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Diplomarbeit

*Sync  
optimisation and modernisation of  
a public space in a panel-district*

ausgeführt zum Zwecke der Erlangung des akademischen Grades  
eines Diplom-Ingenieur unter der Leitung

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e253.2 Abteilung für Wohnbau und Entwerfen

eingereicht an der Technischen Universität Wien  
Fakultät für Architektur und Raumplanung

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Wien, 24.10.2020

## ABSTRACT

One of the largest panel-house districts in Europe is located only 1-hour car ride from Vienna. It is called Petržalka and it is one of the districts of Slovakia's capital, Bratislava.

Number of promising projects are planned for this district in the near future. The city and developers are trying to build new residential buildings and rebuild the areas around them in order to expand the district in size. Unfortunately, none of these projects propose any particular urban concept. They only aim to solve one of the present problems at the time, which is usually providing additional housing capacities in order to answer the exponential increase of residents recorded in the last decades. However, there are other problems such as increasing public traffic resulting in more frequent traffic collapses, insufficient parking capacities, large unused green areas and weak connection with the main centre of Bratislava, which remain unresolved.

This project is proposing a new complex urban concept, which introduces a new tram line connecting the subcentres within the district and also provides direct connection with the main centre of Bratislava. This concept is inspired by the Ring in the centre of Vienna and is also similar to the circular train connection of subcentres in the city of Tokyo.

The second part of this project introduces the idea of synchronisation of the district. Synchronisation is the act of making things happen at the same time which means – when one change occurs, other changes necessarily have to follow in order to let other elements adapt to the new situation. In this particular case, we are talking about urban adaptation of the areas which are

affected by the new tram line. This concept is creating a new tram station and redesigning the surrounding area to fit the needs of the residents in the best possible way and trying to solve the main issues of Petržalka at the same time.

## ABSTRAKT

Eine der größten Plattenbausiedlungen Europas liegt nur eine Autostunde von Wien entfernt. Sie heißt Petržalka und ist einer der Bezirke der slowakischen Hauptstadt Bratislava.

Es gibt zahlreiche vielversprechende Projekte, die für diesen Bezirk in der nahen Zukunft geplant sind. Die Stadt und die Bauunternehmer versuchen, neue Wohngebäude zu bauen und die umliegenden Gebiete wieder aufzubauen, um den Bezirk vor allem zu vergrößern. Leider schlägt keines dieser Projekte ein bestimmtes städtisches Konzept vor. Sie zielen nur darauf ab, jeweils eines der gegenwärtigen Probleme zu lösen. Meistens ist das zusätzliche Wohnkapazitäten zu schaffen, um dem exponentiellen Anstieg der Einwohner in den letzten Jahrzehnten gerecht zu werden. Es gibt jedoch andere Probleme wie die Zunahme des öffentlichen Verkehrs, die zu häufigeren Verkehrseinbrüchen führen, unzureichende Parkkapazitäten, große ungenutzte Grünflächen und eine schwache Verbindung zum Hauptzentrum von Bratislava, die ungelöst bleiben.

Dieses Projekt schlägt ein neues komplexes Stadtkonzept vor, das eine neue Straßenbahnlinie einführt, die sowohl die Unterzentren innerhalb des Bezirks verbindet, als auch eine direkte Verbindung zum Hauptzentrum von Bratislava bietet. Dieses Konzept ist vom Ring im Zentrum von Wien inspiriert und ähnelt auch der kreisförmigen Zugverbindung von Unterzentren in der Stadt Tokio.

Der zweite Teil dieses Projekts stellt die Idee der Synchronisation des Bezirks vor. Synchronisation ist der Vorgang, bei dem Dinge gleichzeitig geschehen, was bedeutet, dass bei einer

Änderung notwendigerweise andere Änderungen folgen müssen, damit sich andere Elemente an die neue Situation anpassen können. In diesem speziellen Fall handelt es sich um eine städtische Anpassung der Gebiete, die von der neuen Straßenbahnlinie betroffen sind. Mit diesem Konzept wird eine neue Straßenbahnhaltestelle geschaffen, die Umgebung neu gestaltet, um den Bedürfnissen der Bewohner bestmöglich gerecht zu werden, und gleichzeitig versucht, die Hauptprobleme von Petržalka zu lösen.

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# I. INTRODUCTION

## SLOVAKIA AFTER WORLD WAR II.

After the World War II., Slovakia was in a quite difficult position becoming part of Czechoslovakia again with its new temporary government. In 1946, the first regular democratic elections after WWII took place. The majority of the seats in Parliament were taken by the Communist Party which took control of police and army soon after that. Later on, the government crisis followed as the police started to abuse its power. Due to this, ministers from non-communist parties resigned from their posts. Even though the president Edvard Beneš was not a communist, being under pressure he chose to continue with the new communist regime instead of calling new elections with temporary government. This has been marked down in the Czechoslovak history as the "February Coup".

For the Czechoslovak Republic this was the beginning of restricted freedom. The principles of democracy were suppressed. People with different political opinions and their family members were persecuted and punished, religion became banned. Demonstrating against the new regime was also prohibited, and even when people tried to stand up against it, things only got violent with arrested citizens often ending up in prisons or labour camps.

Politicians not only restricted people's freedom but also started to take over their property. In March 1948, all factories with more than 50 workers became nationalized by the Government.

In 1960, the country was renamed Czechoslovak Socialist Republic. With the new name came also new constitution which more or less banned all other parties that were non-communist.

Later in 1960s, the Czechoslovak Socialist Republic alongside the rest of the Soviet Union tasted a kind of more liberal interpretation of communism. The reason for that was the death of Josef Stalin. The new era which followed after that is known as the "Prague Spring". Since the then President Antonin Novotny did not agree with this new liberalism, he had to resign under the pressure of the new "liberal" communist parties. This way the communist parties enforced some kind of new democratization program which we recall as "socialism with a human face".

To some extent, they established a democratic freedom, including freedom of press and freedom to travel. This had opened up Czechoslovakia to foreign influences and allowed for new cultural life to flow into the country. For artists and architects in particular, as they now could seek inspiration all around the world. Moreover, it also opened up the possibilities for international competitions, such as the urban design competition for Petržalka.

However, it turned out that the new concept of "socialism with a human face" was not well-received by the central government in Moscow. The leading political role was to remain in the hands of communist parties, which lead to armies from four Warsaw Pact countries invading Czechoslovakia in fear of revolution in August 1968. After taking control of all important strategic parts of the land, "normalization" was declared, leading the country back to oppressing all democratic freedoms again. The enemies of the regime were once again persecuted and all the "western influence", such as American clothes and music for example, were banned.

The worsening economic situation in the Soviet Union in the second half of the 80s (also known as "The Era of Stagnation") weakened the regime and gave the citizens of Czechoslovakia an opportunity to stand up against it once again. In November 1989, massive protests calling for the communist government to resign succeeded.

After the events of November 1989 – also known as the "Velvet Revolution" – the people of Czechoslovakia started to build a new democratic state. In 1990, the first free elections took place.

In January 1993, against the will of the people, the Czechoslovak Republic split into two - Slovak Republic and Czech Republic.

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<https://profil.kultury.sk/en/post-war-slovakia-1945-1989/> , 14.4.2020

[https://web.archive.org/web/20070827101214/http://www.snp.sk/index\\_eng.php](https://web.archive.org/web/20070827101214/http://www.snp.sk/index_eng.php) , 14.4.2020

<https://oskole.detiamy.sk/clanok/obnovenie-csr-po-druhej-svetovej-vojne> , 15.4.2020

[https://uniba.sk/detail-aktuality/browse/3/back\\_to\\_page/aktuality-1/article/ako-vyzeralo-slovensko-v-maji-1945/](https://uniba.sk/detail-aktuality/browse/3/back_to_page/aktuality-1/article/ako-vyzeralo-slovensko-v-maji-1945/) , 15.4.2020

## BRATISLAVA AFTER WORLD WAR II.

Bratislava, today the capital of the Slovak Republic, has a very colourful history during which it has been changing constantly. One of the most significant changes in its recent history happened in the period after the WWII. At the end of the war, Bratislava was in shortage of housing. The tendency for a large part of the country's population was to move to bigger cities, such as Bratislava. However, many buildings in the city had been destroyed during the war and there were only few apartments available. On top of that, these apartments were insufficient in quality. Bratislava needed an inexpensive solution as quickly as possible which led to the government supporting the projects introducing the idea of prefabrication, believing it was the answer.

In 1950s, the decision concerning the new apartment planning standards was made, being followed by the start of prefabrication development. The verdict was to build these new prefabricated houses in settlements in Bratislava. The result of this was mostly still a combination of traditional and prefabricated houses. What the urban planning intended was basically a row of buildings surrounded by a quiet green area inside of the settlement. It was supposed to offer the necessary amenities such as shops and services, all in close proximity to a busy road. "Februarka" settlement is one of the best examples of these successful Slovak housing solutions.

In 1960s, instead of a new urban settlements planning, Slovak architects aimed to strengthen the position of modernism, as the regime was calling for national integrity, wanting to present it through architecture. It was thanks to the newly founded Department of Architecture and Civil Engineering at the Slovak Technical University in Bratislava that a new generation of young Slovak architects emerged under the tutorship of Emil Belluš and Vladimír Karfík. Inspired by Le Corbusier, they were developing new forms

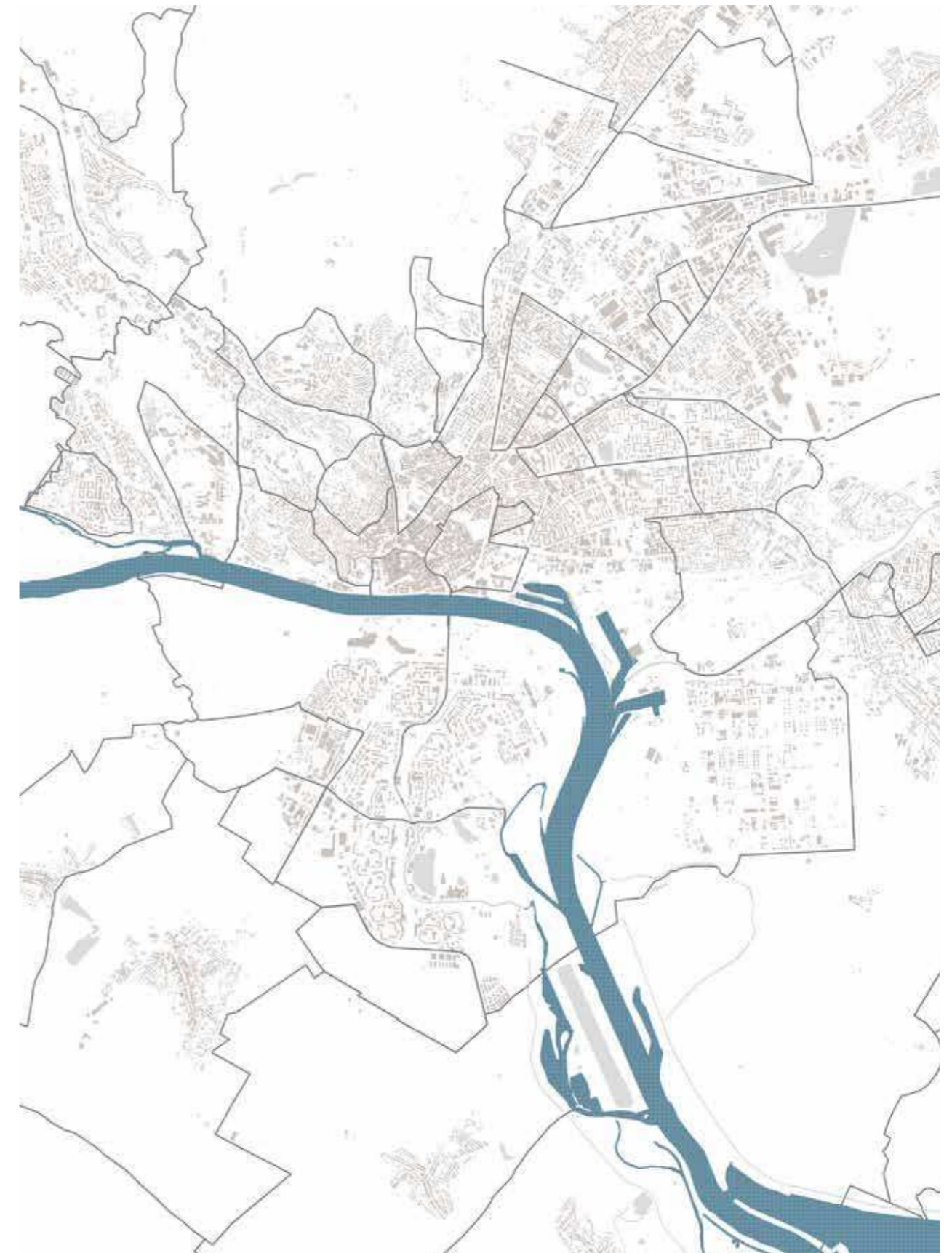
using local materials, representing strong brutalism.

