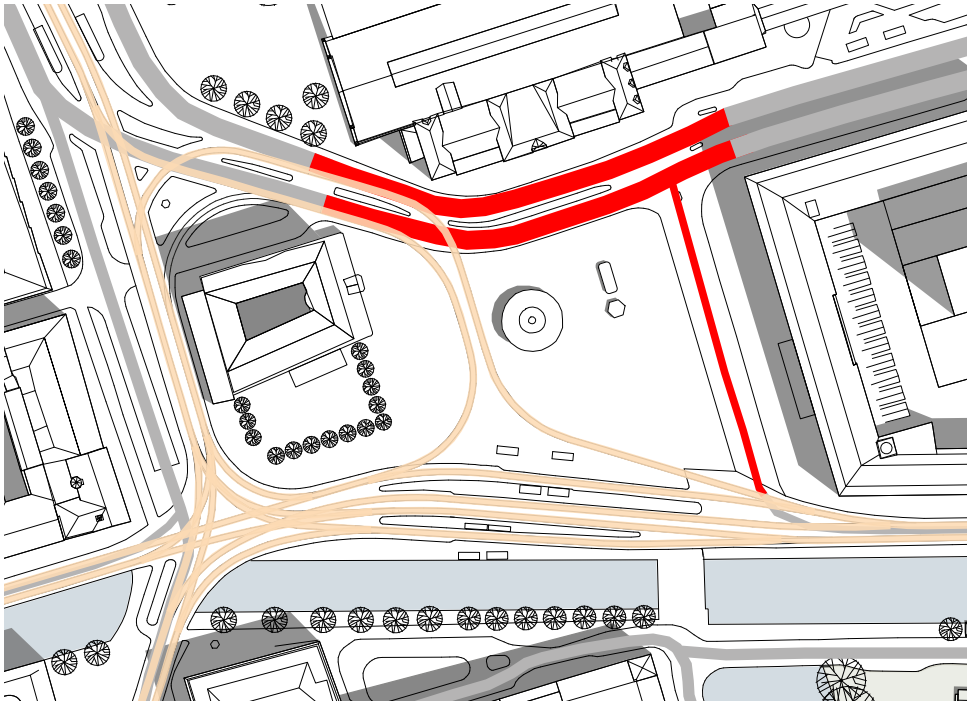
SCALE 1:1000



Existing sightlines. Qualities in these that are not currently being used to their full potential and could be utilized in a much better way.

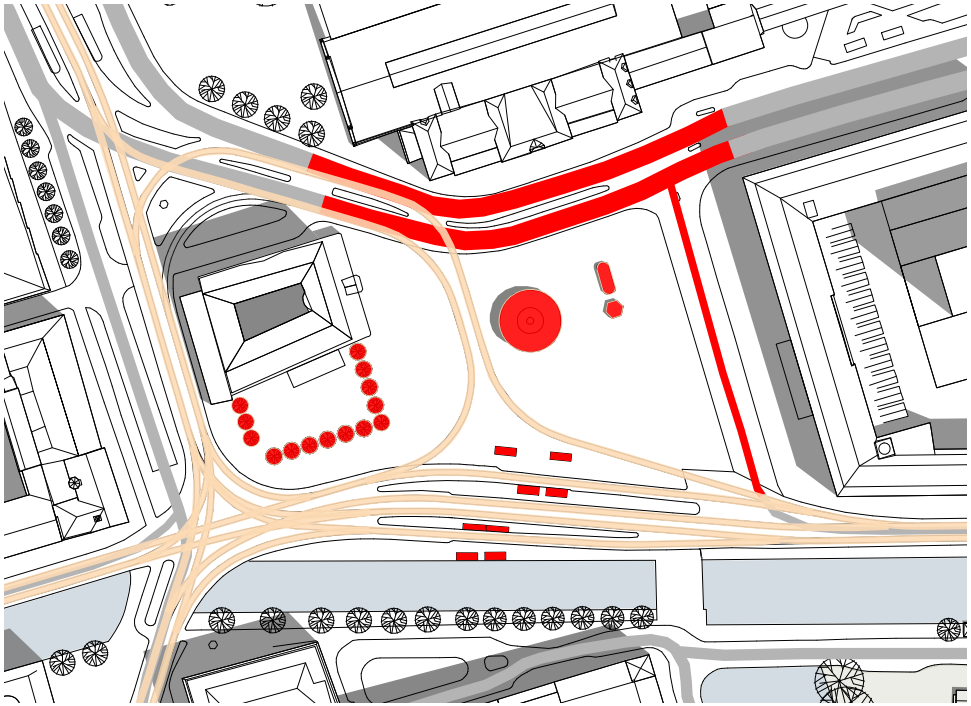
SIGHTLINES

SCALE 1:2000



SCALE 1:2000

Objects marked in red are barriers in the form of roads and tram tracks that are the significant obstacles to making the experience of the site feel uniform. These have an impact on separating the area.



Other objects marked in red are also obstacles that contribute to the fragmentation of the experience of the place here in the form of a kiosk, public toilets, tram stops and eventualy trees.

RESEARCH BY DESIGN

This section will be about research by design and a way to test different ideas and evaluate them and compare them with each other.
I have modified the VOA analysis by replacing the original analysis questions with questions that are important for the site and the concept of the rain experience.
The criteria that are desirable in the architectural element that belongs to the rain experience are hierarchically arranged.
The criteria that are desirable in the architectural element that belongs to the redesigning of the site are equally evaluated.

-COLLECTS AND DELAYS WATER

-EXPERIENCE CHANGES CAUSED BY RAIN

Experience by:

INTERACTION

Contrasts
Reflecting lights
Color

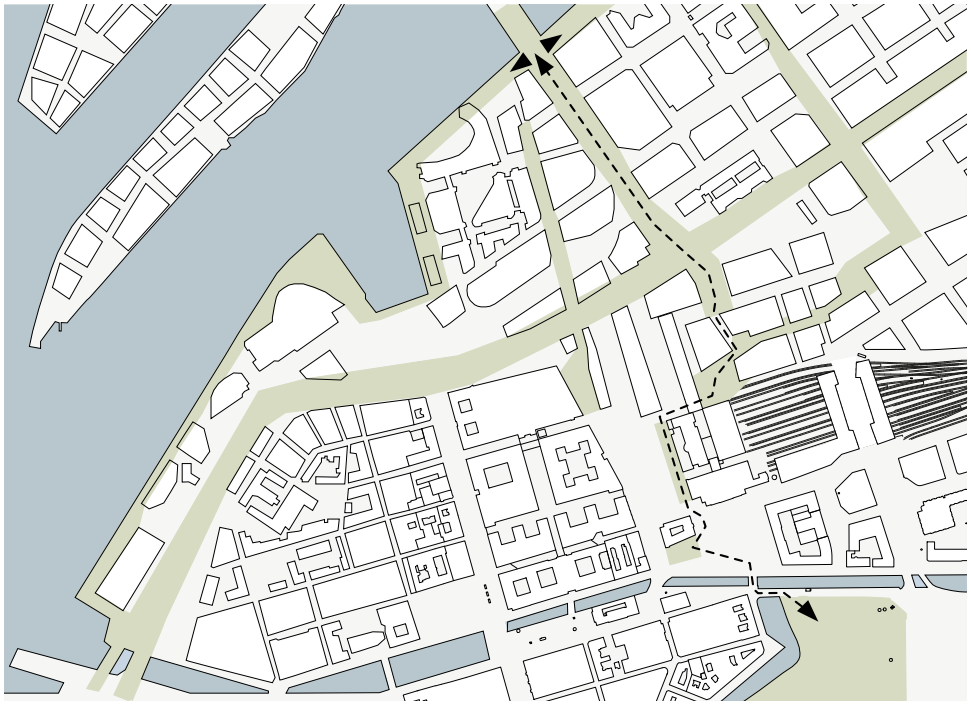
INTERRUPTION

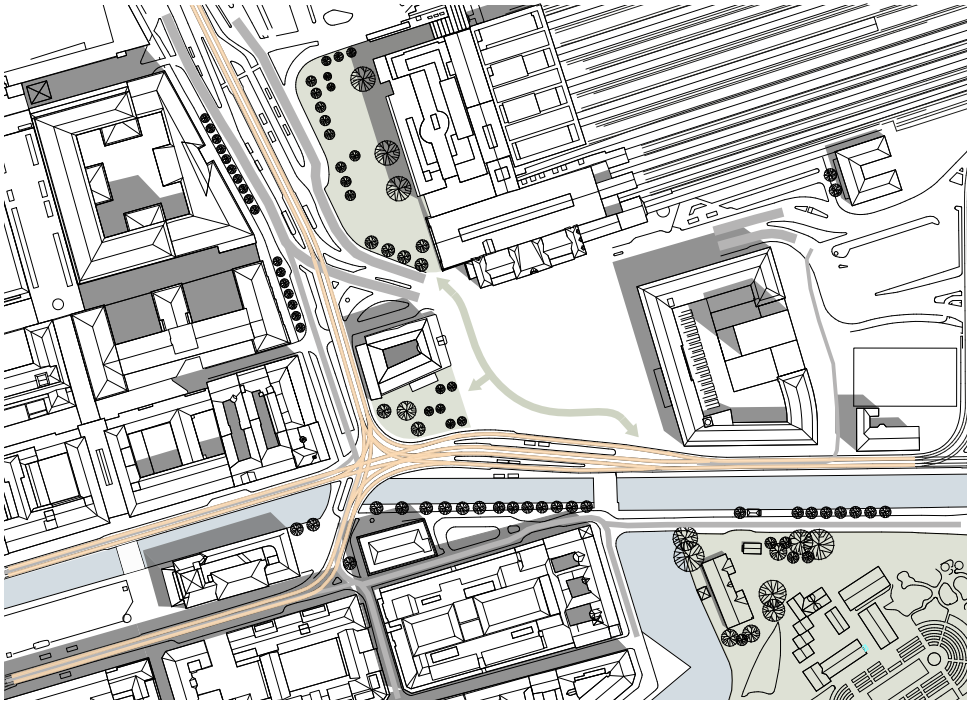
Contrasts
Reflecting lights
Color

-FRAME THE SITE TO CREATE A CLEAR SENSE OF UNITY

-ACTIVATE THE LOCATION

-CREATE SECURE WALK PATHS

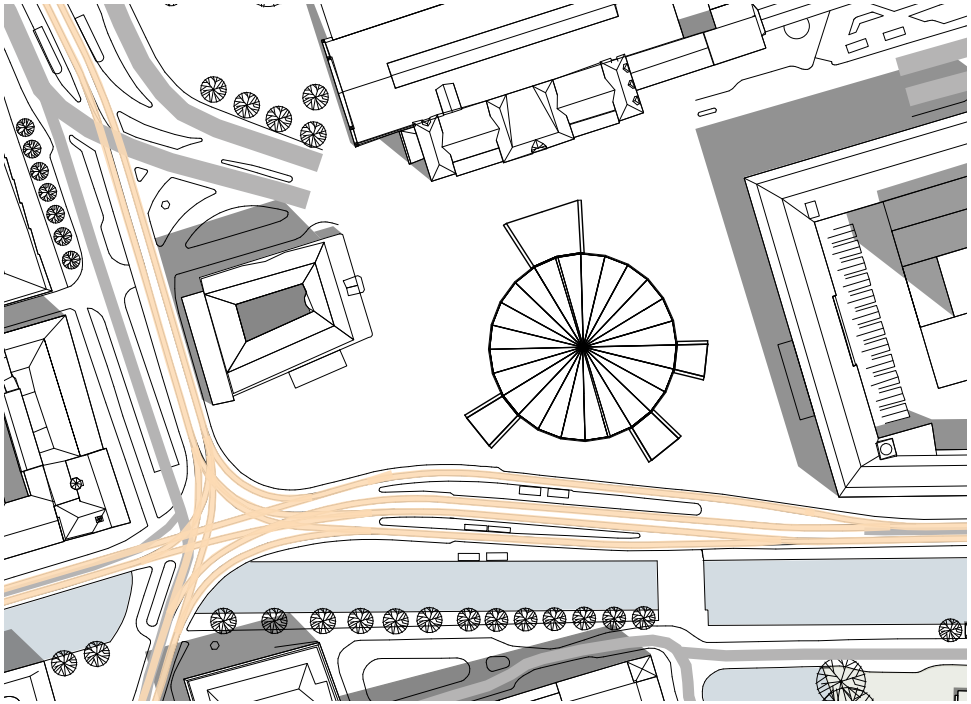


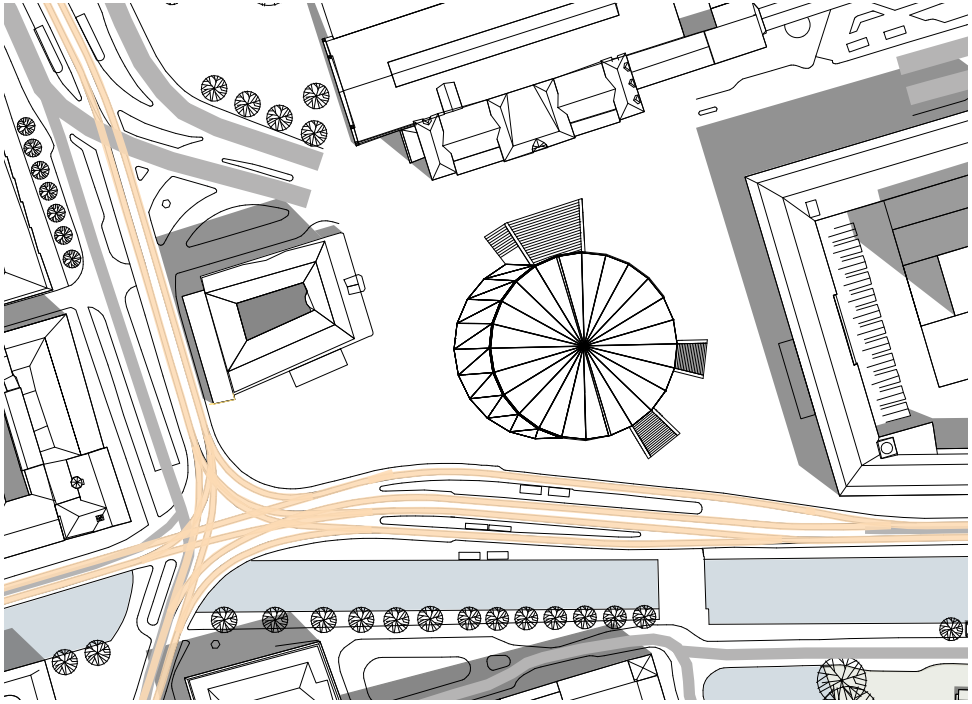


SCALE 1:4000

As a start to my research and suggestions for the site change, I want to look at the the zoomed out picture. A green area on Drottningtorget has many advantages. The need for more greenery in the area is tremendous and Drottningtorget could help to form and strengthen a green strip at the beginning of the river and away to the big green Garden space (Trädgårdsföreningen).

Due to high exploitation in Region City the compensation measures mean that natural and recreational values lost through exploitation are replaced by measures in the immediate area primarily, according to a study done by the City of Gothenburg and the City planing.

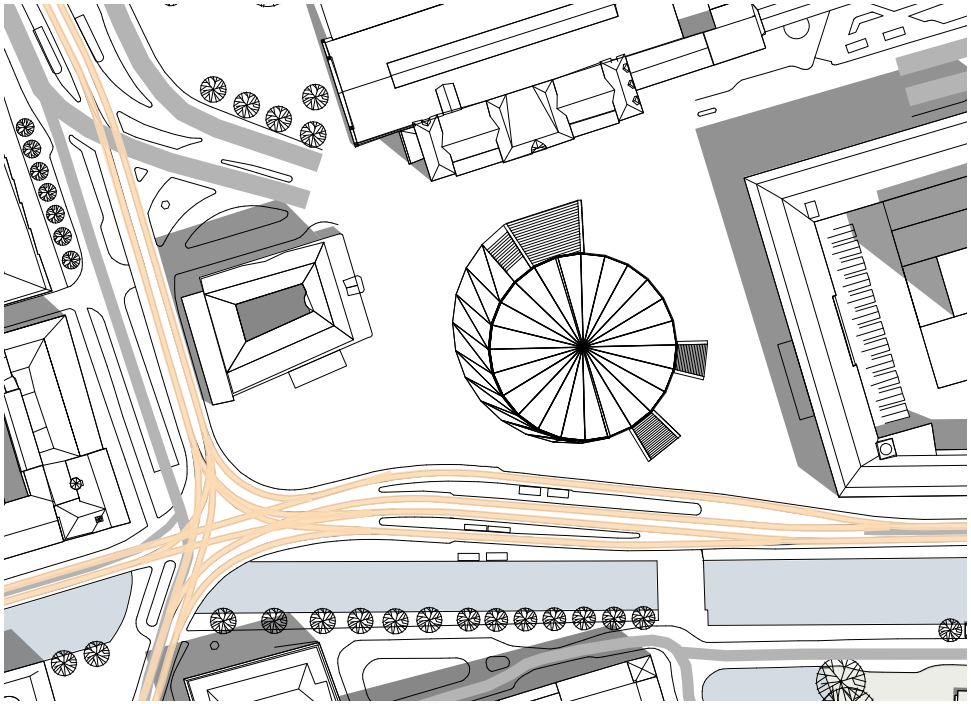




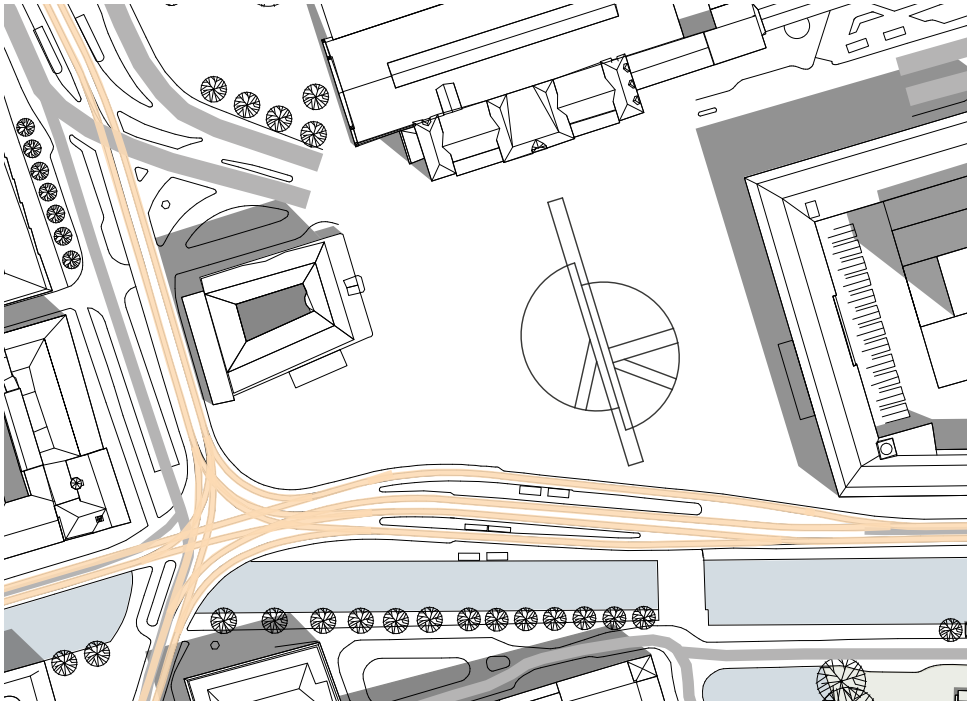
SCALE 1:2000

With the delay of water as a starting point and a design pilot study to VOA analysis, I tried different variants of constructions submerged in the ground that would both help with the storage of water, the communication in the square and give an experience of rain. The circle as a form was an idea where this shape would not compete with the three most closest buildings besides that built in three different styles.

A glazed corridor that is not fully submerged is added. Here the floor level is higher and will therefore always be dry. This will help with the movement between the station's main entrance and the tram stops.

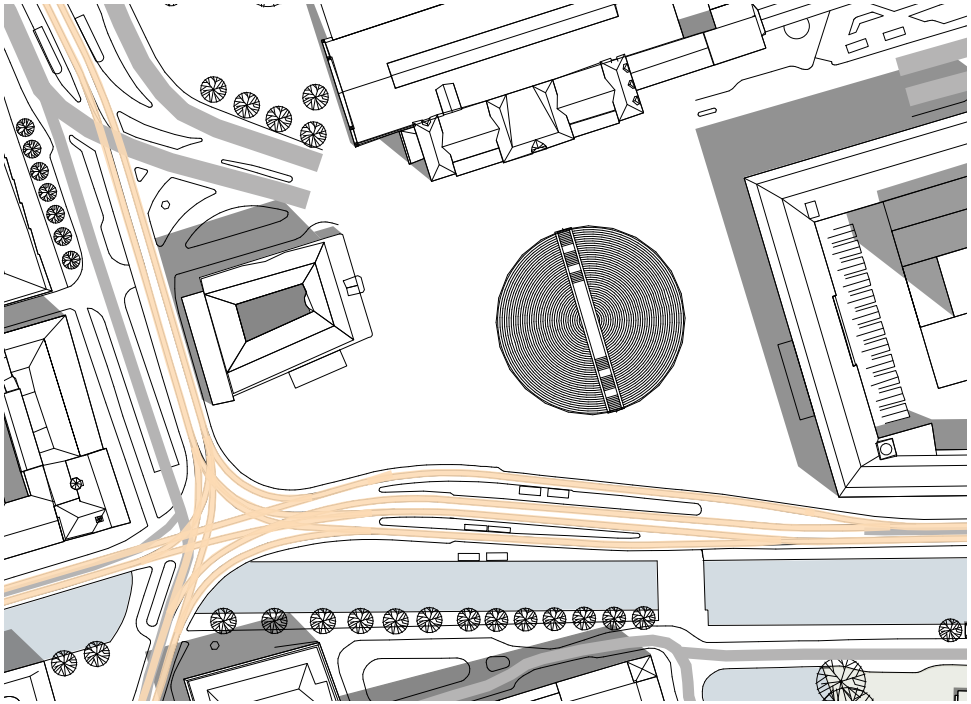


A further improvement of the glazed corridor can accommodate the current kiosk which today is located in the middle of the square.



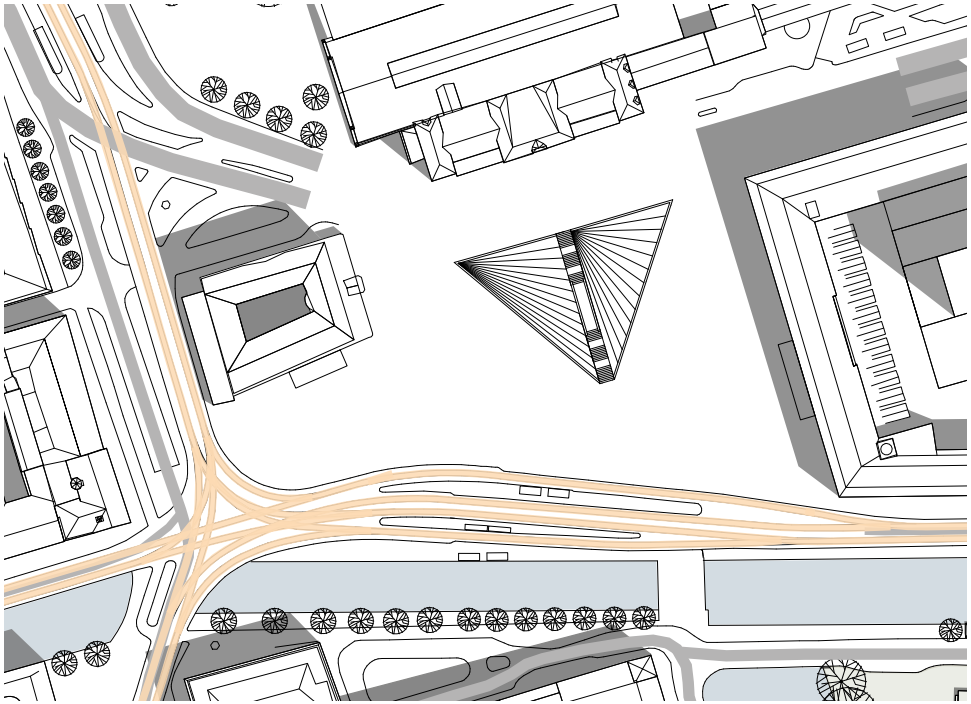
SCALE 1:2000

A try-out to deconstruct the circle and get a better balance in the placement on the square.

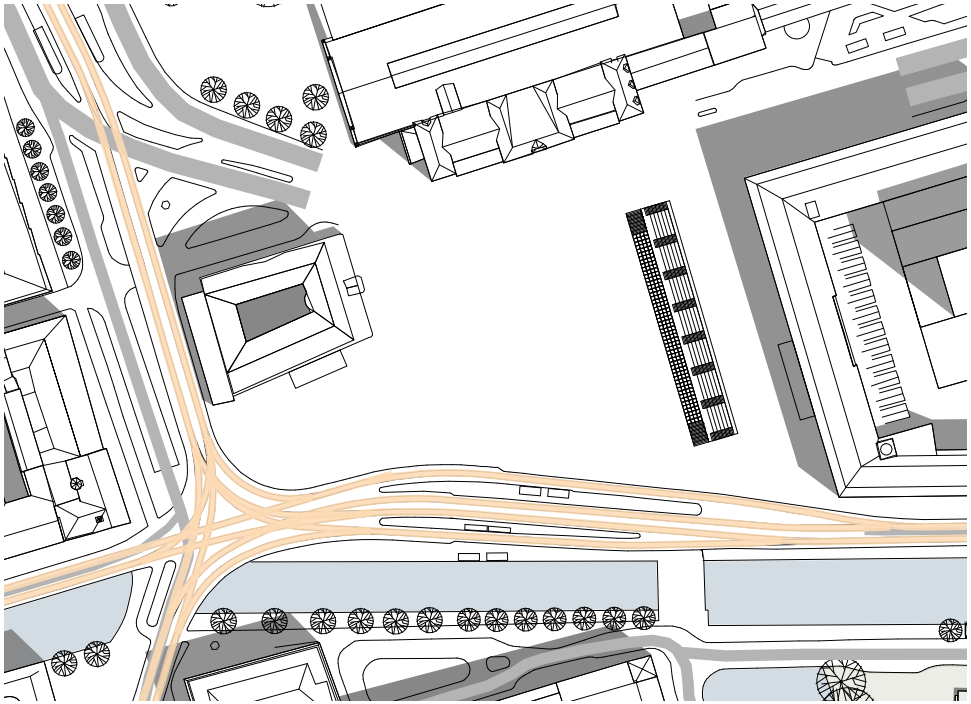


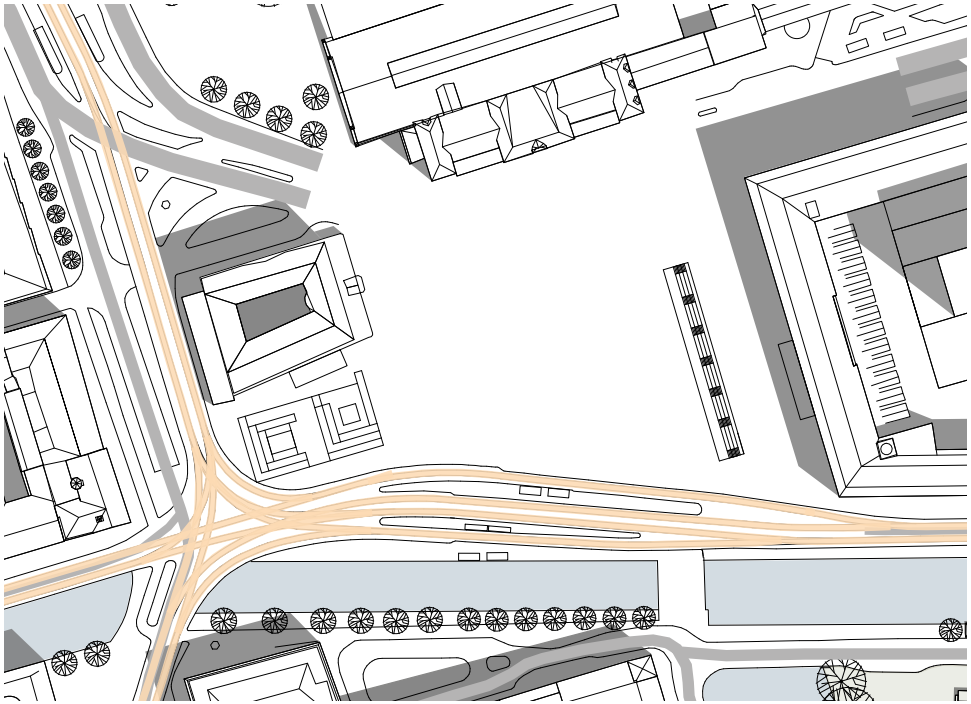
SCALE 1:2000

Here is a step towards finding the simplest and most necessary for the project and its desired basic principles. The glazed circle contains sloping steps towards the center of the ring. Longitudinal walls protect the shielded corridor in the middle of the circle from the rising water. The corridor connects the station's main entrance with the tram stops.



Similar corridor as in the previous example with sloping steps below the glazed surface and still below ground level, but the frame has been changed to a triangle, an attempt to see how the character of the place changes with a different form.