Until the 1970s, the housing development in Bratislava intensified. Due to a rapid increase in the number of residents, the need for housing units expanded over the outside of the previous settlement boundaries, namely to the east, northeast and west of the city. The standard settlement size in this phase was between 5.000 and 15.000 apartments. All this was possible thanks to the development of the prefabrication of concrete slabs.

After some time, these houses started to represent the new urban settlement planning with first open-space courtyards forming inside of the settlements. Public facilities were no longer at the periphery of the settlements, but planned centrally. As of this point, the new "conception of housing development" was formed and it determined the settlement forms for years to follow, including also the idea of expanding the borders of Bratislava to the south.

To the south beyond the city borders, a village named Petržalka was situated. This is where a new significantly large settlement was about to be built. Although an international competition was held, most of the ideas were not in line with the mindset of the "normalization" regime. Although the settlement was built at high speed, the result was more or less an image of the communist regime.

The construction of the settlements continued until November 1989. After the Velvet Revolution, the apartment buildings became a symbol of communism and all further works were stopped. During the years after that, the city gave more of its time to renovation of the old than to building new. In 2015, the city decided to start building new districts in Bratislava again. However, more in the international form of shopping centers and skyscrapers.



Bratislava - capital city of Slovakia

<https://www.aktuality.sk/clanok/275391/stara-bratislava-po-2-svetovej-vojne-na-fotografiach/>, 16.4.2020

<http://www.historickarevue.com/clanok/oslobodenie-bratislavy>, 16.4.2020

<https://bratislava-city.sk/bratislava-world-war-2/> 16.4.2020



# ICONIC SLOVAK ARCHITECTURE IN BRATISLAVA

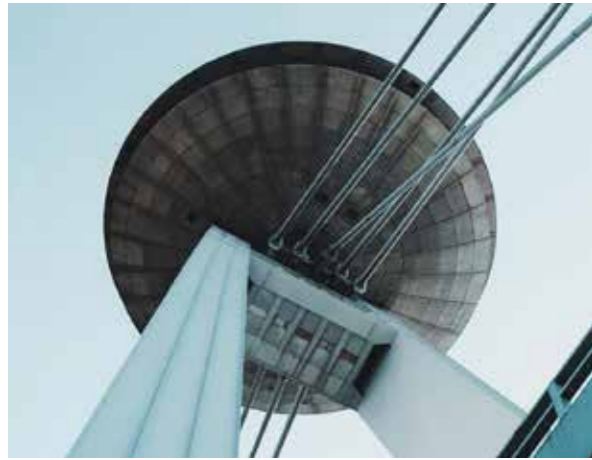


Fig.1  
**The Bridge of Slovak National Uprising, Bratislava**  
 Most SNP + UFO  
 Jozef Lacko, Ladislav Kušnír, Ivan Slameň, 1968-1973



Fig.2  
**Slovak Broadcasting Building, Bratislava**  
 Slovenský Rozhlas  
 Štefan Svetko, Štefan Ďurkovič, Barnabáš Kissling 1962 - 1985



Fig.7  
**Slovak National Archives, Bratislava**  
 Národný archív  
 Vladimír Dedeček, 1970 - 1983



Fig.8  
**Slovak National Gallery, Bratislava**  
 Národná galéria  
 Vladimír Dedeček, 1967 - 1979



Fig.3  
**Trade Union House, Bratislava**  
 Istropolis  
 Ferdinand Konček, Ilja Skoček, Lubomír Tittl, 1956-1981



Fig.4  
**Shopping Mall Prior, Bratislava**  
 Kamenné Námestie + Hotel Kyjev  
 Ivan Matúšik, 1961 - 1973



Fig.9  
**Hotel CKM Sputnik, Bratislava**  
 Hotel Garni Junior  
 Dušan Bystrický, 1976 - 1982



Fig.10  
**Crematory, Bratislava**  
 Krematórium  
 Ferdinand Milučký, 1962 - 1967



Fig.5  
**Market Hall, Bratislava**  
 Tržnica  
 Ivan Matúšik, 1975-1983



Fig.6  
**TV Tower, Bratislava**  
 Televízna stanica na Kamzíku  
 Stanislav Májek, Jakub Tomášak, Juraj Kozák,  
 Milan Jurica, Ján Privitzer, 1975



Fig.11  
**Student Residence Hviezda, Bratislava**  
 Kukurica  
 Ján Strcula, Cyril Sirotný, 1973 - 1978



Fig.12  
**Incheba Expo Arena, Bratislava**  
 Vladimír Dedeček, 1974 - 1995

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## THE PANEL CONSTRUCTION PHENOMENON IN EUROPE

Panel construction is one of the most noticeable phenomena of the 20th century. Although the mind slips automatically to housing in the cities of the former Eastern Bloc where the construction of the prefabricated buildings took place on a massive scale, it actually all started elsewhere.

The very first prefabricated houses were built shortly after the World War I in the Netherlands. From 1926 to 1930, the first two- and three-storey panel houses were built at the Splaneman housing estate in the Lichtenberg district of Berlin. With 138 apartments, it was the first German panel housing estate. However, part of the houses was destroyed during World War II. In France, panel construction began in 1934 in Drancy, near Paris. Panel houses were also built in Sweden and Finland.

Construction of prefabricated houses in Western Europe continued after World War II. However, the prefabricated housing estates gradually became the poorest settlements with the housing estates starting to resemble to ghettos over the time. A typical example is the Pruitt - Igoe housing estate in St. Petersburg. This part of city's problem was poverty, crime and vandalism, which led to people's reluctance to move into this prefabricated housing estate. Various attempts to revitalize it have proved ineffective and unsuccessful. As a result, the housing estate was completely emptied by 1972. Similar problems also occurred in the suburbs of Paris.

Prefabricated housing estates were also built in Austria (Vienna) and Sweden, where around 650,000 predominantly prefabricated houses were built under the Miljonprogrammet program in the 1960s and 1970s. In Western Europe, however, the construction of prefabricated blocks of flats has nowhere reached the same extent as in the Eastern Bloc, where prefabricated buildings in cities had become the dominant type of buildings. In the mid-1970s, the construction of prefabricated houses was abandoned in Western Europe for various reasons.

In Czechoslovakia, the first experimental panel houses were built in the early 1940s in Zlín by Baťa's construction office. Appropriate conditions for mass housing were created after the start of communist regime in 1948. The property and land were taken by the government and centralized economy was established. State project institutes (e.g. Stavoprojekt) were established and kept designing housing estates, individual building systems, their regional variants and floor plans of flats until the Velvet Revolution. The state and its authorities became the only architect, urban planner and builder at the same time. The ideal conditions for the smooth development of mass housing construction.

The era of prefabs has not come to Slovakia until the late 1950s. The idea of quality housing for all has become popular, especially in a country with a communist government. The statistics were clear: in 1945, there were around 550,000 flats in Slovakia. More than 90% of them were in family houses. Only 7% had a water main, 3.9% had a sewer and only 0.4% had central heating. One can say that the central heating, hot water and flush toilet were basically unknown. The shift from the latrine and the charcoal furnace to the warm radiator was a major civilization leap in the housing sector. The first block of flats in Slovakia called "Montodom" was built in Bratislava on Kmeťovo Square in autumn 1955. It stands until today and has become a technical monument. The first panel housing estate at the turn of the 50s and 60s was "Februarka" in Bratislava near Račianske Mýto. At the beginning of the 1960s, the construction of prefabricated housing estates started inexorably, which significantly changed the overall nature, population structure and character of each major city in Slovakia.



Fig.13  
Frontal view of the facade  
Hálová Street

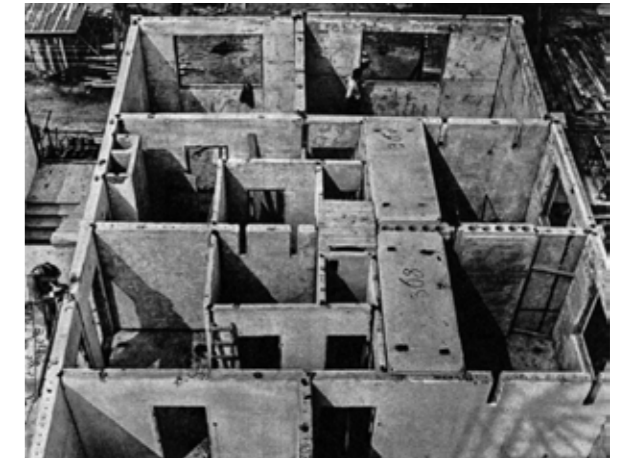


Fig.14  
View without the roof



Fig.15  
Construction site  
Fedinova street



Fig.16  
Construction site  
Petržalka



Fig.17  
Building panel with window



Fig.18  
Construction workers lifting  
a concrete panel

Mass panel construction in Slovakia took quite the opposite course than the one in the Western Europe. Panels spawned panels, prefabs sprang up like mushrooms, but civic amenities lagged. Roads, sidewalks and shops were completed long after the flats. However, financial and technological conditions as well as time did not allow architects to experiment too much. The main requirement was to ensure a basic standard for housing and nothing more. In 1960s, while finishing the planning of the housing estate Ružinov in Bratislava, the architects were given a very straightforward task - to simplify and speed up the entire housing development process.

This requirement was to apply on every step of the process from the production of panels, sanitary units and other necessary construction parts, through their transport to the construction site, up to the final assembly of the prefabs. Every initiative or effort to change or improve made by the architects was not seen as welcome. Everything required the approval of the central authorities, and it was often seen as an unwanted detour from the planned. Although the whole system worked well in accomplishing the given purpose, it was set up to be rather unable to respond flexibly to any changes. Soon afterwards, all of this gradually started reflecting in the increasingly deepening economic problems of the communist regime.

At first glance, all prefabs might look very much alike. During the period of prefabricated construction which lasted approximately 35 years, building systems together with the appearance of prefabs and floor plans of apartments have evolved. During this period, around 20 building systems were built in Slovakia.