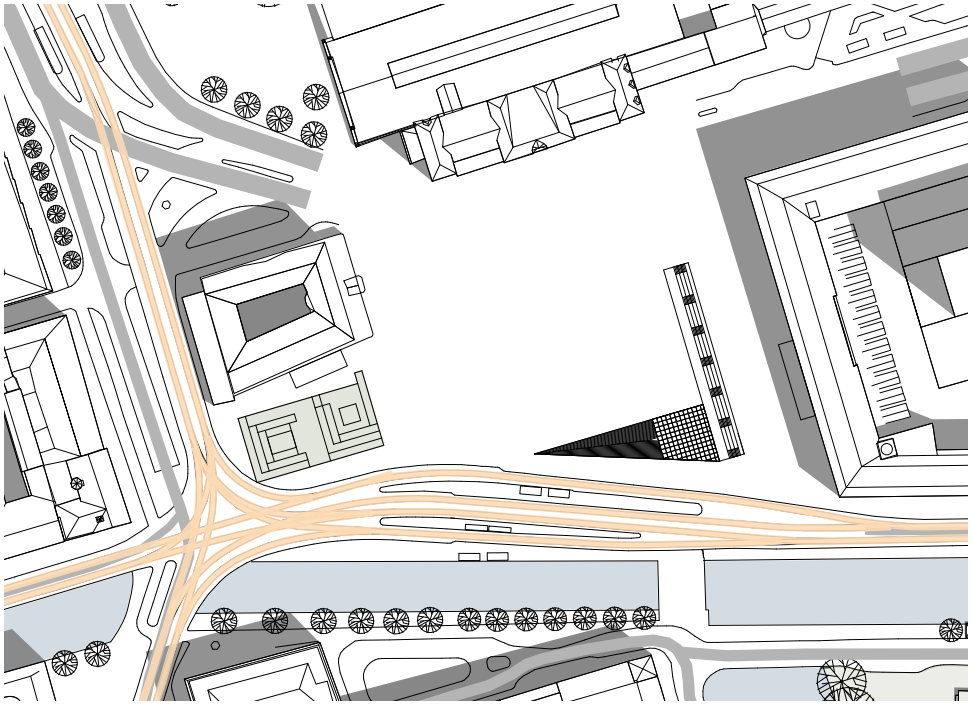




SCALE 1:2000

Further on, with the purpose of simplifying and finding solutions that feel self-evident and uncomplicated, I changed my idea of the triangular structure placed in the middle of the site to a strategy that articulate the existing buildings and the site as a whole. The glazed corridor remains below ground level, next to it, there is now a staircase that can act as a water reservoir during heavy rainfall but also as a place to sit and rest when there is drought.

Here the glazed corridor is removed. The stairs case is only 1.6 m deep and proportionally placed between the two outdoor stairs of the post office.
At Hotel Eggers south side, a green area was established, which helps to frame the square and give it a more enclosed shape.



SCALE 1:2000

A third element is tested here in the form of tram stops placed below ground and its associated triangular staircase. The place has its natural ending in with the canal in the southern part. Unfortunately, many tram shelters and fences stand in the way and contribute to ambiguity in framing.

PROPOSAL

LOCATION ON SITE

WATER COLLECTOR / STAIRS

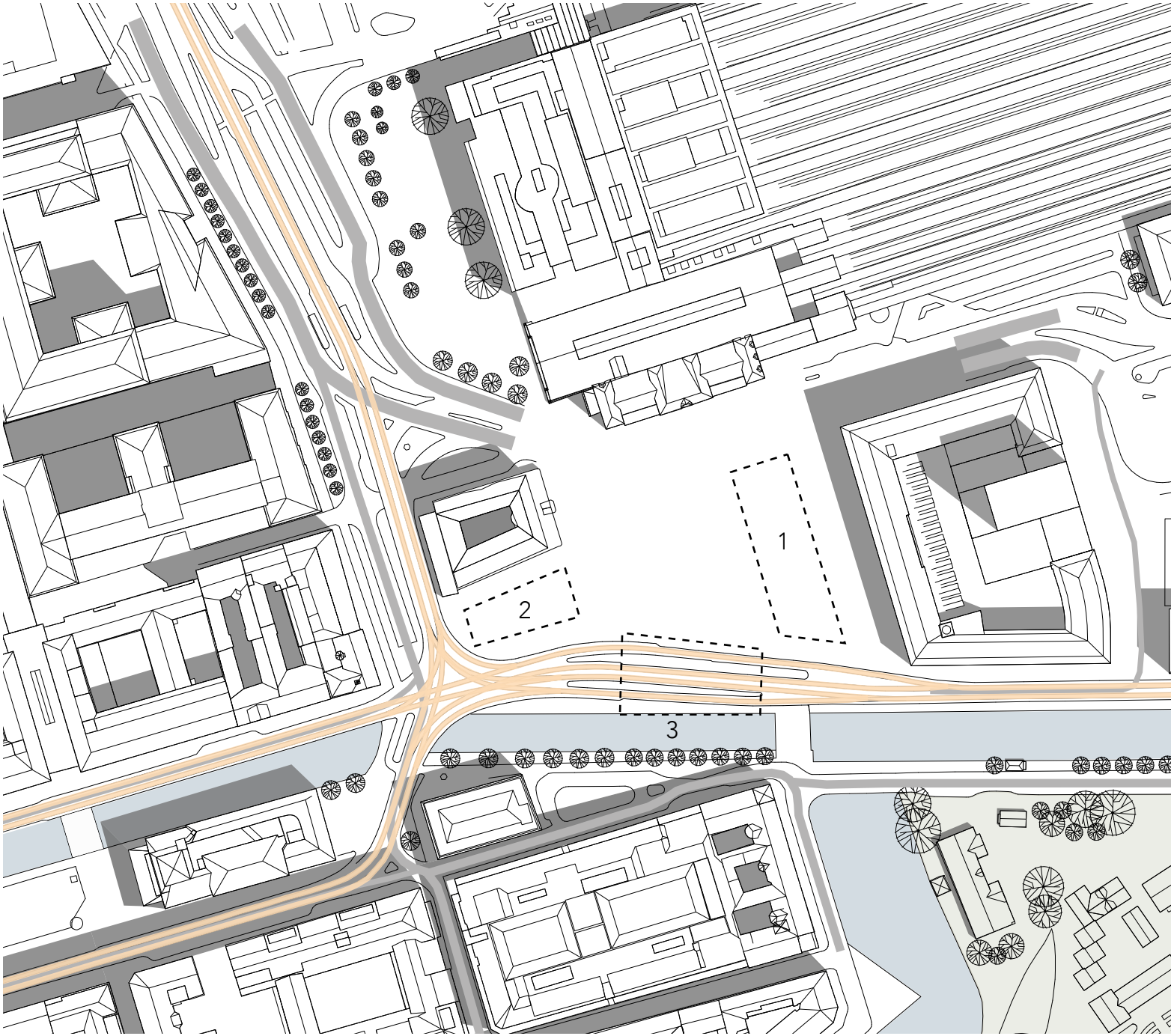
- plan 1:400
- visualization
- concepts
- section
- volume and proportion study
- visualization evening view

GREEN AREA

- plan 1:400
- visualization
- concepts, movement diagram
- section A-A
- section B-B
- planting proposal
- lighting presentation
- visualization

TRAM STOP SHELTER

- plan 1:400
- visualization
- concepts diagrams
- visualization



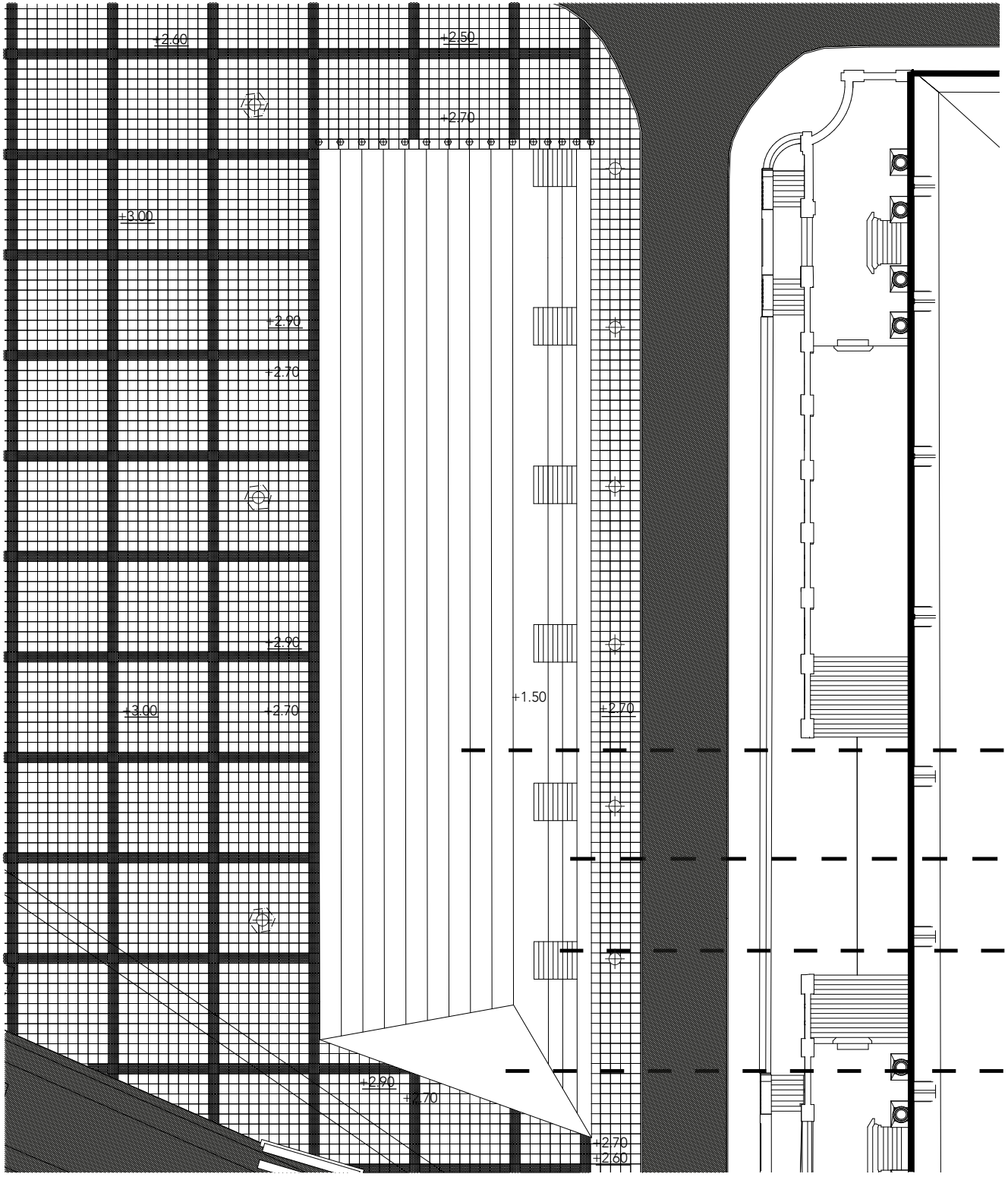
Three separate zones with three different characters.

1. Water collector/stairs.

2. Green area.

3. Rain shelter/tram stop.

WATER COLLECTOR / STAIRS



BUILDING ABOVE GROUND

PAVERS 10 X10 cm

PAVERS 10 X10 cm
MIXED USE AREA

CONCRETE PAVEMENT
REUSED 70 X 70 cm

PILLAR 80 cm HIGH

LIGHTING

+0.00 PROPOSED GROUND HEIGHT

+0.00 EXISTING GROUND HEIGHT

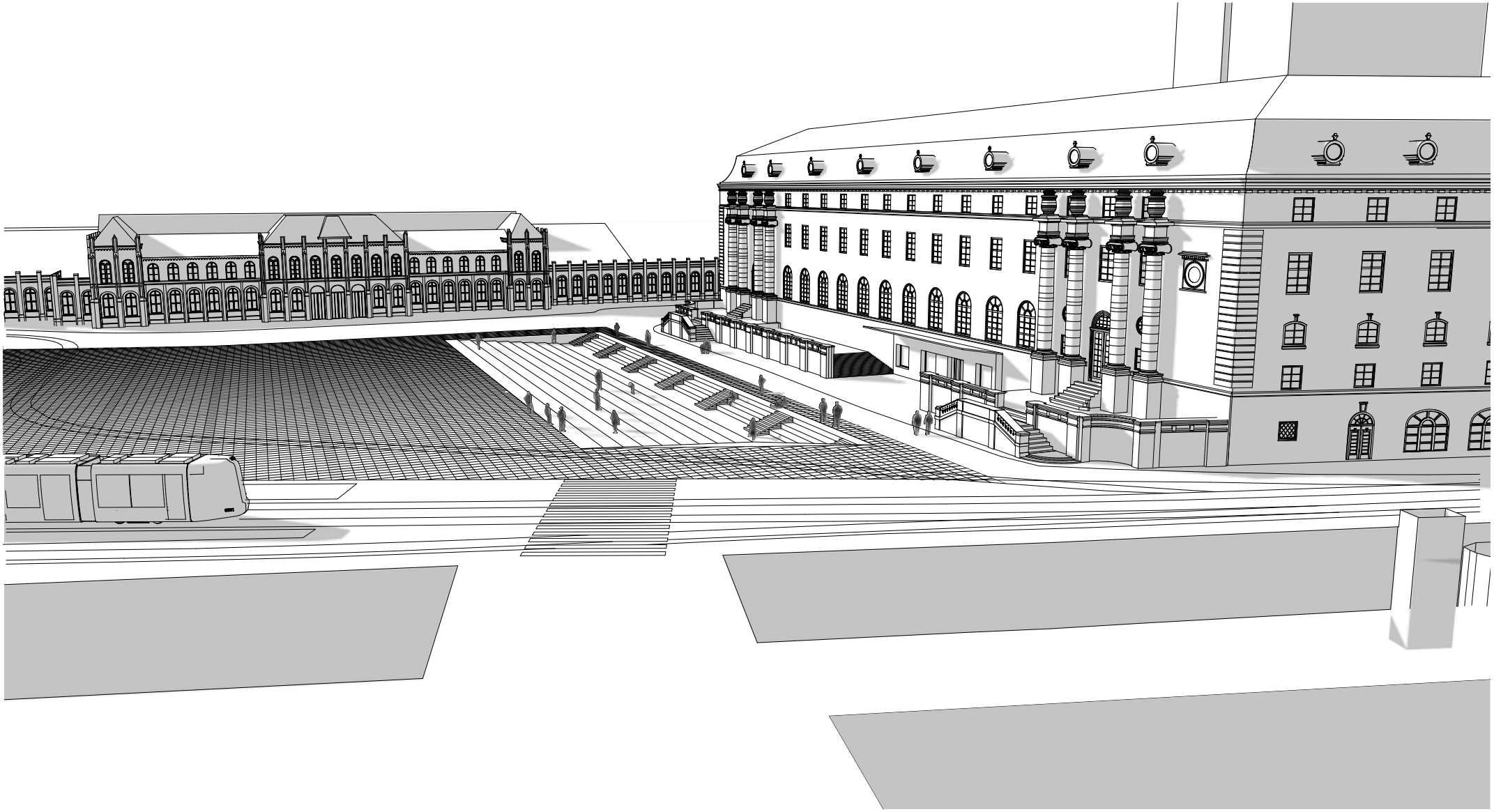
STAIRS MADE IN GRANITE
33 X 150 cm

STAIRS MADE IN GRANITE
40 X 100 cm

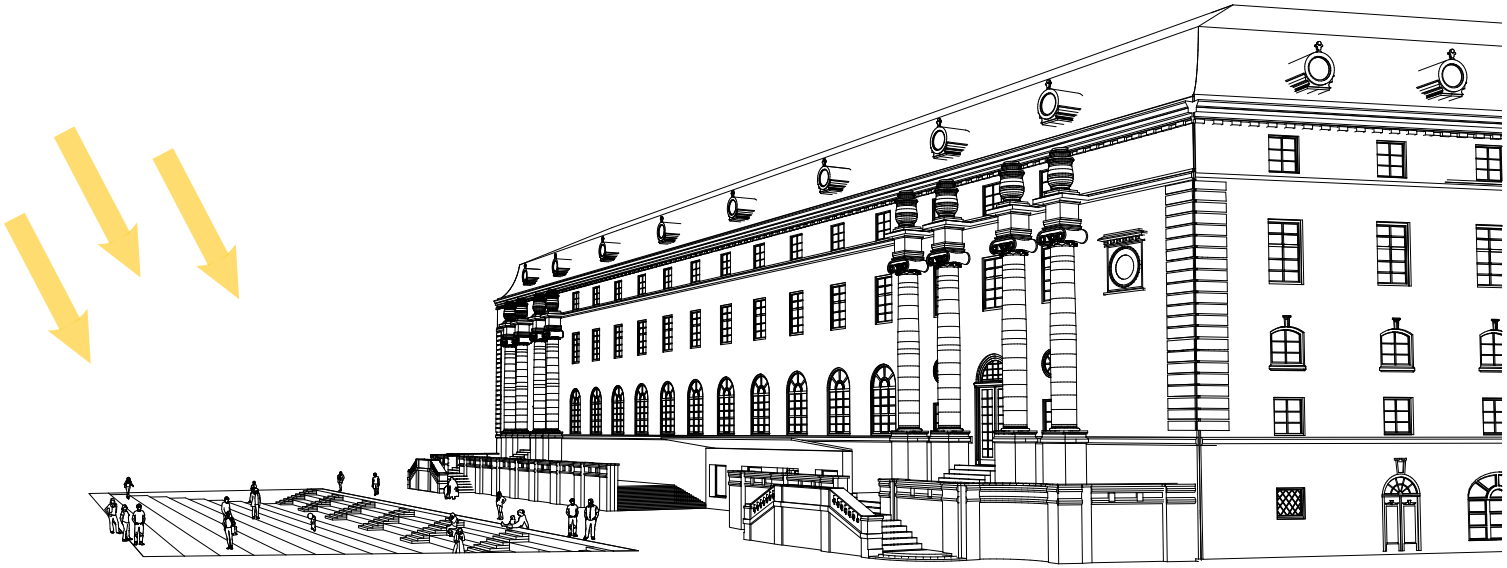
STAIRS MADE IN GRANITE
13 X 33 cm

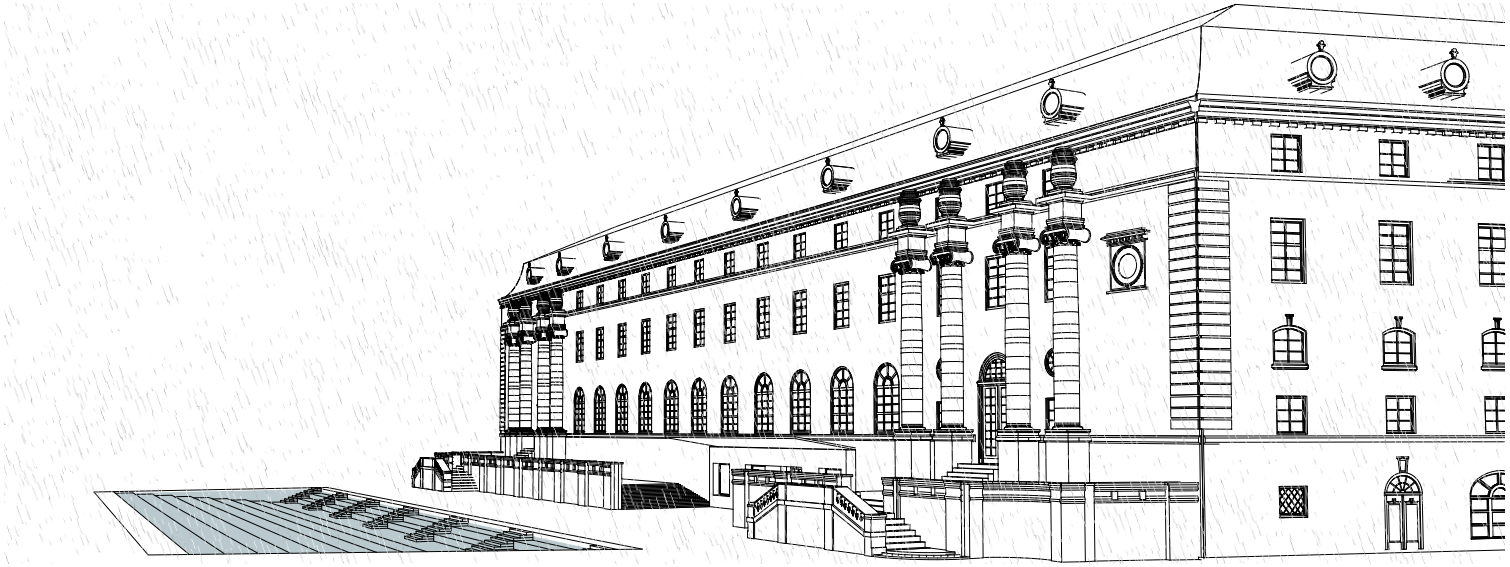
CONCRETE SLOPED WALL
6,4 DEGREES

PLAN SCALE 1:400

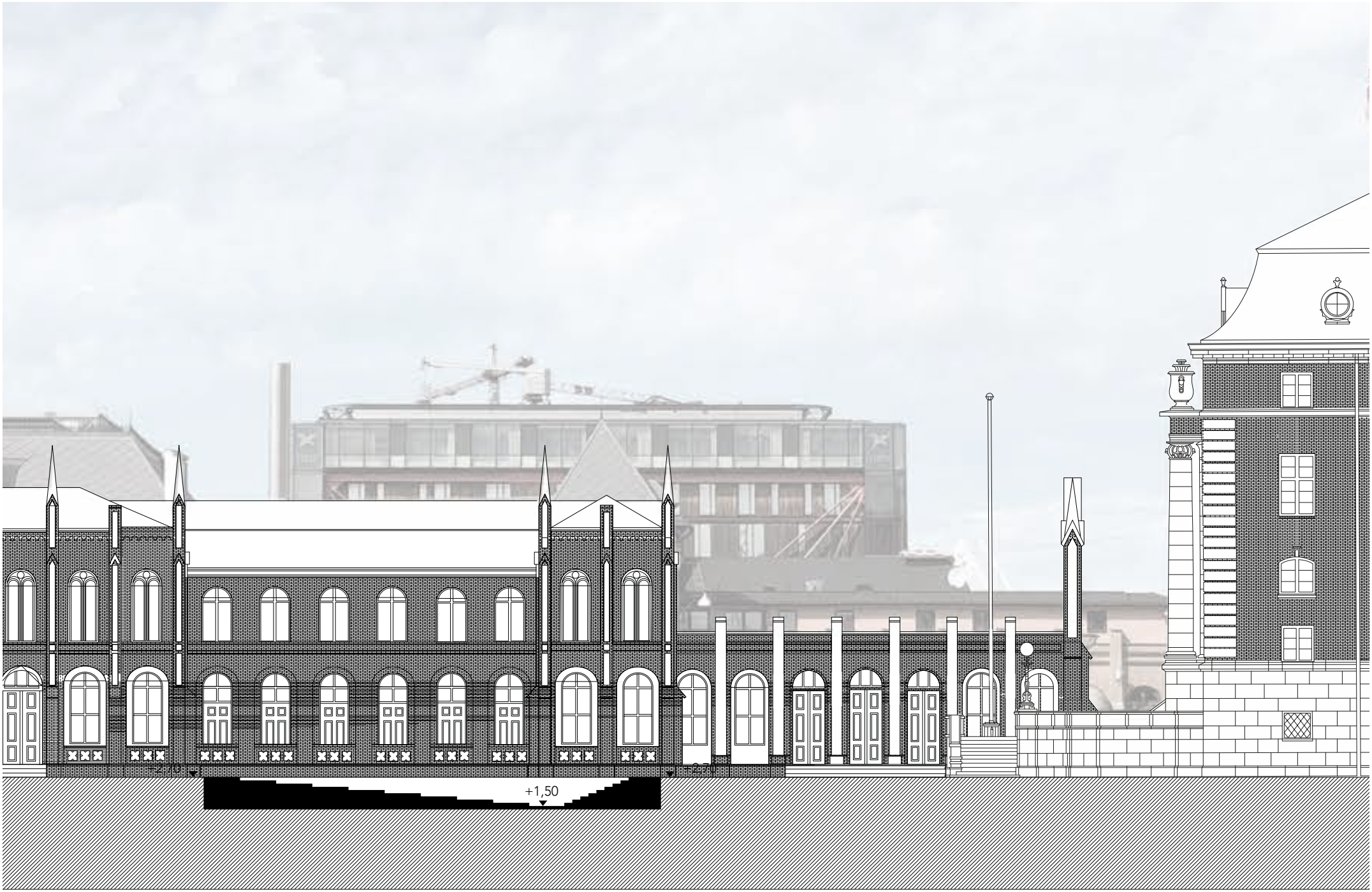


WATER COLLECTOR / STAIRS



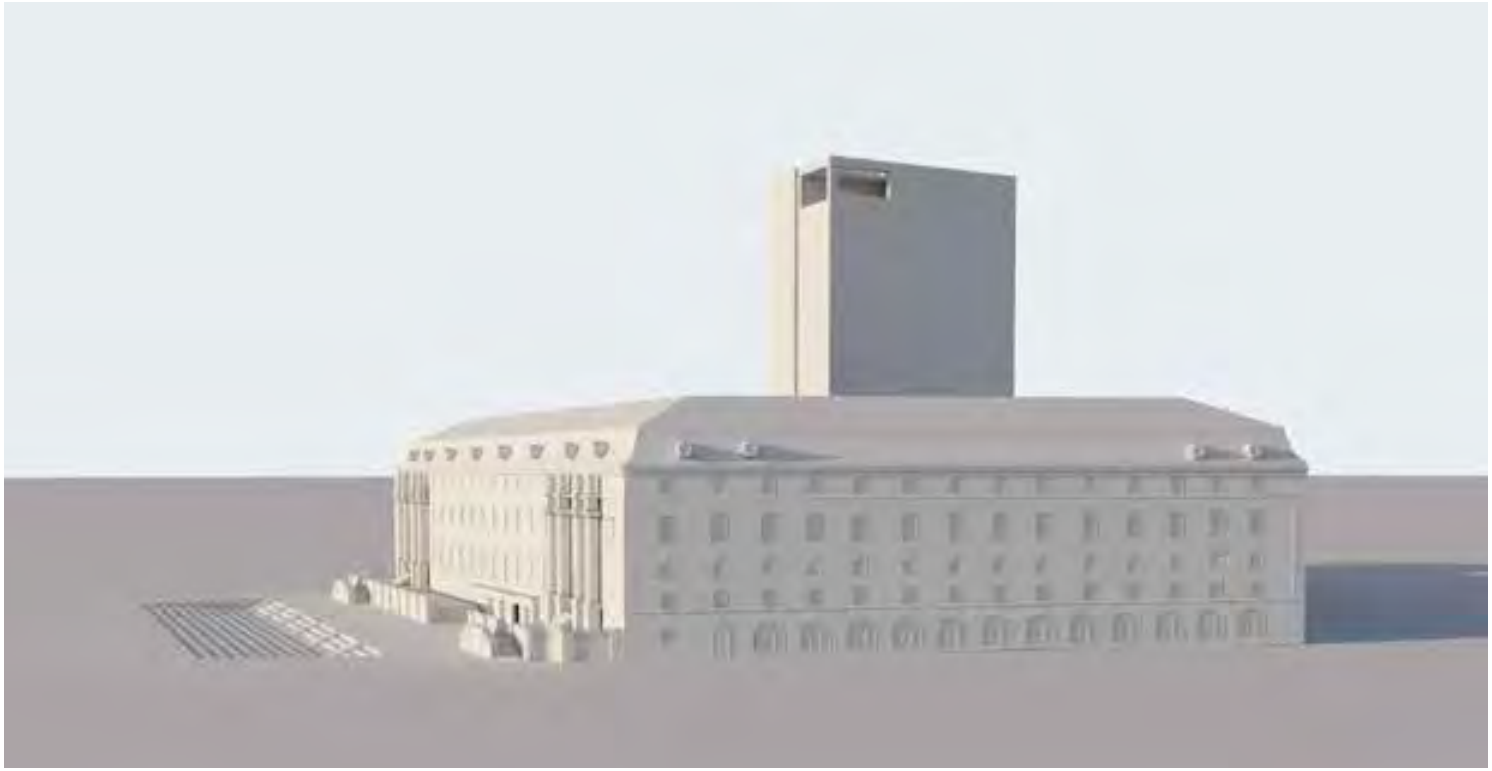


The stairs in front of the Post Hotel have different functions and values. It is both a water reservoir that has a feature which helps to delay the rainwater from falling directly into canalization and also to collect water in the event of flooding. The stairs also help to frame the eastern part of the site and strengthen the northbound line along the post hotel facade. Also acting pre-entrance to the hotel, thereby it articulates and increase the entire post office facade and its function as a backdrop for the eastern frame of the square. According to my desired criteria, in addition to the practical part, the stairs have an experience ingredient that causes the place to change when it rains. When the staircase fills with rainwater, a mirror surface of varying size creates. However, when the sun is shining, and it is dry, the stairs attract people who have the opportunity to sit down and admire the place and the other facades and houses all around.