After the fall of the Communist regime, great criticism was poured on the panel constructions. Objectively, we can say that much of it can be considered as justified. Many mistakes had been made, both for objective (limited financial, technical and technological options) and subjective reasons (slackness, poor quality work). There are already many possibilities to remedy the biggest shortcomings. The interior heats up on a large scale, windows, elevators, old wirings are being replaced. The lifetime of prefabricated buildings is estimated at 70 to 90 years.

According to the Statistical Office, almost every second Slovak lives in a panel house. In cities like Bratislava, Košice, these values range up to 60 -70%. It will therefore be very interesting to see how the story of prefabs will continue to evolve.



Fig.19  
Parking lot



Fig.20  
Quiet city life  
Bulíkova street



Fig.21  
Market place



Fig.22  
View from a roof



Fig.23  
Facade



Fig.24  
Leftover materials as playground for children

<https://www.akebyty.sk/clanok/Co-je-to-panelak> , 20.5.2020  
<http://panelaky.info/g40/> , 20.5.2020  
<https://www.trend.sk/spravy/najlepsie-sidlisko-to-nbsp-co-nepostavili> , 20.5.2020  
<http://www.tresbohemes.com/2018/03/panelak-housing-in-the-czech-republic-and-slovakia/> , 25.5.2020

## BRIEF HISTORY OF A LARGE VILLAGE CALLED PETRŽALKA

The area which nowadays accommodates the largest panel settlement in Central Europe, had been modified by the Danube river and its countless small rivers for centuries. As a consequence, its size and form has been constantly changing. Because of that, this area did not get populated until relatively late. The first mention of the area dates back to 1225, being referred to as a settlement named Flozendorf. In 1775, the first map of the area was drawn with Flozendorf on west side, a village called Engerau in the middle and two small settlements Aulissel and Ovsiste on the east side. These villages later became the foundation of Petržalka.

A very important milestone for the development of Petržalka was the construction of a steel bridge across Danube in 1891, connecting the area with the city of Bratislava. The other crucial milestone was the first railway connection to Vienna built in 1914.

After the World War I, Petržalka started growing rapidly with the number of residents having trebled in 1920-1930 and Petržalka becoming the largest village in Slovakia. After being enemy-held by Nazi Germany during the World War II, Petržalka became part of Bratislava in 1946.

In 1966, an international competition for solving the area of Petržalka took place, during which it was decided to completely demolish the original houses and to build new modern neighbourhood of Bratislava. These plans got never realized, as Slovakia got once again enemy-held by Soviet Union in 1968. After 1973, the construction of the "New Petržalka" started. The original settlement was replaced by approximately 30 km<sup>2</sup> of new roads and prefab buildings, in which nowadays live around 115 000 residents.



Fig.25  
Village Petržalka before the reconstruction  
1970



Fig.26  
Swimming pool - Matadorka  
1969

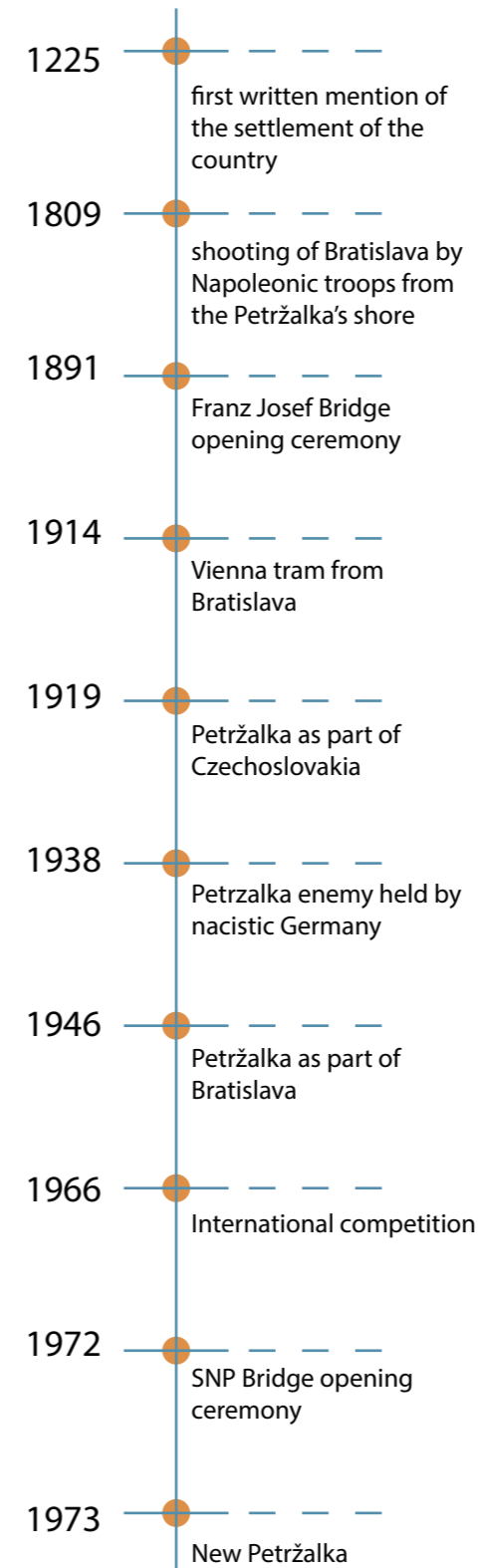


Fig.27  
View from Old Town at Old Petržalka  
1950



Fig.28  
View at Old Petržalka



Fig.29  
Industry hall in Old Petržalka

<https://bratislavaden.sk/foto-ako-vyzeralo-kupalisko-matadorka-ci-ovsiste-stare-fotky-petrzalky-vas-vratia-v-case/>, 1.6.2020  
<https://bratislava.sme.sk/c/5735775/ked-petrzalka-bola-ako-dedina.html>, 1.6.2020

# INTERNATIONAL URBANISTIC COMPETITION BRATISLAVA - PETRŽALKA

In 1966, the international urbanistic competition took place. It was an extraordinary competition in an international context as there were many concepts from different atelier studios and architects around the world - specifically around 310 participants from 28 countries. The jury was also consisting from international guests, such as experts from France, England, Russia and Yugoslavia. The chairman of the committee was Arthur Ling from Great Britain and the vice-chairman was Stefan Svetko, the deputy chief architect of the city of Bratislava. Eighteen projects made it to the final round but there was no actual winner. Since none of the concepts could effectively solve this uneasy task, the jury granted five 3rd awards.

On the other hand, this competition brought many interesting ideas and concepts on the table. Many of them then got recommended by the jury to be developed more in form of seminars and discussions with other experts. In the end, there was supposed to be a new district accommodating around 100,000 citizens and providing them with complex amenities, while maintaining the green areas. The new area was supposed to offer more than just apartments. The goal was to attract people searching for

a high-quality living area providing various amenities.

All of these plans got dismissed during the occupation in 1968 and the following years of normalization. The firm Stavoprojekt with its head-architects Stanislav Talaš and Jozef Chovanec took over the new project of Petržalka. Both were trying to use the international competition as a source of information and tried to avoid the use of prefabricated materials and standardization. However, it was necessary to keep building in a fast and cheap way, even if the quality suffered. And so the building process started in 1973.