SECTION 1:200

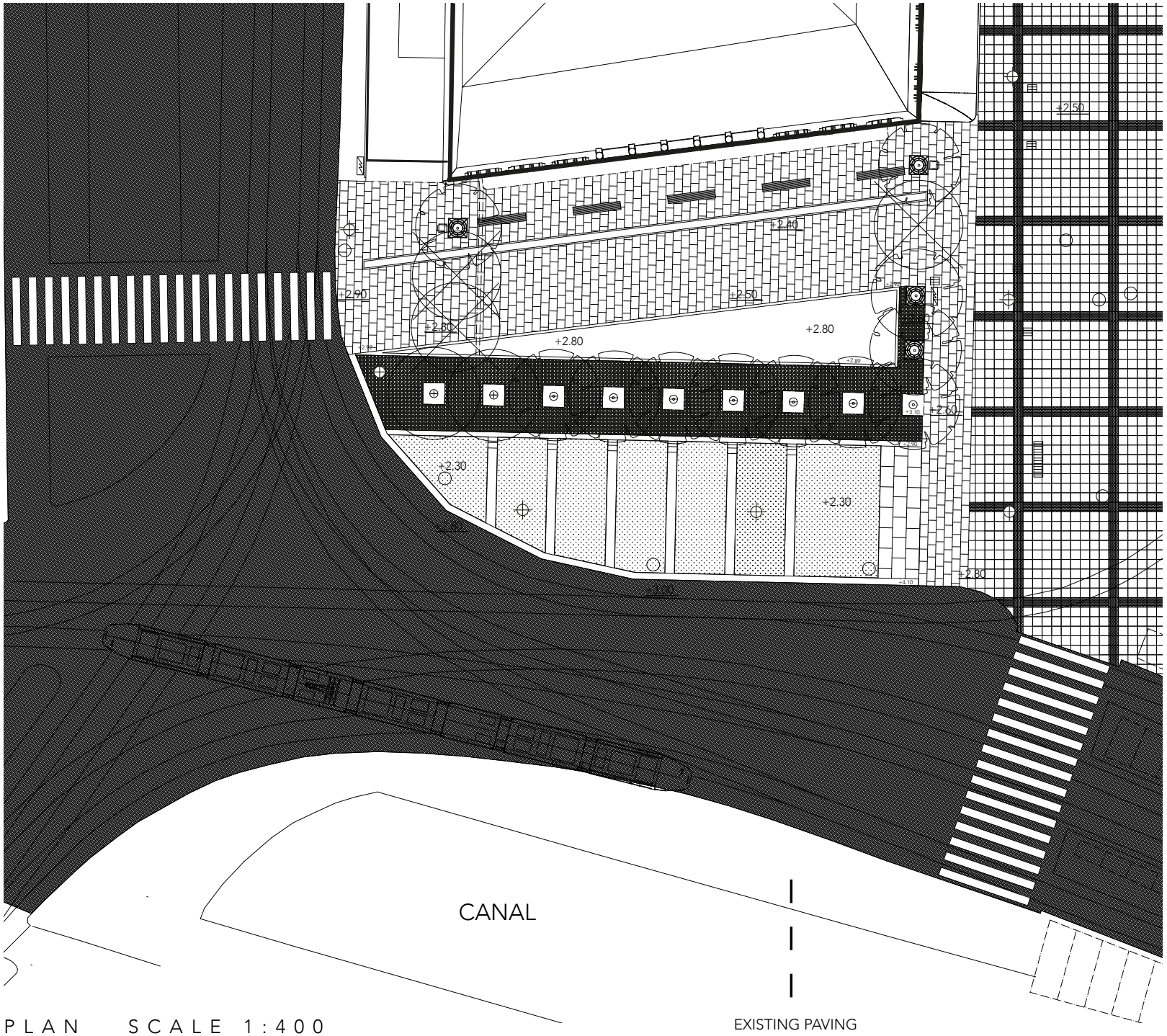
VOLUME AND PROPORTION STUDY



VOLUME AND PROPORTION STUDY

VISUALIZATION EVENING VIEW

GREEN AREA



PLAN SCALE 1:400

EXISTING PAVING

BUILDING ABOVE GROUND

PAVERS 10 X10 cm

PAVERS 10 X10 cm
MIXED USE AREA

CONCRETE PAVEMENT
REUSED 70 X 70 cm

STAIRS MADE IN GRANITE
100 X 150 cm

PAVERS MADE IN NATURAL STONE
60 X 90 cm

LAND GRID

SEATING MADE IN GRANITE
60 X 350 cm

EXISTING LIGHTING

EXISTING TREE

PROPOSED TREE

REMOVED TREE

GRAVEL MADE OF CRUSHED
RED BRICKS

PLANTING

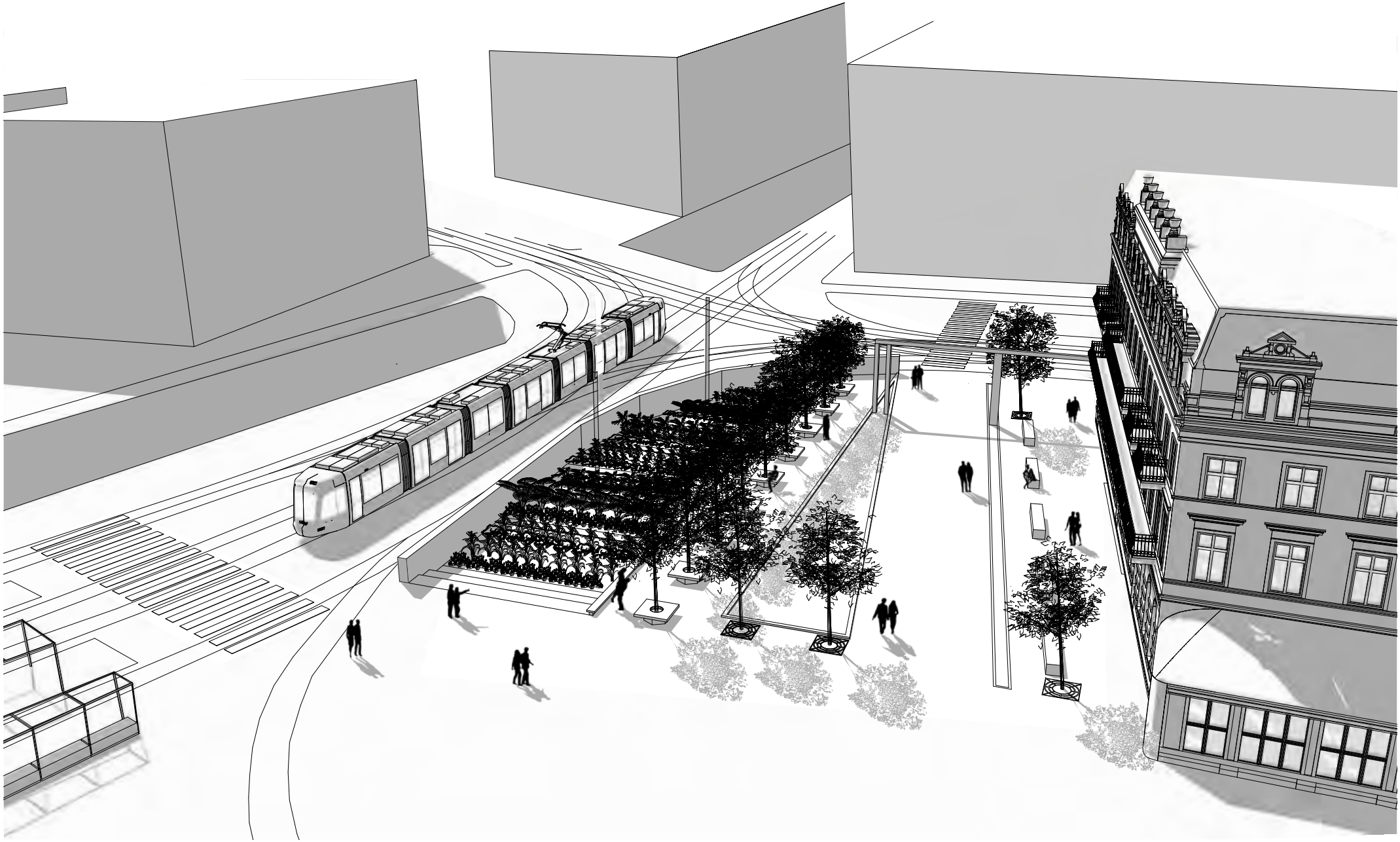
WELLS

ELECTRICITY BOX

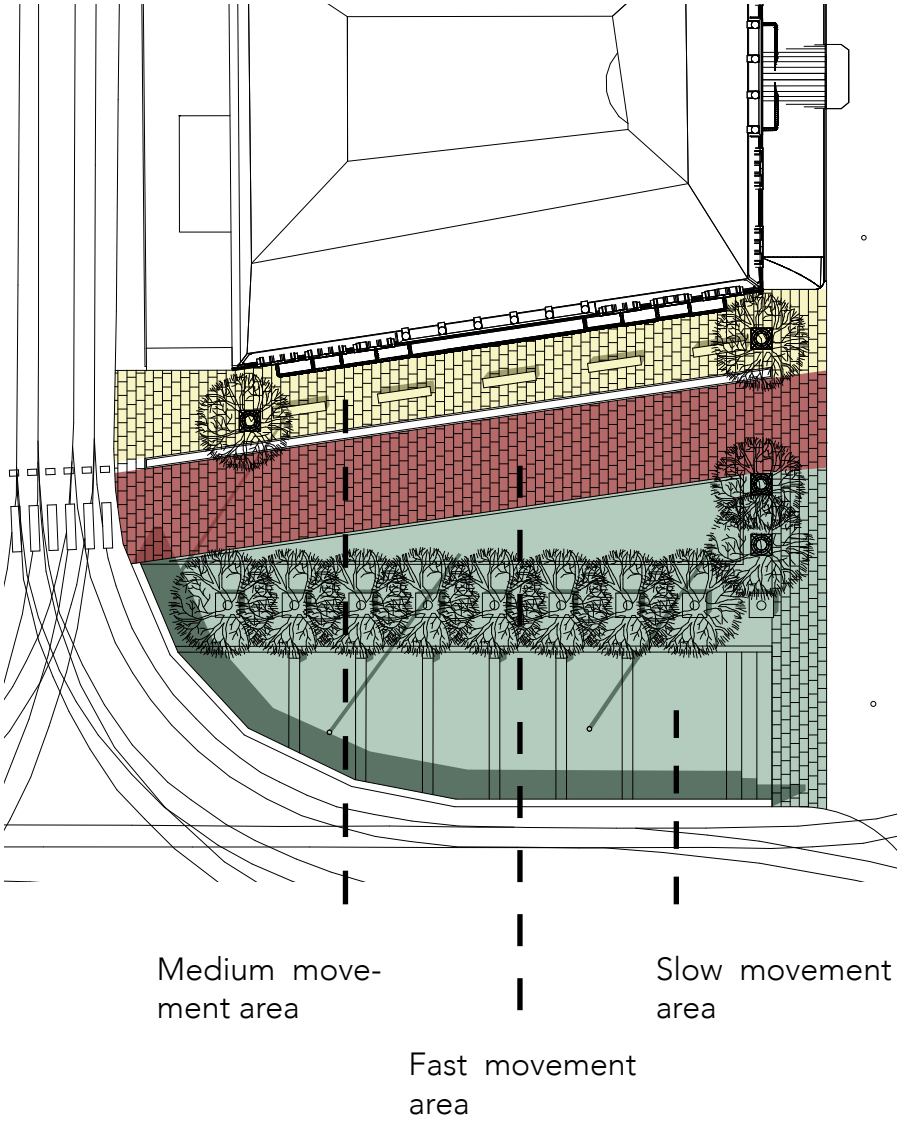
TRASH BOX

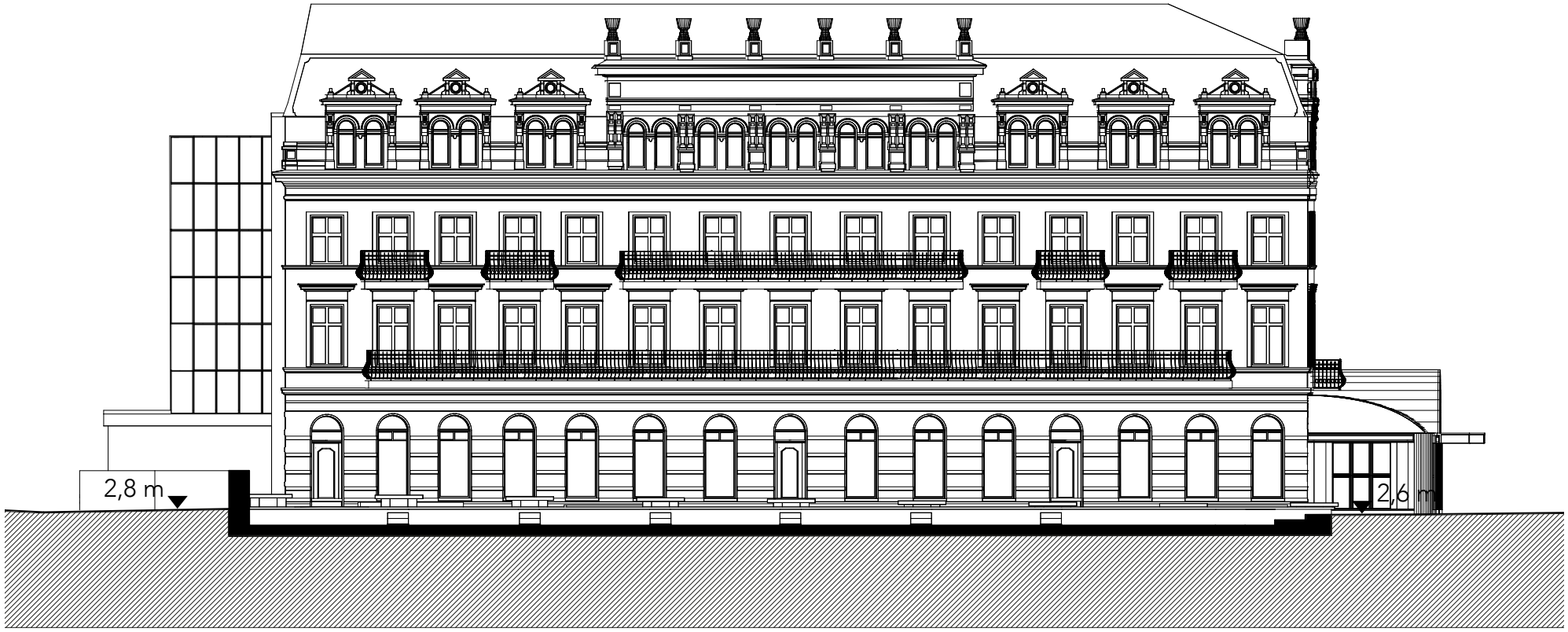
+0.00 PROPOSED GROUND HEIGHT

+0.00 EXISTING GROUND HEIGHT

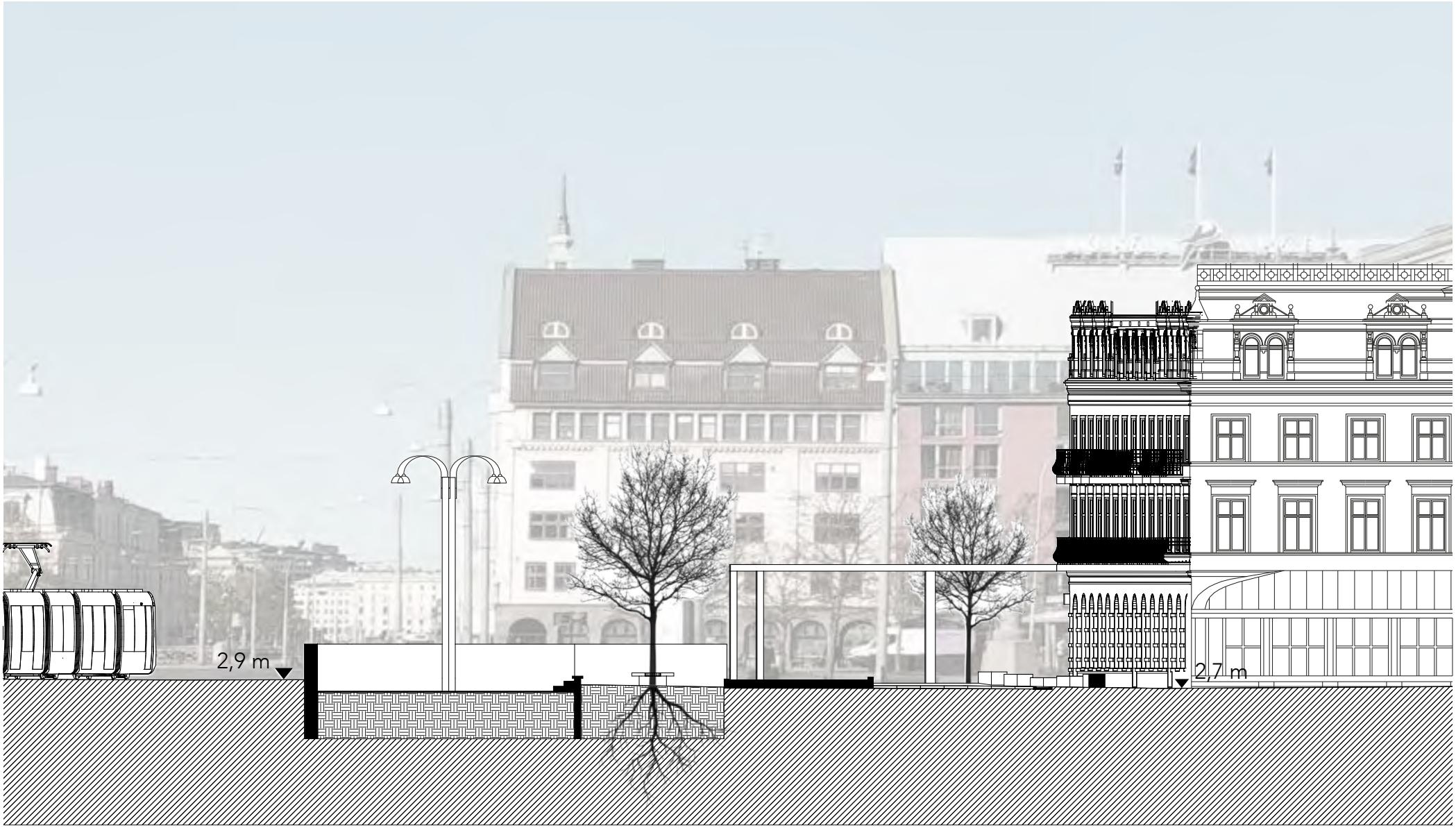


This zoon has a more sophisticated character. The water is also present in another way, not as obvious as in the large staircase/ collector in front of the Post Hotel. Here are two water pounds that also turn into reflective mirrors and increase the facade's expression and reflects the light which makes the area feel alive. In this zone, the scale is a little smaller. The zone also includes more architectural elements that interact with each other and together with the hotel, create their oasis and sanctuary. The garden, in turn, has different functions. It helps to deal with the rainwater, which is one of the desired criteria. It offers the opportunity to stay there and enjoy the greenery and the surroundings. Spices are also grown here as a direct link to the hotel's long-standing restaurant.
Both water ponds, with their layout, articulates the walkway's direction further towards the city.
The water in the added gutter captures the rainwater from the roof and leading it down in the beginning at balcony height then further on down to two water pounds. The moving water indicates that the place is also a passage further towards the center of the city.
When it comes to lighting and security, the new design offers many opportunities to illuminate the place to make it more secure but also beautiful.
The crushed brick gravel closest to the trees alludes to the hotel's Mediterranean riviera expression. The hotel usually has red awnings, which, in contrast to the white plastered facade, create an eye-catching and continental feel.

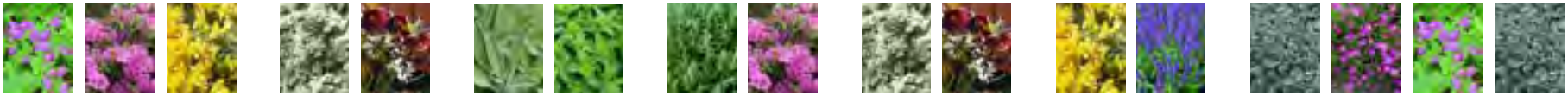




SECTION 1:200

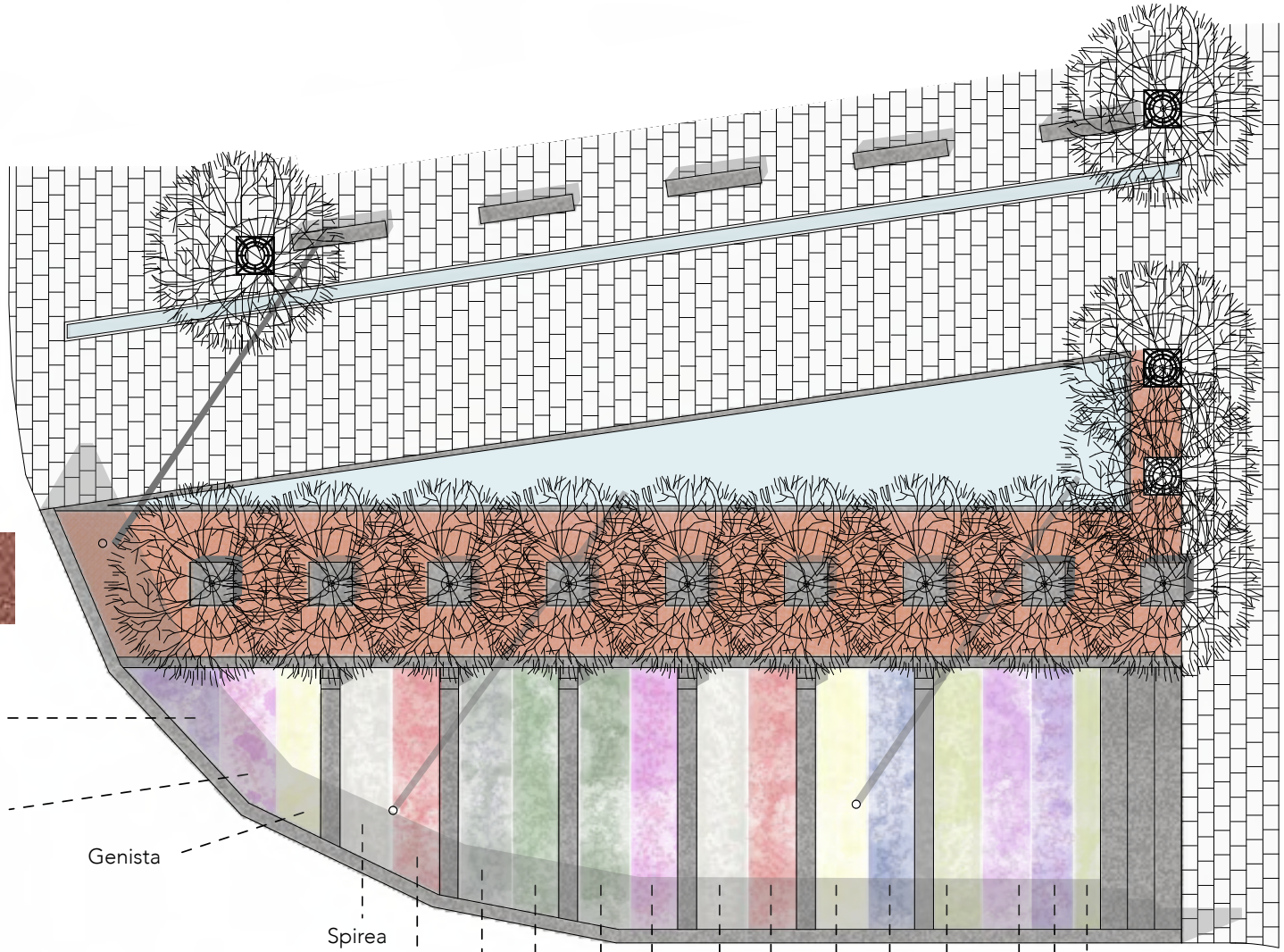


SECTION 1:200



Granite blocks /
urban furniture

Gravel on red crossed
bricks



SCALE 1:250

Geranium macrorrhizum

Azalea

Genista

Spirea arguta

Hellebous

Salvia

Mentha

Thymus

Azalea

Spirea arguta

Hellebous

Genista

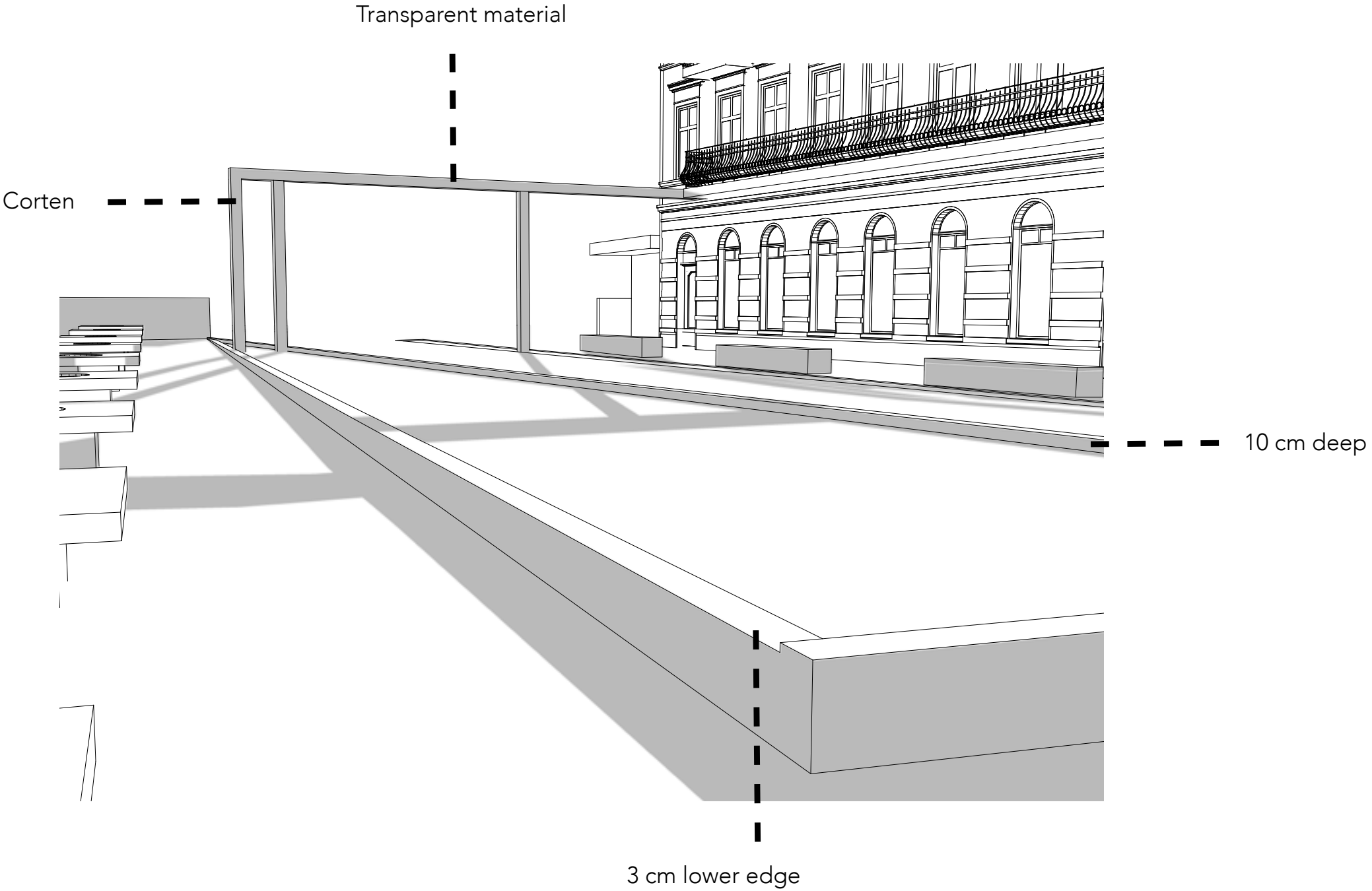
Salvia nemorosa

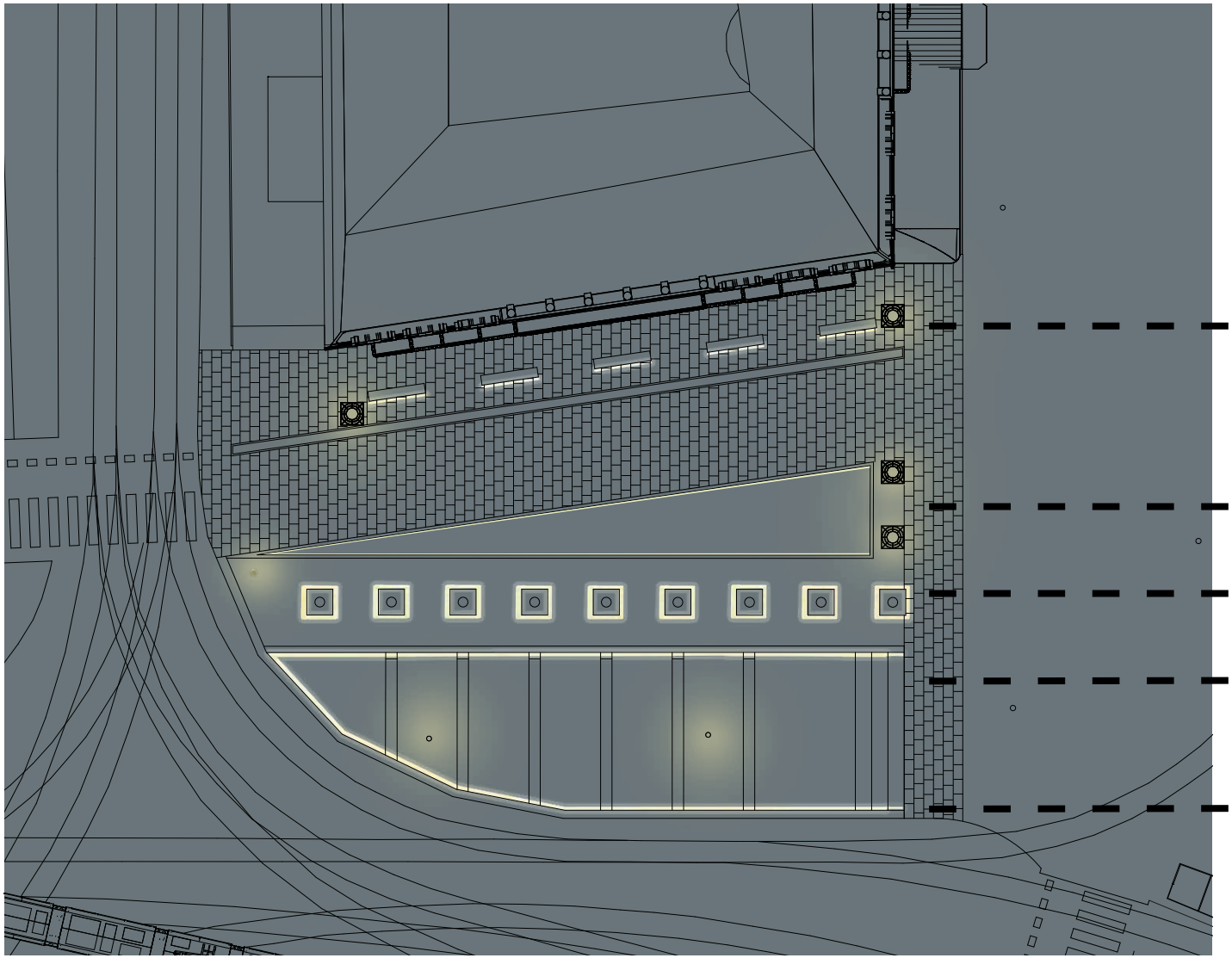
Stachys byzantina

Dianthus deltoides

Geranium macrorrhizum

Stachys byzantina


Transparent material
Corten
10 cm deep
3 cm lower edge



At Drottningtorget you find several larger street lighting posts. These carry one, two, or four lamps. Three of the lighting posts are located within the green area and carry one and two lamps, respectively. The added light sources consist of:

- lighting attached in a groove cut under the stone-seating benches.