Fig.30  
Proposal Number 6

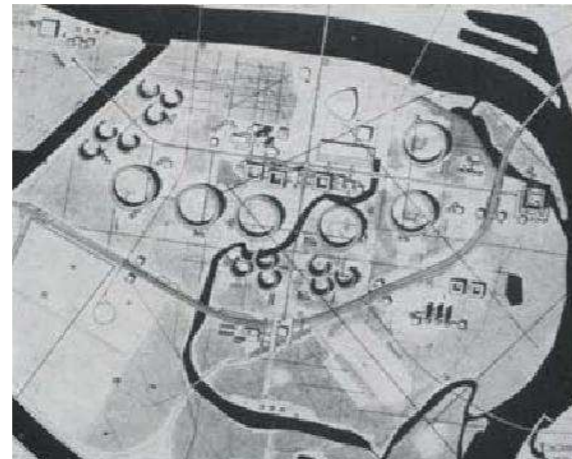


Fig.32  
Proposal Number 79

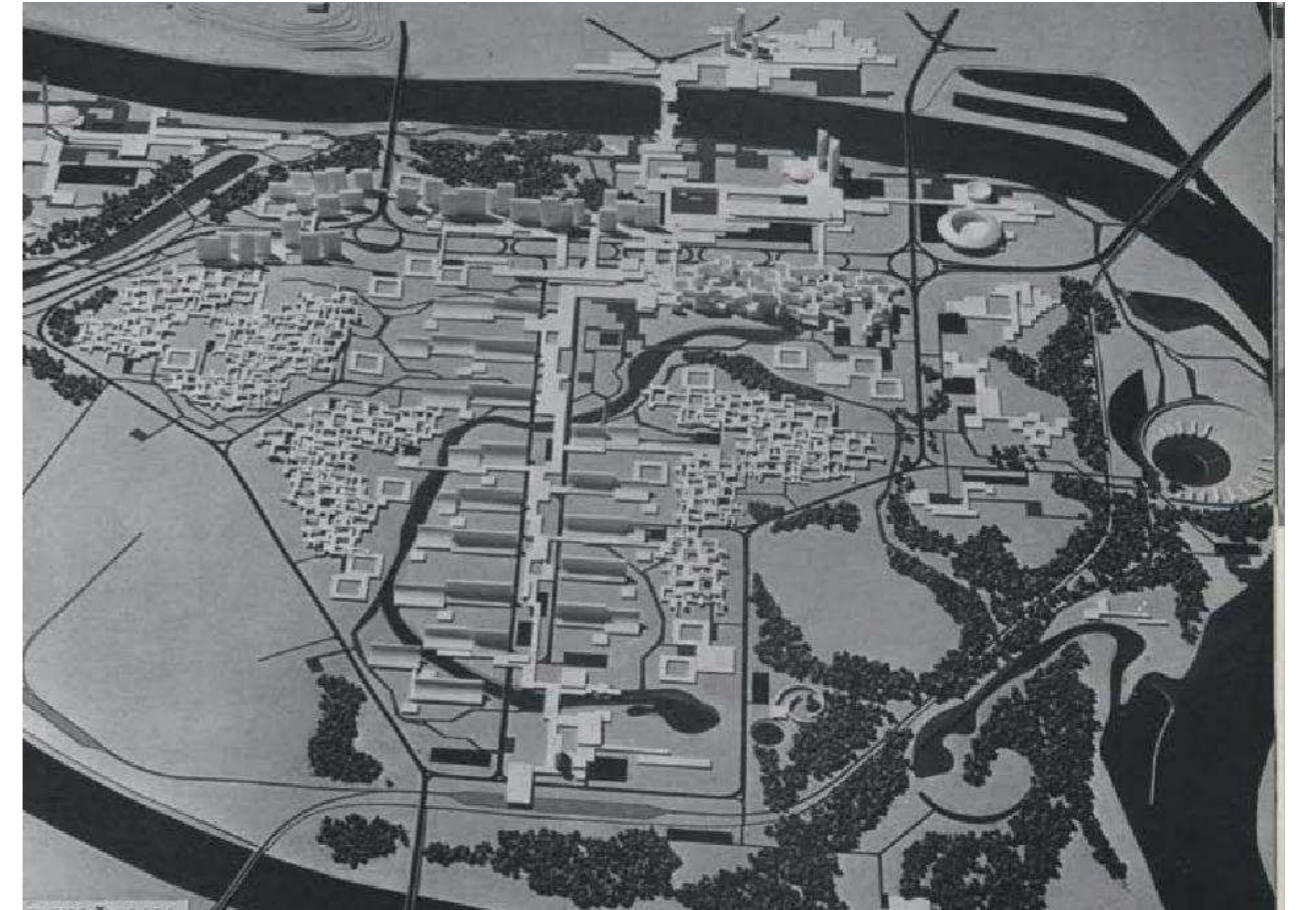


Fig.33  
Proposal Number 7

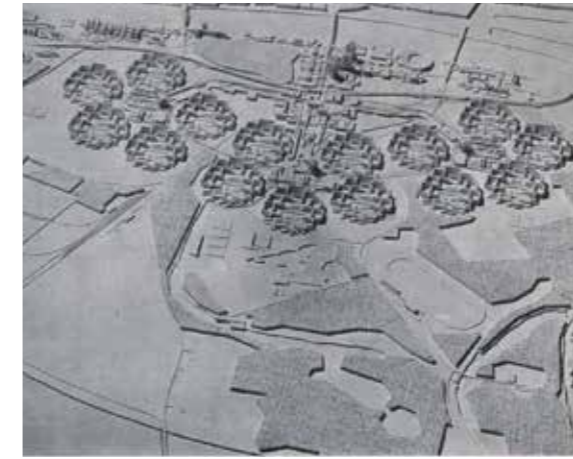


Fig.34  
Proposal Number 74



Fig.35  
Proposal Number 74 zoom in



Fig.31  
Proposal Number 30

<http://www.konduktor.sk/vystavba/urbsutaz.html>, 1.6.2020

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- The third prize was awarded to the following teams ex aequo: T.Alexy, J.Kavan, F.Trnkus (Slovakia), C.Typovsky, J.Novacek, V.Adamec (Czech), S.Vamene, J.Ogura, V.Okuma, M.Miyakawa, H.Taginuchi, J.Onuma, O.Myojyo, T.Hongo (Japan), G.V.Russel, A.Iemric (USA), R.Reiner, A. Arzberger, H.Karer (Austria)

# PETRŽALKA AFTER THE COMPETITION IN 1973

Construction of the settlement radically changed the character of the original village of Petržalka and the riparian forests of the right bank of the Danube into a highly urbanised environment. Its main feature is a complex, open construction of widely spreading blocks of houses and streets outlined by high apartment slabs, completed by freestanding blocks. The settlement was constructed in three sectors, which in turn are divided into smaller residential units. Each unit has its own nursery and primary school, medical clinic, shopping centre and cultural facilities.

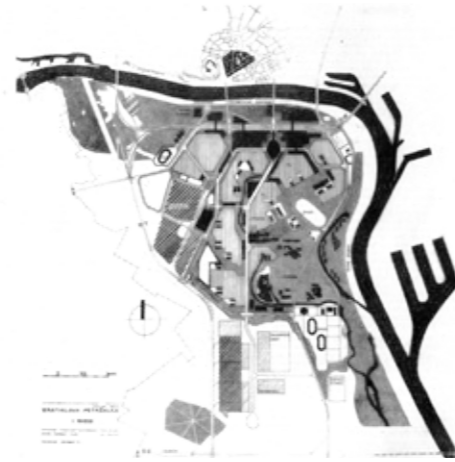


Fig.37  
Complex proposal of Petržalka

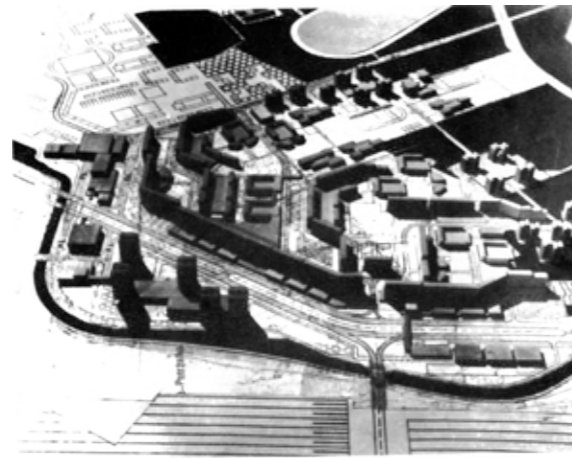


Fig.38  
Model of proposed project

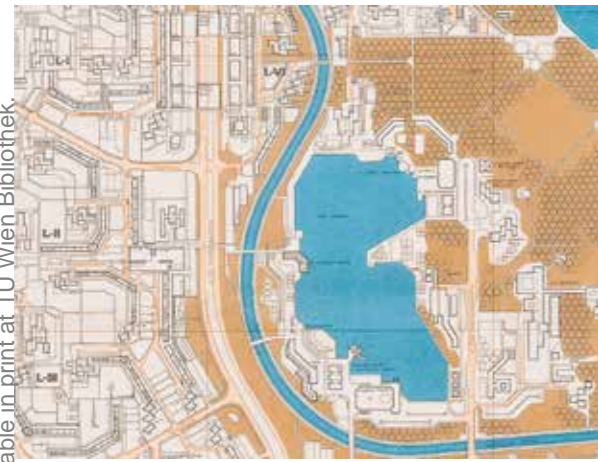


Fig.36  
Original map of Petržalka  
Area around Velký Draždiak  
recolorized-

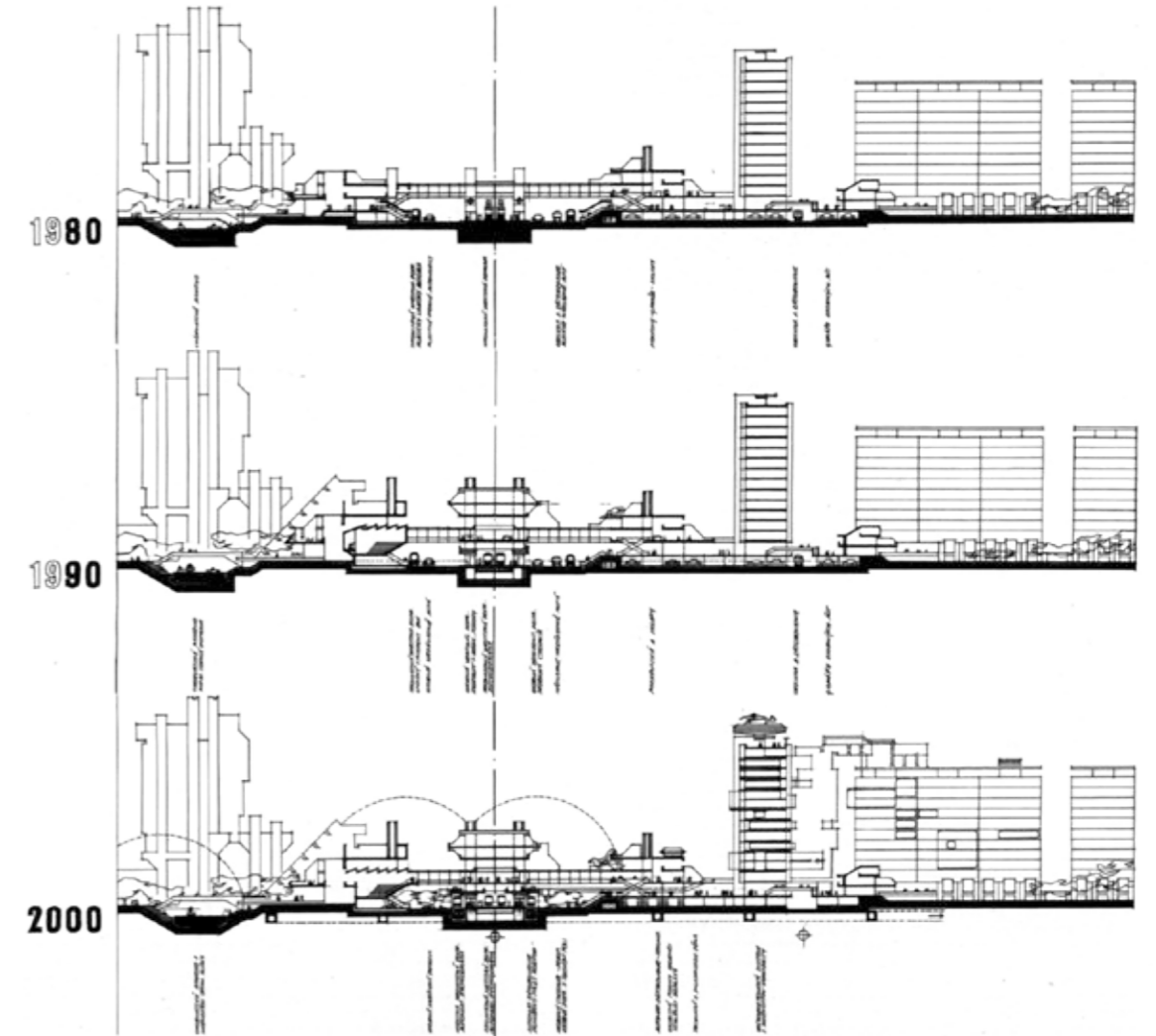


Fig.39  
Section trough proposed centre  
of Petržalka with continual phases



Fig.40  
Section trough panel building

<https://bratislavaden.sk/foto-ako-vyzeralo-kupalisko-matadorka-ci-ovsiste-stare-fotky-petrzalky-vas-vratia-v-case/>, 1.6.2020  
<https://bratislava.sme.sk/c/5735775/ked-petrzalka-bola-ako-dedina.html>, 1.6.2020

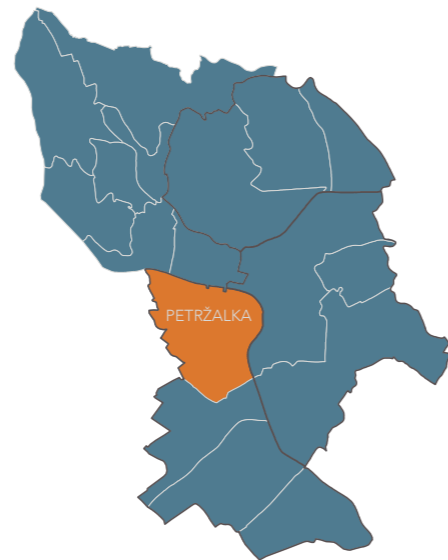
## II. ANALYSIS PETRŽALKA

## PETRŽALKA TODAY

Petržalka was built as a housing estate, and therefore does not have a clearly defined centre. The centre of Petržalka as a city district can be considered, for example, Námestie hraničiarov, but only because of its location in the geographical centre of Petržalka. In the recent years however, intensive construction has been underway in Petržalka, the aim of which is to transform it into a full-fledged city. An example is the Petržalská promenáda, a sidewalk for pedestrians and cyclists, connecting the left-bank centre of Bratislava from The Bridge of Slovak National Uprising (Most SNP) with the Petržalka international railway station.

The area around the Chorvátske rameno (an arm of the Danube) also serves as a central promenade, around which a sidewalk has been built along its entire length, serving both pedestrians and cyclists as well as skaters.

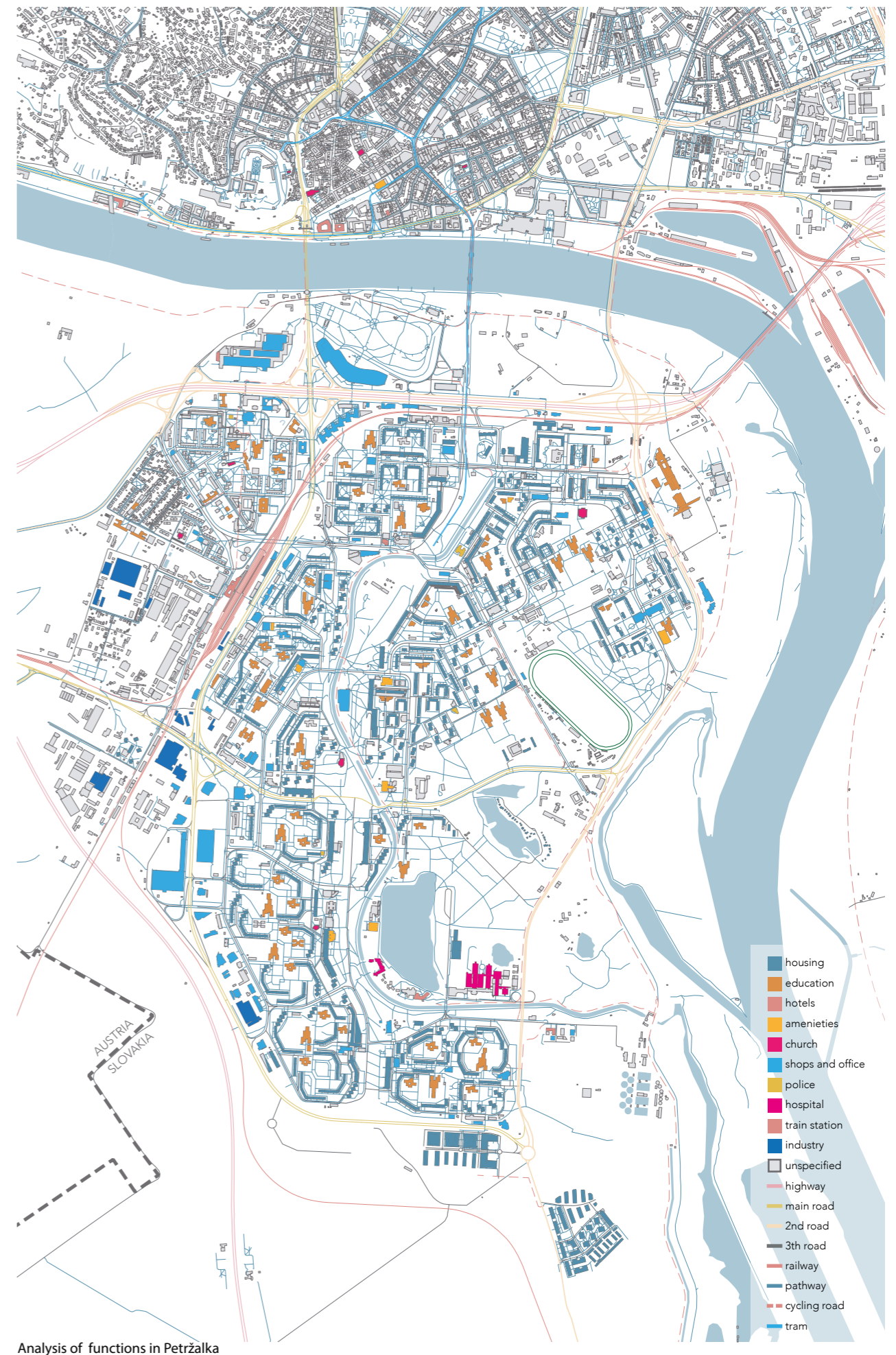
The northern part of Petržalka belongs to the planned project of the city centre of Bratislava, which also includes the Danube embankment on its left bank. In this part of Petržalka, intensive construction of new modern buildings is underway, especially in the vicinity of Einsteino-va Street. The future city-wide centre includes mainly undeveloped area between The Bridge of Slovak National Uprising (Most SNP) and the Old Bridge, where extensive construction is planned, which is to turn this part into an attractive new district "Nové Lido".



Bratislava divided in five districts  
Bratislava V. is Petržalka



Fig.41  
Chorvátske rameno (an arm of the Danube)



Analysis of functions in Petržalka





Fig.42  
Aerial view - Shopping centre Tesco

The begin of the construction of the Petržalka City zone has been postponed since 2014. The aim of the zone is to radically transform the centre of this part of the city with projects including the construction of both high-rise and low-rise buildings surrounded by new greenery and parks. The affected area is located around the planned tram line at the Chorvátske rameno. The location around this arm of the Danube was originally planned as centre of the city district as the central axis of Petržalka and the supporting system of public transport were to pass through here.

In the western part of the district, some of the original streets and houses of old Petržalka have been preserved.



Fig.43  
Aerial view - Train station Petržalka



Fig.44  
Aerial view - Lake "Velký Draždiak"

<http://www.konduktor.sk/vystavba/urbsutaz.html>, 1.6.2020

<https://tekdeeps.com/photo-amazing-shots-this-is-how-petrzalka-looks-from-a-birds-eye-view/>, 23.6.2020

## ANALYSIS: GREEN AREAS

The majority of the open spaces of the estate are landscaped as park-like greenery and children's playgrounds. Most notable in the area of Petržalka are the sections of unutilised land, among them areas closed for construction in the vicinity of the originally planned communication axis. These areas have no space-dividing elements, such as tree avenues, or they don't have trees at all. What is missing is a separation greenery that would distinguish where the street ends and where the residential area begins. The new trees are planted very randomly as old trees were cut down to make space for new buildings. Even though, green areas around the originally planned central axis still have some potential to make interesting inner park design.

In the northern part of the settlement, right next to the Bridge of Slovak National Uprising (Most SNP), is located the Janko Král Park, which is the largest and one of the oldest parks in Bratislava. The great location between Danube river and shopping mall Aupark makes it a favourite weekend spot for all the citizens of the city. Officially it

is one of the oldest parks in Central Europe, as it was created in 1770s. In the 1970s, the complex was renovated, some bushes were left out and spacious meadows were created, which are now popular for various recreational activities such as sports, picnics or sunbathing.

An important part of the settlement is also the area of originally planned central axis, which is mostly defined by the connection between Chorvátske rameno and lake Veľký Draždiak. Today the area is mainly used as a fishing spot and is suitable for relaxing and taking a walk or for a bicycle ride.

Another recreational area mostly used during summer is flood protection dam next to Danube. It is mostly used as cycle path and roller blade path, that starts from state border with Austria and goes all the way along the Petržalka to Hungarian border in the south. The protection dam is located near two nature reserves. The area is also suitable for horse rides or cross-country runs.



Fig.45  
Chorvátske rameno  
originally planned central axis



Fig.46  
Chorvátske rameno



Velký Draždiak is a lake and former gravel pit located in the southern part of Petržalka. It was transformed into natural swimming pool after 1982. It is shame, but today is not an official swimming pool anymore due to the electrical wiring, that leads over the lake. But it still used "at your own risk" even today in summer days as it is next to numerous sport facilities on the shore as volleyball, tennis court and street work-out bars, even new children playgrounds.



Fig.47  
Janko Král's Park  
designed under the influence of baroque classicism



Fig.48  
Janko Král's Park  
the Bridge of Slovak National Uprising



Fig.49  
Velký Draždiak

<https://bratislava.sme.sk/c/2612052/petrzalka-menej-stavieb-vacsia-zelena-plocha.html> , 23.5.2020

## ANALYSIS: PUBLIC COMMUNICATION AND CONNECTION WITH OTHER DISTRICTS

Petržalka is located south of Bratislava on the right bank of the Danube river. It is connected to other parts of Bratislava by five bridges - the Lafranconi Bridge, the National Uprising Bridge, the Old Bridge, the Apollo Bridge and the Harbour Bridge (from east to west). Two bridges, the National Uprising Bridge and the Old Bridge, which lead to the city centre, are also accessible to pedestrians.

An essential barrier between Petržalka and Bratislava is the motorway in the north of the settlement. Pedestrians must use one of the five widely separated motorway bridges to get to the city centre. Although the settlement is very well located near the city centre, the distance due to the barriers appears subjectively greater.

These bridges also enable the connection between Petržalka and the other districts of Bratislava. Citizens of Petržalka can get to other districts mainly by bus and car and partly by tram. Public transportation is limited to bus routes and three tram stops connecting the Old Town of Bratislava with the northern part of Petržalka. Despite the original plans to build a subway under the city in the 1970s and again in 1990s, the planning has stopped and not continued ever since.

The bus routes in Petržalka are heavily dependent on the road traffic situation. During rush hours, it can take up to 30 minutes to get from the southern parts of Petržalka to the other side of the Danube as compared to only 15 minutes during the off-peak hours.

In order to improve the public transportation and to reduce the daily use of cars, a new tram line was designed in the originally planned central axis in Petržalka. The tram, which will run from the Old Town over the Old Bridge and through the entire district, is under construction and currently the three northernmost stations are already operational.

The newly reconstructed Old Bridge is specifically designed only for trams and pedestrians, which should reduce travel times even during rush hours.



Fig.50  
Old Bridge  
newly reconstructed - specifically for trams



Fig.51  
Highway in Petržalka



## ANALYSIS: TRAFFIC

Due to the few job opportunities in Petržalka, the majority of residents are forced to commute to work in different parts of Bratislava every day. This regularly causes traffic jams on the main roads of the settlement leading to the bridges. The bridges are the only traffic connections to the other parts of the city of Bratislava and are insufficiently developed for the heavy rush hour traffic.

The traffic jams also affect all bus routes from Petržalka to Bratislava. Only in some places there is a separate lane for buses. Thus, public transport does not necessarily mean a faster or more pleasant connection to the city centre. The unattractive public transport in Bratislava results in a very high number of cars in the settlement. Since most of the residents work outside the settlement, there is little traffic within Petržalka during the day. In the morning and in the evening the traffic is denser with traffic jams mainly forming on the mentioned bridge access roads. Due to the high number of cars in Petržalka, it is very difficult to find a parking space, especially in the evening.

In particular, residents of the central parts of the housing estate would again talk about the lack of parking spaces. Over the years, the people of Petržalka have learned a lot of tricks on how to stack up in car parks as efficiently as possible. When there is nowhere to park, it is quite normal to park vertically in front of the other cars, lock them and leave the gear off and the handbrake released. When the owner of a blocked car arrives, he can push the blocking car to get out.



Fig.52  
Parking in Petržalka



Fig.53  
Traffic jam  
during heavy rush hour



## ANALYSIS: APARTMENT BUILDINGS

After the previous experience from other structures of older prefab buildings, was in Petržalka used so called "new construction system" or NKS. This set successfully replaced the previous system ZTB, which was used quite a lot in the location of Háje, mostly in Ovsište. System NKS enabled more variability of the interior and also the construction improvements, such as apartment core solutions. It was supposed to also be a place to try new type of apartment solutions with duplex apartments and skeletal system UNIVEKS - which were then replaced with other buildings with enormous terraces with different functions, which even today hasn't really lived up to the potential.