- lighting in the ground that glows upwards towards the tree canopy.

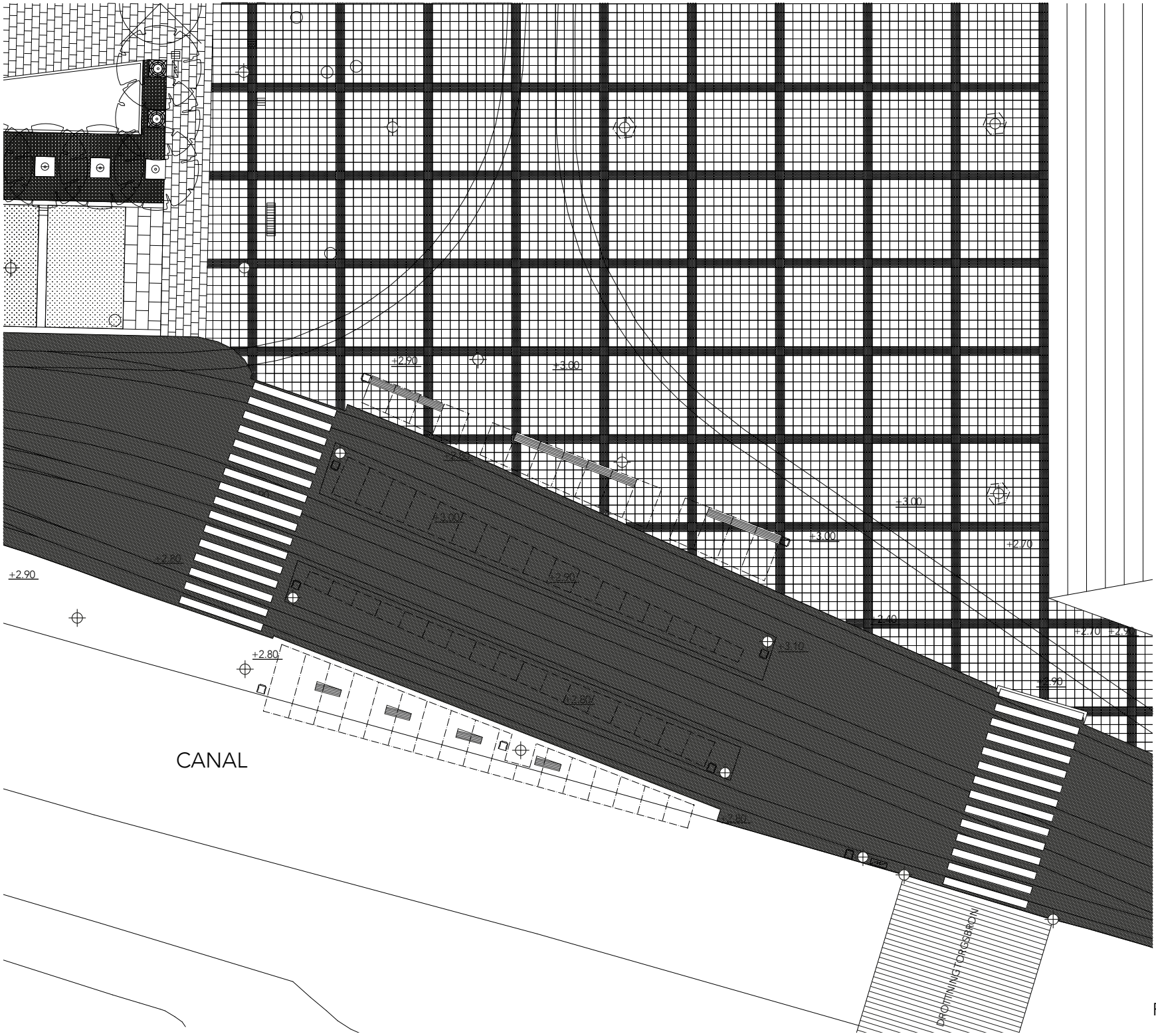
- lighting attached under the seats around the trees.

- lighting attached under protruding stone tiles to the sunken garden.

- lighting attached to the inside of the stone wall at a height of 1.6 meters from the ground.