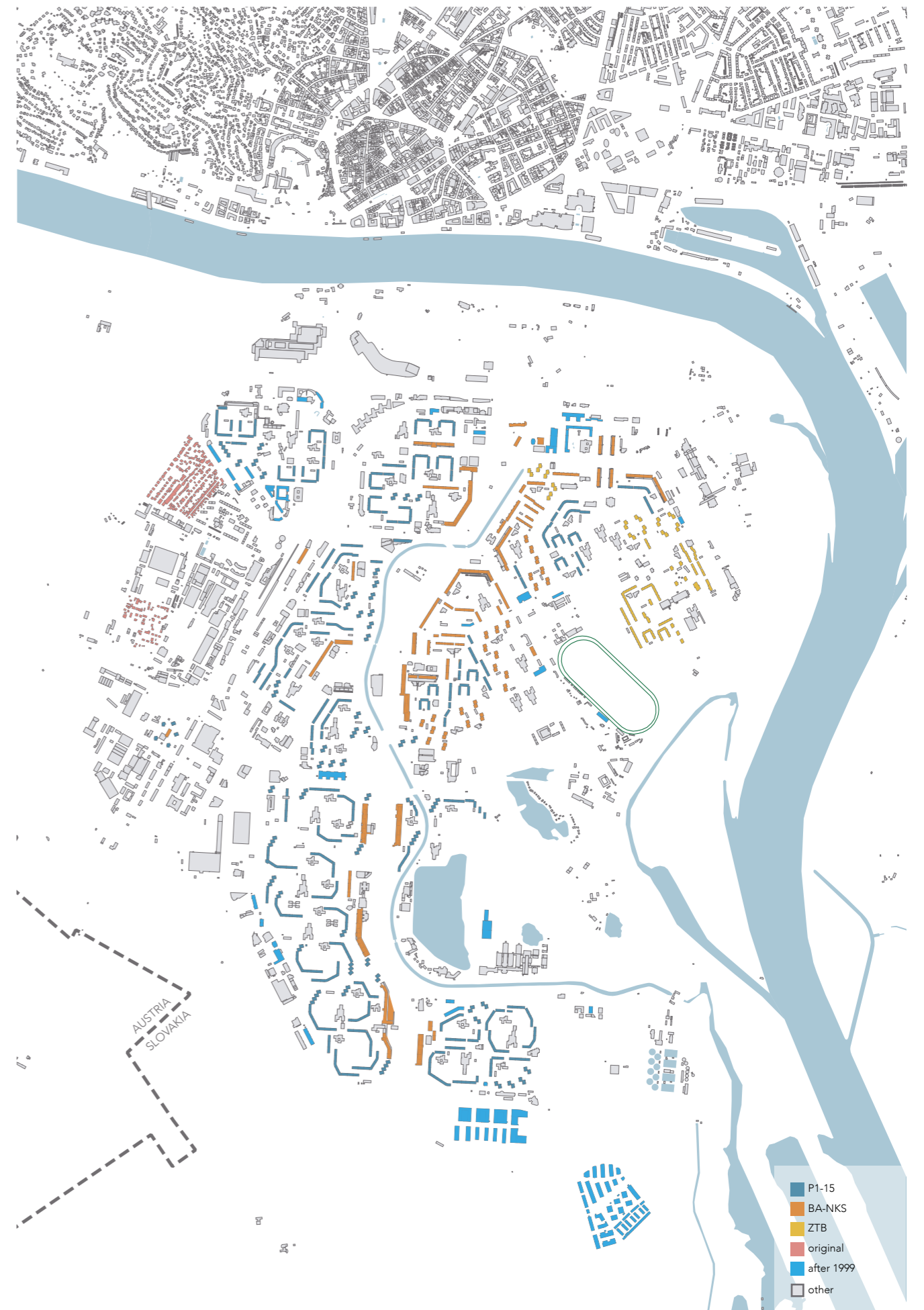
Most of these plans and structures were never realized as the prefab materials were never enough technically prepared. But in the end they were successful enough to create apartments of different types, categories and sizes which even today fulfill typological standards and have relatively good solutions.



Fig.54  
Facade of apartment building  
designed under the influence of baroque classicism



Fig.55  
Aerial view  
prefab buildings



## ANALYSIS: EDUCATION

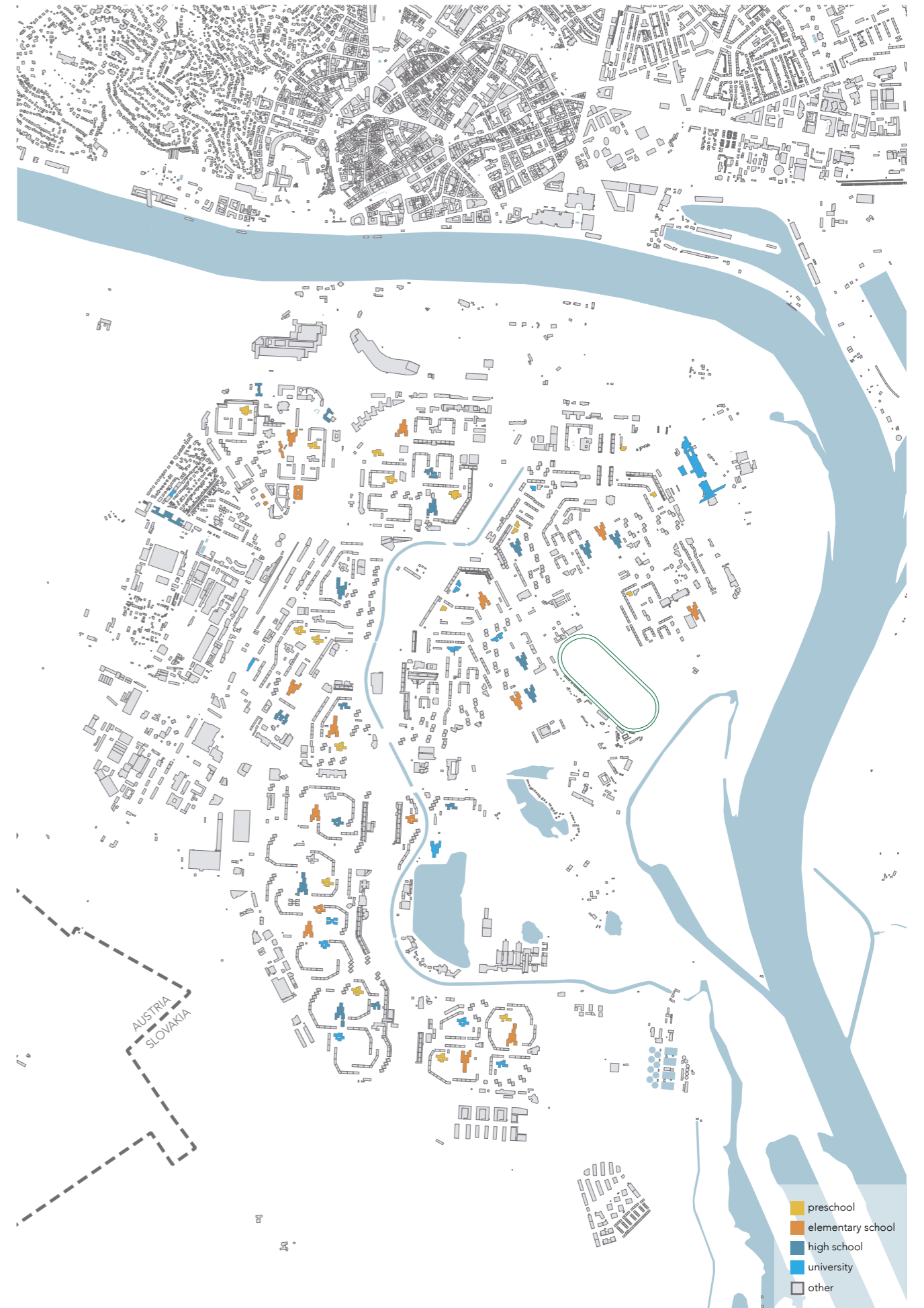
Petržalka has around 61 schools of every educational level. Every part of the settlement has its own school in their area. Education is actually one of the few public functions that are sufficiently represented in Petržalka. These schools are an example of successful, timeless architectural works that continue to function today. The structure was developed as prototype by Henrieta Moravčíková and was successful enough to be used in the whole settlement and also other parts of Bratislava.



Fig.56  
Pre-school in Bulikova street



Fig.57  
High school in Petržalka



## ANALYSIS: SPORT AND CULTURAL AREAS

In Petržalka, there are several recreational areas - Malý and Veľký Draždiak, the embarkment of the main current and an arm of the Danube and sports areas serving the entire city - football stadium, rowing clubs, horse-track, tennis courts.

A horse-track is located in the eastern part of Petržalka. Horse racing has a long tradition in Bratislava and its development is closely linked to Petržalka. When the Bratislava Racing Company was established in 1902, it was decided that the horse-track should be located on the right bank of the Danube in Petržalka. The original horse-track only existed until 1933, but the current facility opened in 1960. During the construction of the settlement, the racecourse was modernized and is now one of the most prestigious racetracks in Central Europe. During the season, well-attended horse races with international participation take place almost every Sunday.

Football also has a long history in Petržalka. The first football club in Slovakia was established here at the end of the 19th century and since then there has been a football stadium in the northern part of Petržalka, near the Old Bridge. The Petržalka Football Club was already very successful during the monarchy and was popular with the residents. The stadium has been renovated many times throughout its history. It was in use until 2008. The last football club in Petržalka, FC Artmedia Petržalka, was very successful in Slovakia and the matches were so numerous that the stadium's capacity was increased to 7100 places. However, in 2008 the sponsors left the club, after which the team and the stadium went downhill. In 2012 the stadium was finally demolished. Since then, despite the long history and great popularity of football, Petržalka has neither a football club nor a stadium there.

In the western part of the settlement, within the industrial zone, there is the Matador summer pool with an Olympic 50m swimming pool with a grandstand, a smaller 20m pool and two children's pools. The swimming pool is very popular in summer and the Olympic pool is used as a venue for swimming and water polo competitions. There are also tennis courts near the site.

There are noticeably just few cultural institutions in Petržalka. According to the original design for the settlement, there should have been twelve cultural institutions with a capacity of 350-1300 people. Due to the poor economic situation in Czechoslovakia in the 1970s, the cultural institutions were given low priority and only three so-called "Houses of Culture" were built.

The first one - the House of Culture Ovsište - is located in the eastern part of Petržalka. It features a hall for 350 people and in the past, it was used for various film and theatre events, exhibitions and also as a nightclub. Today the building is in poor condition and is only occasionally used for cultural purposes.



Fig.58  
Tennis courts





## ANALYSIS: SHOPS AND OFFICE

The promenade around the Croatian arm, the lake Velký Draždiak or the Petržalka dam – residents most often remember these places when they get the question of where they spend their free time. All of these are places with bike paths, playgrounds and pleasant buffets where you can sit.

The originally planned urban axis was supposed to run through the whole settlement and create premises for shops and services. It was assumed, at the time, that this planned shopping street would meet the needs of the residents, which is why hardly any other public spaces were planned. The ground floors of the prefabricated buildings were mostly used as storage rooms. There are only a few so-called terrace slab buildings that have shops on the public terraces on the first floor.

They are also in poor condition, so they need renovation and often do not meet today's standards.

Despite their poor condition, these terraces are busy and the bars and shops are well attended. This is also evidence of the need for people to find urban facilities as well as workplaces in their living environment. The bars, services and small shops which were created in the converted storage rooms on the ground floors of the residential buildings due to a lack of suitable premises also confirm this need.



Fig.59  
Aupark  
shopping mall



Fig.60  
Incheba Expo Arena, Bratislava  
Vladimír Dedeček, 1974 - 1995



## ANALYSIS: AMENITIES

There are several clinics and hospitals in Petržalka. The Medissimo private hospital is located on the western part of Lake Veľký Draždiak. The hospital Antolska is located south of the Lake Veľký Draždiak and is one of the largest hospitals in Bratislava.. In addition to the hospitals, there are few other smaller clinics with doctor's offices in Petržalka. Some private ordinances are also on the ground floors of the panel buildings.

There are not many hotels in Petržalka, because of the distance from the Old Town and the accessibility only by bus. Tourists prefer to stay in hotels in the centre of Bratislava.

Petržalka train station, built in 1897 and radically rebuilt in the 1990s, is now used exclusively for the train connection from Bratislava to Vienna. Although there are track connections between the Petržalka train station and other train stations in Bratislava, they are no longer in use today.



Fig.61  
Antolska hospital



Fig.62  
Petržalka train station



## ANALYSIS: SOCIAL LIFE

Petržalka is home to approximately 110,000 people. For people who do not live in Petržalka, this district can have an image of an overly densely built-up concrete housing estate, but for people who actually live here it is a beloved home.

It is only few minutes to reach the main city centre and few more minutes drive to Hungary or Austria. The highway is directly connected to Budapest, Vienna and Prague. There are also many bike paths which allow you to access Austria by bike.

In general, Petržalka's residents like spending their free time here. During the weekends, they usually go to the Janko Kráľ Park, which has been renovated in last few years or they like to spend their time on the shores of the Danube river. You can find many restaurant and bars here, but also playgrounds for children, as well as many places where you can just relax.

Most of the people enjoy living in Petržalka as it offers everything they need: cultural houses, lakes, commercial establishments, shopping centres, health centres, banks, cinemas, clubs, sports grounds, restaurants, theatres, libraries, or even public swimming pools. It really is a city on its own.



Fig.63  
Velky Draždiak



Fig.64  
Danube shore



Fig.65  
Bike path

<https://dennikn.sk/303308/do-petrzalky-sa-vratil-mier-jedina-velkych-malieb-panelakoch/?ref=in>, 1.6.2020

## ANALYSIS: FUTURE PROJECTS

Developers are taking full advantage of the sharp increase of interest in Petržalka. There are new projects planned for next few years.

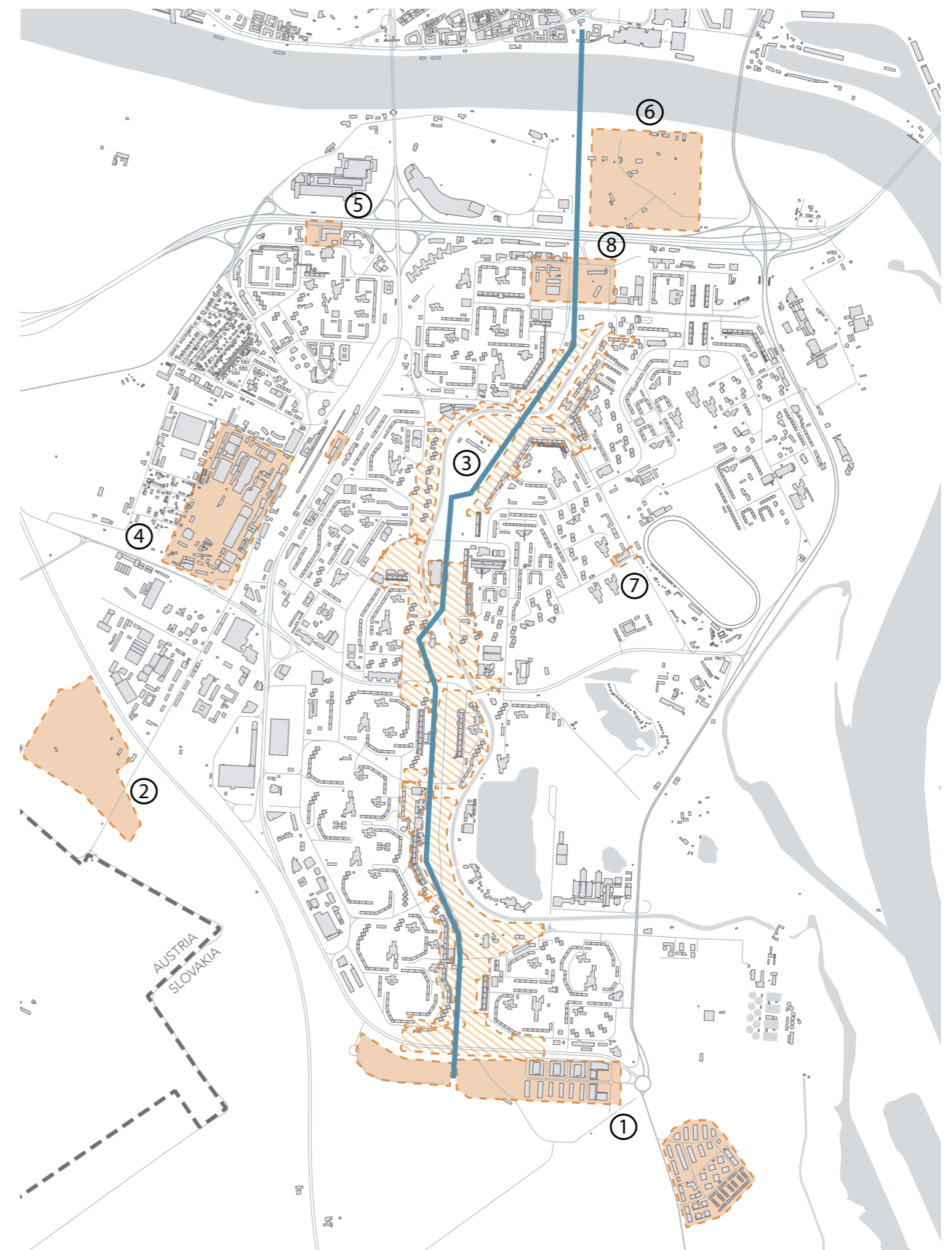
Some of the projects, like Slnčnice, are built on the edge of the settlement, which will create new small districts within the estate. Other projects, like Matadorka, renovate an unused area and will create new apartment buildings and public spaces.

One of the future plans is also to finally build the originally planned central axis, which should be also continuation of the newly constructed tram line. This axis should go all the way from Old Town, through the Old Bridge, to southern part of Petržalka - new part of settlement called Slnčnice. This area along the Chorvátske rameno will work as promenade and main street of Petržalka.

Only part which can be defined as city centre, is the new proposed "central axis" defined by new tram line - which won the competition in 2014, but was criticized by residents as it is only developing new buildings in the original green areas and then rearranging the green space. The other highlighted areas are parts of Petržalka, which are new or were renovated in last 5 years and also new projects proposed in next few years.



Fig.66  
Newly proposed central axis



<https://dennikn.sk/532127/oda-na-petrzalku-preco-sa-ludom-na-zaznavanom-sidlisku-vlastne-dobre-zije/>, 1.6.2020



Fig.67  
Slnecnice



Fig.68  
Nesto



Fig.71  
Einpark



Fig.72  
Nove Lido



Fig.69  
Chorvátske rameno



Fig.70  
Matadorka



Fig.73  
Dudova street



Fig.74  
Fuxova street

## REVIEW: SITUATION TODAY AND FUTURE PROJECTS

Due to the tall nature of majority of panel houses, huge open spaces between the blocks of flats were created. Similar housing estates elsewhere in Slovakia did not have this luxury. The direct connection to natural and scenic areas in the vicinity is also exceptional.

Thanks to this atypical construction, Petržalka works well despite mistakes made in other aspects. Moreover, probably also due to its severity from the rest of Bratislava (Danube, the Einstein highway), it developed into a place that lives its own life, even though it is part of a larger whole of Bratislava. Petržalka still has great potential and pleasant dynamics. Nevertheless, the idea of reconnecting and approaching the historic centre is natural and current.

At the beginning the original intention was to use the large spaces between the blocks of flats for various public and city functions. On top of that the main green belt is where the metro was supposed to be situated - and it was its non-completion that created a valuable public space.

Petržalka has undergone a huge uncontrolled change in the last couple of decades. One needs to understand its background with all the processes that have taken place in this settlement over the time, in order to truly recognize its qualities. Nowadays, we know more about urban planning and we can directly connect complex socio-economic processes with the quality of the urban environment. After all, the city consists mainly of its inhabitants and their daily lives.

Unfortunately, none of new projects actually propose any solutions for green spaces without trees, which remain unused.

Apart from the green areas and the direct proximity to the main city centre, Petržalka has many other qualities. The district is surrounded by natural areas from east, south and west. This is not common for all other districts and thus it makes Petržalka very attractive area to live in. Especially young people and families with children enjoy the surrounding natural areas, which are accessible from anywhere in the district in matter of minutes. This makes the district very popular with young families and people preferring active lifestyle. All kinds of sports are represented here - there is even a horse-track, the only one in Bratislava. On top of that, there are many bike paths. One of the most popular ones is situated on the flood protection dam next to Danube river.

These facts highly contribute to the demographic composition of Petržalka. The large portion of young and working people generates good purchasing power.

There is also a number of educational facilities which is another factor making Petržalka attractive to young population. Schools, pre-schools and even universities create a rich educational net and even attract inhabitants from other districts to commute to Petržalka.

On the other hand, there are also numerous weak points to the district. One of the biggest is the weak public transportation infrastructure, which is often inaccessible or ineffective. Therefore, many people still prefer using cars as their main mean of transport. This results in frequent traffic congestions and also contributes to the worsening parking situation.

Another weak point is the lack of public spaces, which would allow the residents to gather. This weakens the social life aspect and often results in people having to leave the district in order to perform their social activities elsewhere, such as the Old Town city centre. The only big shopping mall within the district is Aupark, which together with the surrounding Janko Kral Park has become the high point of the district's social life. Ever since the opening of the shopping mall Aupark in 2001, the majority of small businesses went bankrupt due to their inability to compete.

Finally, the aesthetical image of the panel-house district is another highly discussed topic. The rather unappealing and monotonous visual can not only discourage the potential buyers, but also makes the orientation difficult. Many streets used to look very much alike until the recent re-painting of the facades during the isolation of panel-houses. However, this has not improved the visual image due to the random colour palette used.

### III. CONCLUSION

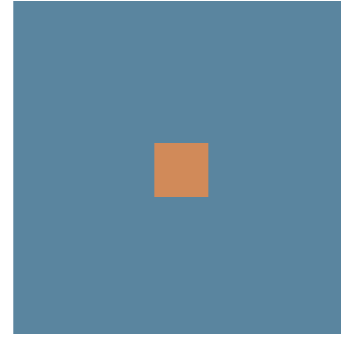
## CONCLUSION: URBAN ANALYSIS

As we can conclude from the analysis, Petržalka is divided into many areas, not only according to the functions, but also according to areas which are typologically divided.

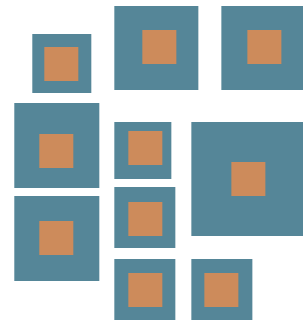
They are divided into subcentres. Each subcentres is self-sufficient in its amenities. What makes every area special is a distinct feature - be it building or recreational area. The goal is to connect these highlight points by newly introduced tram line which will be described further in the next part of this thesis. Only by doing so we can revitalise the inferior parts of the district and make them attractive to inhabit. This idea is based on the Tokyo example where multiple subcentres have been reconnected in a similar way.

This infrastructural connection is a crucial and critical milestone in the further evolution of the district. It is also the only possible way to tackle the current traffic situation problems as well as the lack of parking areas.