SCALE 1:400

RAIN SHELTER / TRAM STOP



BUILDING ABOVE GROUND

EXISTING LIGHTING

SEATING MADE IN WOOD
50 X 200 cm

TRASH BOX

ELECTRICITY BOX

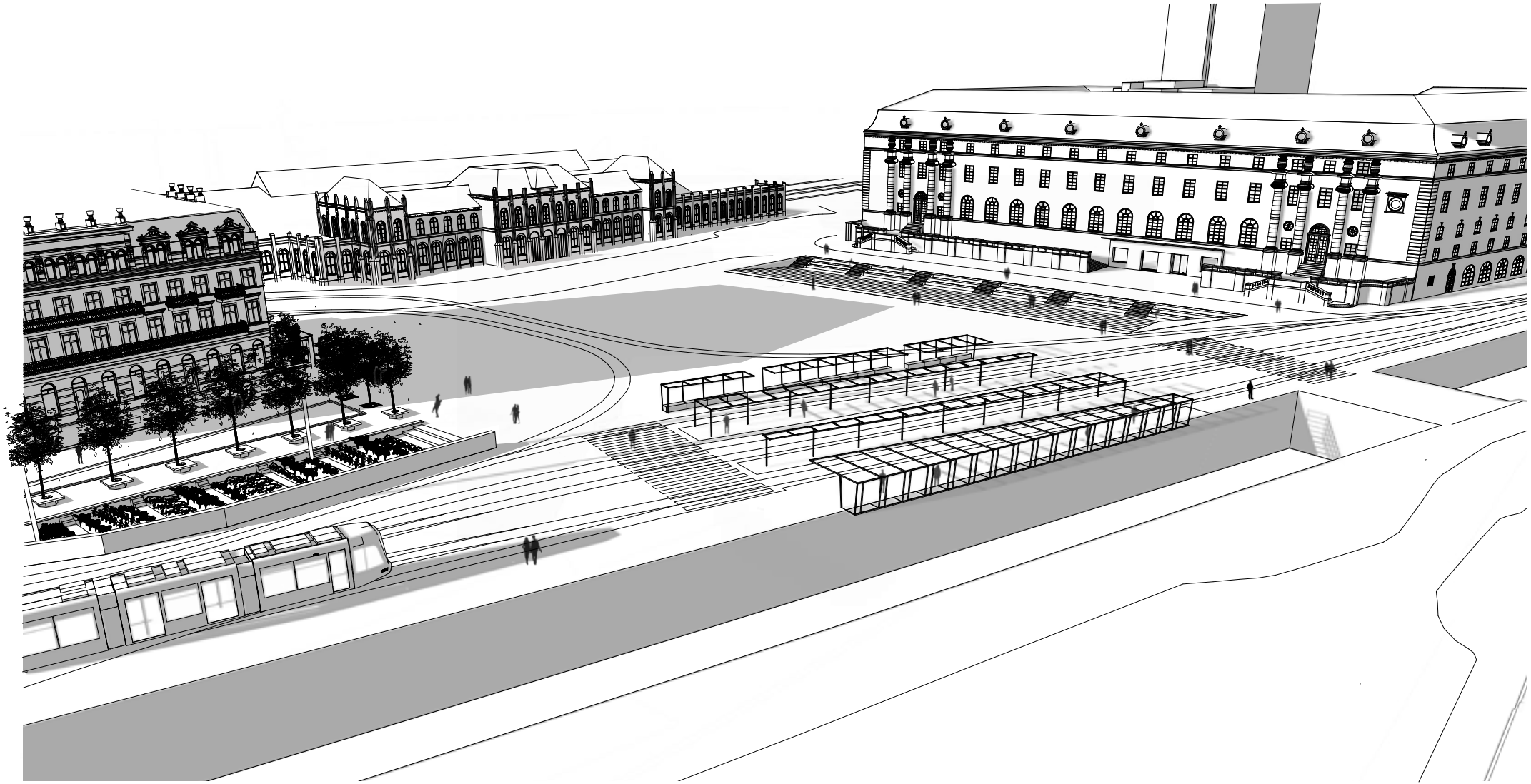
PAVERS 10 X10 cm
MIXED USE AREA

EXISTING WOODEN
DECK BRIDGE

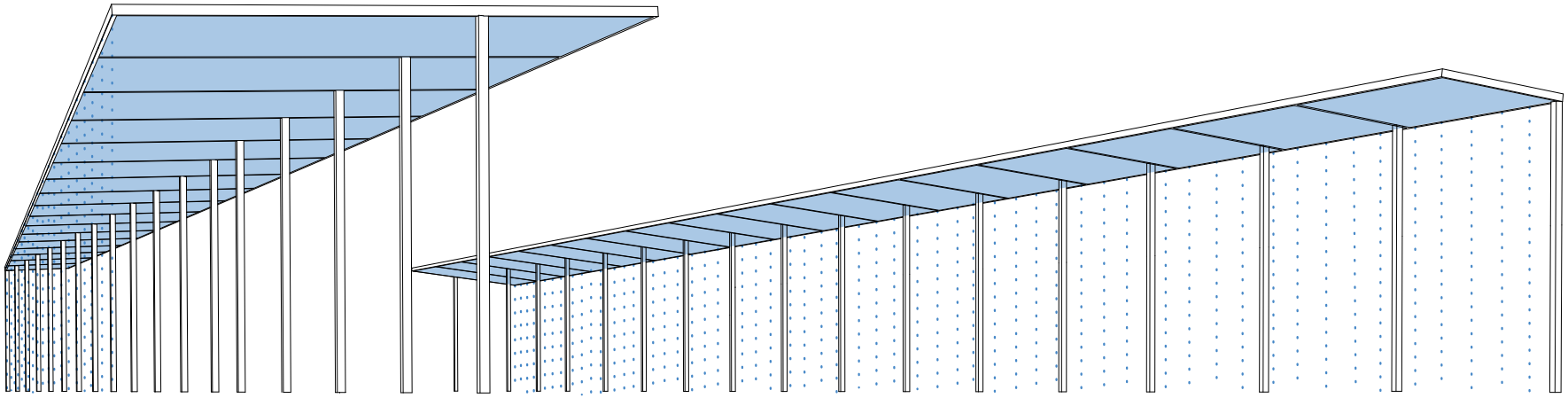
+0.00 PROPOSED GROUND HEIGHT

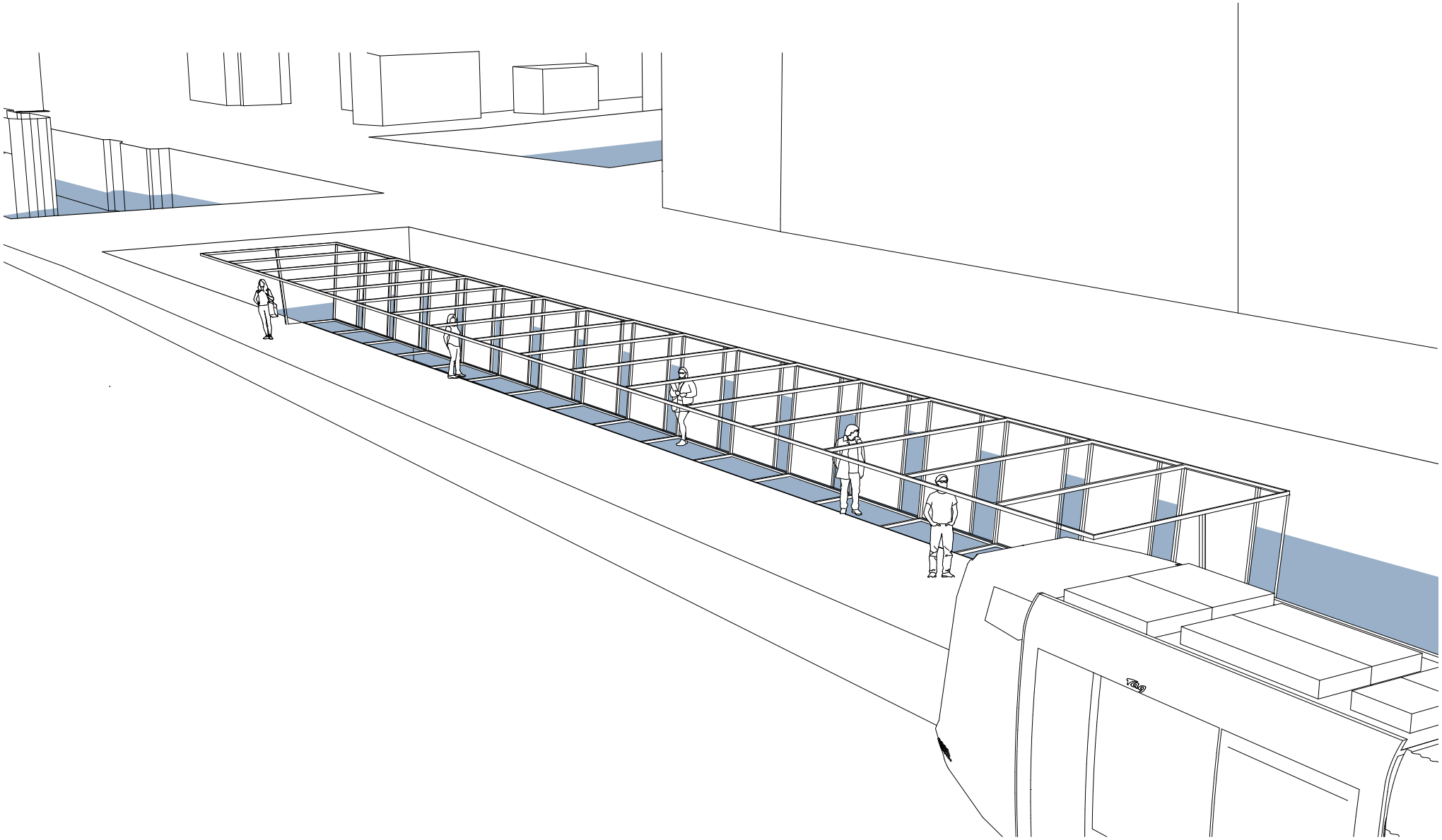
+0.00 EXISTING GROUND HEIGHT

PLAN SCALE 1:400

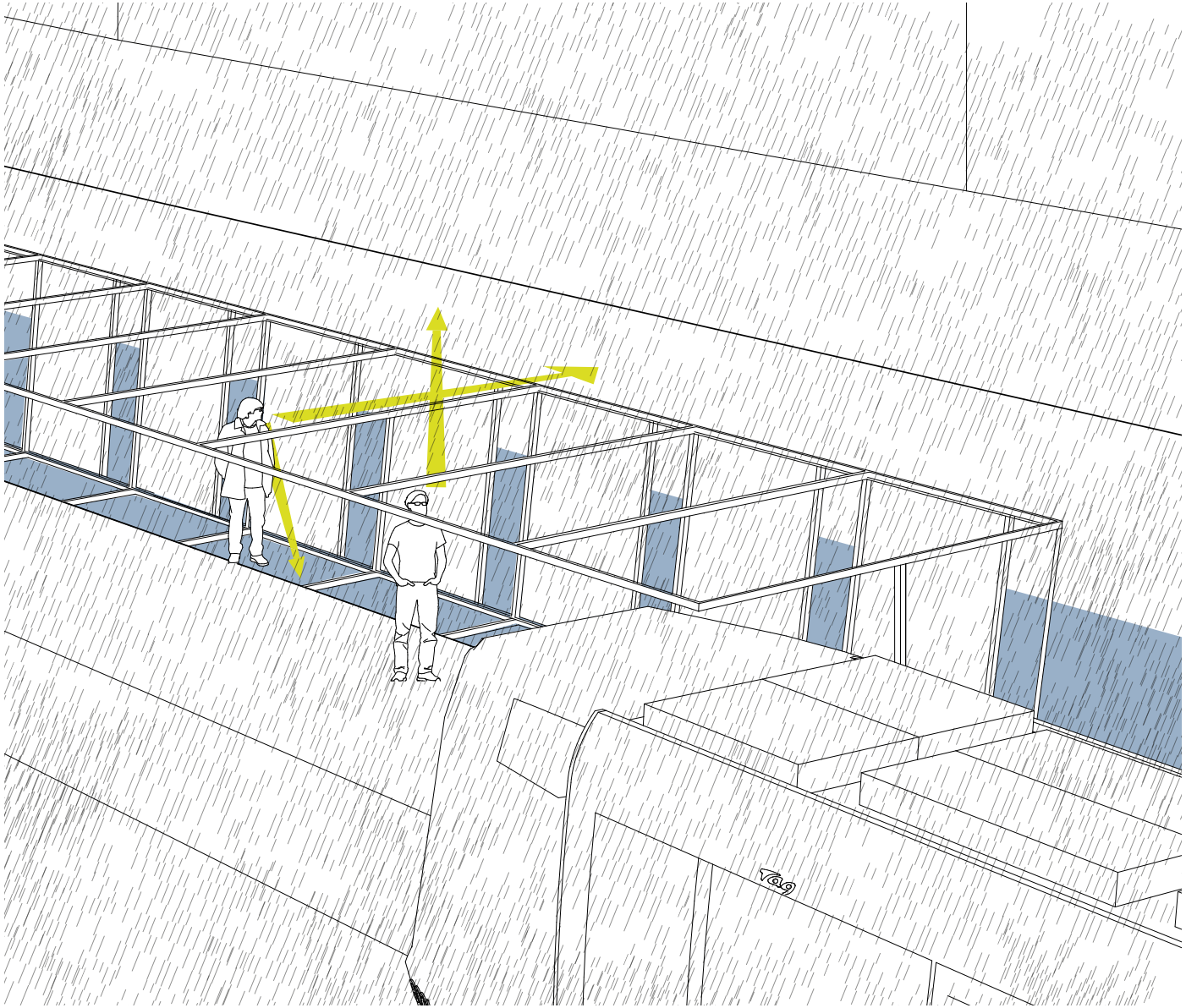


Dottningtorget is currently very much a traffic and communication area. People arriving from other cities are looking for transport vehicles that will take them to their final destinations. Given my previously mentioned desired criteria, both the rain experience is important but also to create a clear square frame. The bus stop are occupying a coherent part of the site. It becomes more obvious where to find a vehicle to continue the journey. The form of the cures corresponds to the elongated design of the train platform shelters and thus convey a connection to the traveling and the train station.
When it is raining, the experience becomes extra tangible in the cure closest to the canal. Here you can experience the rain falling from above on a glass roof while watching the rainfall on the water in the canal under one's feet through a glass floor, as well as through narrower glass sections in the back of the cure straight ahead towards the surroundings behind the canal. The back of the cure is intentionally covered to enhance the experience of the falling rain in the vertical direction. The covered parts are made in aluminium. The material with its silvery tone visually has a connection to the experience of an illuminated rain that glitters and perceives as shiny.
The cure closest to the square center has a continuous seating bench, which in turn alludes to the shape of the stairs and level differences of the other two zones.
All the roofs of the courses are covered in glass parts, like giant umbrellas, even here to make the rain a part of the experience while waiting for a tram or a bus. The glass roofs on the courses in the middle are slightly leaning. The rain is not led down by a gutter, but is allowed to fall freely from one side on the drip edge of the roof. Here, a dripping water wall is created.





CONCEPT DIAGRAM/CANTILEVER FLOOR



CONCEPT DIAGRAM/INCREASE RAIN EXPERIENCE

VISUALIZATION SUNNY DAY

VISUALIZATION EVENING RAIN

CONCLUSION

Architecture is not just construction in general, it is also the composition of the elements and their relationship to each other.

Furthermore, the architecture of a city is not only a set of blocks, a subordination of street routing and a break in symmetry by green parks. The architecture of a city is is also a general impression of beauty.

The city is not only the vision of its wealthy sponsors. It is also the fruit of the expectations and desires of its general population. An architectual shape should subsequently not only include functionality but also a dream, some aspiration, ambition and sometimes an indefinite goal.

The space that ancient geometers called physis and mental space interpenetrate each other. That is why architecture can be the metaphor - the embodiment of ideas.

A square like Drottningtorget has great potential, not the least when it comes to experiencing its atmosphere. The water and the rain, in turn, have a direct and true connection with our senses. It affects us in many ways, regardless of one's cultural or religious background. To create a place for everyone, a place that affect us and shares the experience of its water and rain became an obvious starting point.

Some fundamental criteria provided the outlines of the project. The criteria that belong to the rain experience are hierarchically arranged and desirable in the architectural elements. Equally evaluated are the criteria that belongs to the redesigning of the site. They are also desirable in the architectural element.

These criterias are:
-collecting and delaying water
-experience changes caused by rain

From previous studies, I got a vision of what the rain could contribute to different experiences of a site and how rain transforms different places. Now my vision would take shape at Drottningtorget and lead the work on the site in its specific direction.

The municipality wants to create open and green spaces near Region City, these spaces will be created right next to Drottningtorget. The location is also often the first location to greet an arriving traveler to Gothenburg and because of that it is extra important that it feels open and welcoming.

I also wanted to highlight the cultural values that are present in the square. I wanted to create conscious direction and positions that make us discover the buildings around the square and I also wanted to create places that make us stop and look at the surroundings. To give the opportunity to discover the beauty of all-around one—a quest to create a place where people want to stay and not just pass it.

I have furthermore considered the knowledge that rain can also be a problem.
The questions arise:
Can rainwater be collected in a different way?
Can the gathering water contribute something exciting and new?
Can this place act like places where the tide is actively changing its character from moment to moment?

These thoughts contributed to various experiments with design variations and architectural solutions where rain plays a central role.

New architectural elements would, in turn, fit into the already existing elements and, at the same time, be so evident in themselves that they felt in their own right. A long-lasting architecture strengthens its position by either being classified as art and/or by creating a new whole with the surroundings where people's new memories become part of the place and thereby gives it importance.

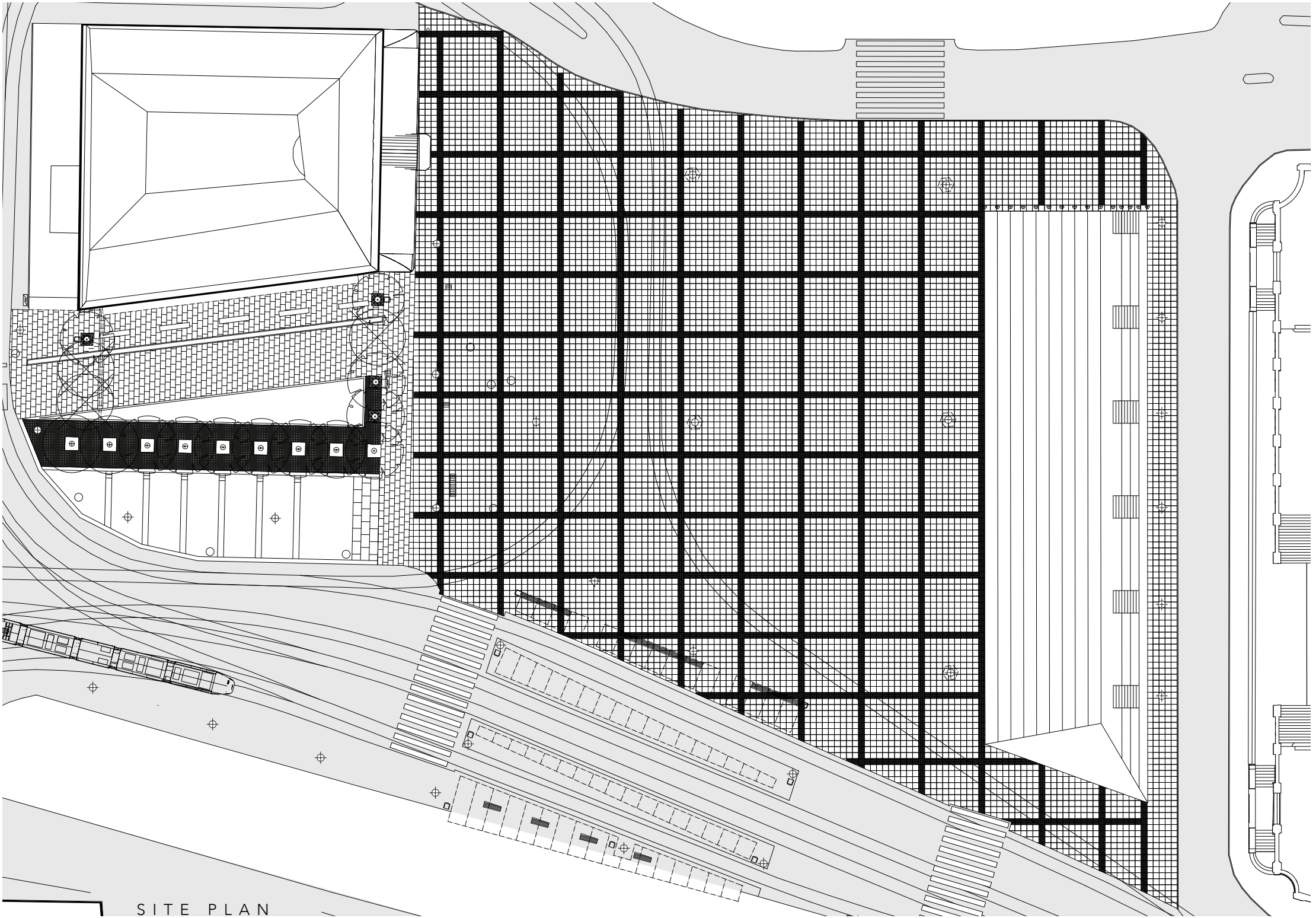
Architecture plays an important role in maintaining continuity and maintaining the tradition of the culture. It is important in maintaining a sense of belonging to a particular place, society or civilization.

Architecture does not prohibit the change of its existing forms, but instead their creative continuation. Innovation or originality does not conflict with creative continuation and dialogue with the existing. Unfortunately, the lack of dialogue with history can lead to randomness, strangeness, or unprettiness.

How can rain gain the experience of architecture and how can architecture gain the experience of rain?

In this project, which was about redesigning Drottningtorget, the experience of rain was a driving force and also a framework. That experience transformed into a way to embark on such a complex project.

In all three zones the rain helps to create a specialized experience and atmosphere. The zones do not need the help of the rain to operate on their own. But the rain unites these three zones and helps create a unified feel that, in turn, ties the place together into a whole.



SITE PLAN

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Figure 1. Water and glass. Photo: Miko Rezler. Unpublished.

Figure 2. Midtown Manhattan Waterfall Glass Tunnel, NYC
By Štěpán Roh - P1000447, CC BY 2.0, Retrived May 24, 2020, from https://commons.wikimedia.org/w/index.php?curid=50296765

Figure 3. Random International, Rain Room, 2012. Retrived April 20, 2020, from https://www.domusweb.it/content/dam/domusweb/en/art/2013/07/8/random_internationalrainroom/rainroomii.jpg.foto.rmedium.jpg

Figure 4. The Liquid Room, 2002, Forth Ports Warehouse. Retrived April 24, 2020, from https://followater.wordpress.com/2014/06/22/the-steady-search-of-water-in-elizabeth-ogilvies-installations/

Figure 5. Niagara Falls with lights. Thanks to Bryan Goff for sharing their work on Unsplash. Retrived May 20, 2020, from https://unsplash.com/photos/G-dfxw3DFYc

Figure 6. Map Gothenburg 1786. Retrived February 7, 2020, from Stadsbyggnadskontoret div. kartor.

Figure 7. Map Gothenburg 1820. Retrived February 7, 2020, from Stadsbyggnadskontoret div. kartor.

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Figure 10. Map Gothenburg 1860. Retrived February 7, 2020, from Stadsbyggnadskontoret div. kartor.

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Figure 14. Flygfoto över Göteborg 1931. Retrived February 13, 2020, from https://digitaltmuseum.se/021018101903/flygfoto-over-goteborg-drottningtorget-med-jarnvagsstationen

Figure 15. Flygfoto över Göteborg 1942. Retrived February 13, 2020, from https://digitaltmuseum.se/021018101903/flygfoto-over-goteborg-drottningtorget-med-jarnvagsstationen

Figure 17. Photo 1995. Retrived February 7, 2020, from Stadsbyggnadskontoret div. kartor.

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Figure 18. Central Station. Photo: Miko Rezler. Unpublished.

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Figure 20. Post Office. Photo: Miko Rezler. Unpublished.

THANKS

KIA BENGTSSON EKSTRÖM

OSCAR CARLSSON

JENS THOMS IVARSSON

WIKTOR KOWALSKI

LOUISE DIDRIKSSON

MARIA WIGANDER

ELISABETH WIGANDER

WACLAW REZLER