Another possible solution might be the introduction of car sharing in the city, however there are many barriers and cultural obstacles which are yet to be overcome in order to achieve this. Moreover, this solution would not offer any answer to the lacking infrastructure problem in a way that is affordable to broad public.



Typical city  
main city centre



Petržalka  
each part has individual centre - subcentre

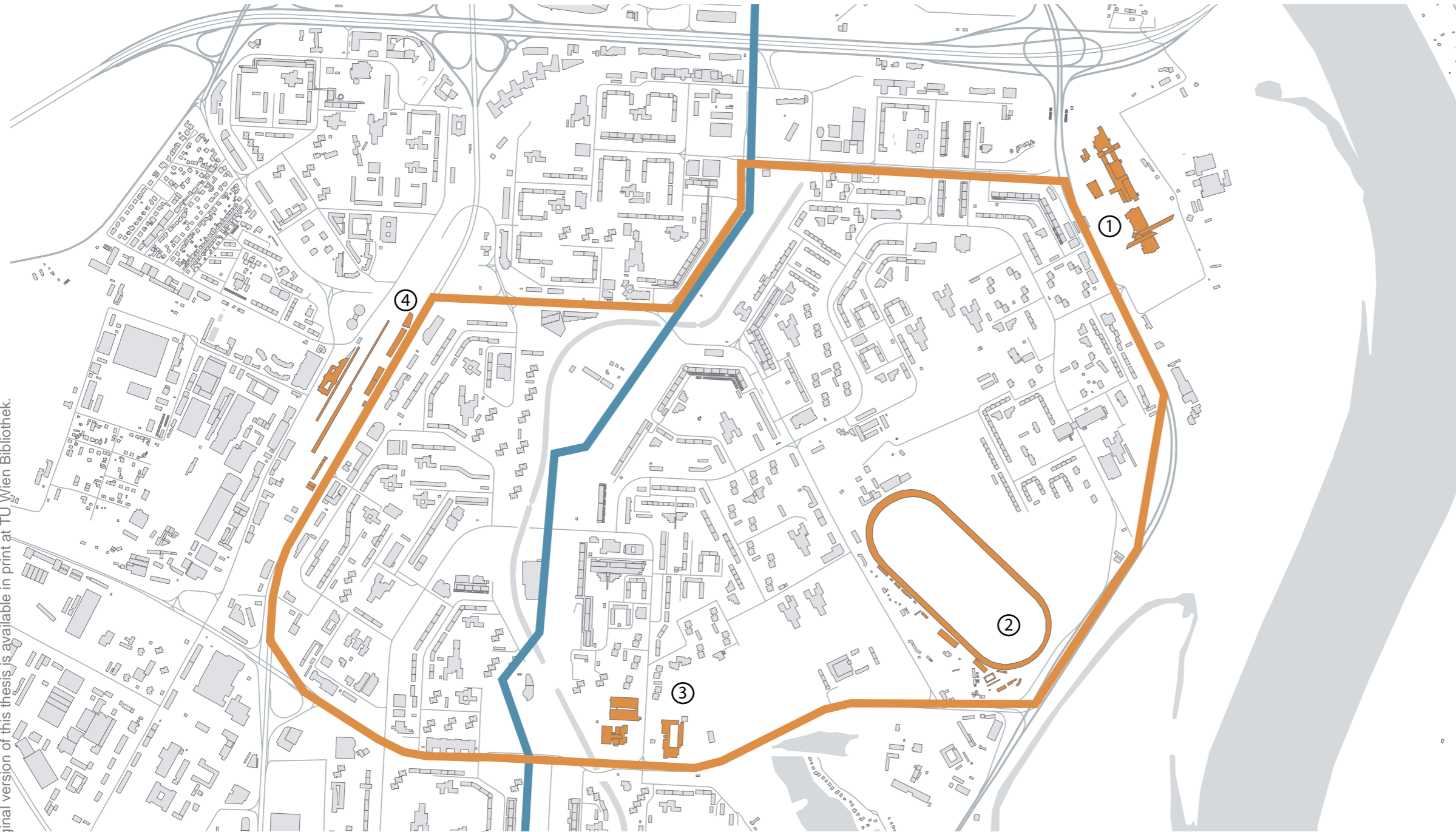
There is a substantial need to revitalise other parts of Petržalka and give opportunities to smaller businesses to flourish again. In order to be able to accomplish this, we first need to improve the infrastructure within the district as well as its connection to the outside areas and create subcentres which would become attractive for people to visit. Only then, we can think about expanding Petržalka beyond its current borders. Any other random expansions such as those we often get to witness nowadays, do not really put Petržalka in any forward direction.



Petržalka divided into small districts



CONCLUSION:  
URBAN PROPOSAL



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Instead of searching for new main centre of Petržalka, this project proposes to create multiple subcentres which would revitalise the district in a complex and wholesome way. In order to do so, a second tram line connecting more areas together will be introduced.

Based on the thorough analysis of the district's composition, four highlight points have been picked - University of Economics, Petržalka Horse Track, Technopol (Business Centre) and

Petržalka's train station.

In the first phase of the urban makeover, I suggest creating tram stations in the direct proximity of these four important areas. This will create a new tram line which will then consist of these four key stations as well as a number of smaller stations in between. Similar to the Ring in Vienna, this tram line drives in circle, connecting these four important areas.

This new tram line is placed on the main roads, which gives it enough space to be build on and it will not affect the daily car traffic. The whole tram line is placed on the same height level, which means there are no height differences.



Fig.75  
University of Economics in Bratislava



Fig.76  
Horse-track in Petržalka



Fig.77  
Technopol



Fig.78  
Train station

## CONCLUSION: STATION - UNIVERSITY

The University of Economics has been - as much as any other university - a natural point of attraction for a large portion of the young population. It is a centre of social life and has great potential to evolve the surrounding area into a culturally and socially attractive public area.

I chose the University of Economics as it has great tradition and also popularity among young Slovak people. Many of those who study here come from various parts of Slovakia and search for an opportunity to gather and become socially active.

The currently poor social situation of the area has resulted in people solely commuting to school and back home every day, without ever stopping to explore the surroundings. One must say there is a good reason for that as the area has really only a little to offer. This must change as the area offers great potential to start with the revitalisation of the entire district. The direct proximity to the two of the main bridges connecting Petržalka with other parts of the city as well as the proximity to the Old Town makes it an excellent starting point of the makeover.

At the moment, the only public transportation way to reach the university is the bus line. The lines distribution does not provide a sufficient connection to the rest of the district with some areas remaining unconnected. Those who come to the university do not have any reason to explore other parts of Petržalka and often find it difficult to transfer from one part of the district to another. Therefore, Petržalka has remained unchanged and unexplored during the years despite the increasing popularity of this university among the Slovak nation.

I believe Petržalka offers great spots and must undergo a complex makeover encompassing various aspects in order to grow and become attractive not only for those searching for housing options but also for those longing for social engagement.



Fig.79  
University of Economics in Bratislava



Fig.80  
Audi max



Fig.81  
Flood protection dam

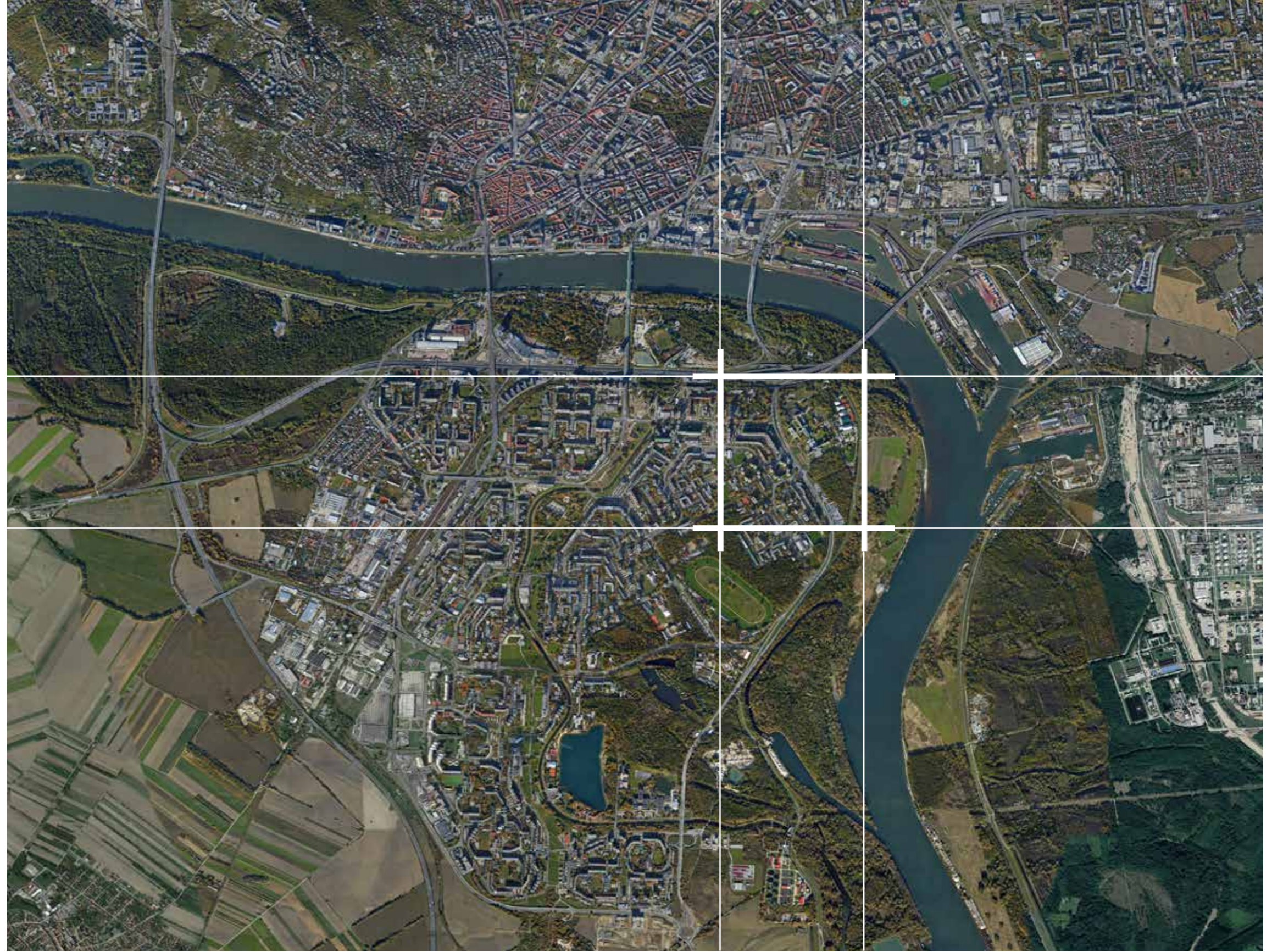


Fig.82  
Sports centre

## IV. SITE ANALYSIS

The location of the site, which I am going to work on in the next phase of the project, is on Bulikova street and is located in the north-eastern part of Petržalka, nearby the University of Economics in Bratislava. It is also connected to one of the main roads, which is then divided between two bridges - Apollo Bridge and Harbour Bridge (Prístavný most), which makes it one of the main transportation hubs with lot of traffic jams mainly in the morning hours.

My idea is to create one of the new tram stations between the residential area and university campus and this way connect these two spaces with a new passage. Applying the method of synchronization is essential as this area will be adapted to the new circumstances and at the same time, I can revitalise the amenities which are not used is much today and also create missing ones to make this new public space self-sufficient in its essentials.



The university and the residential area today are divided by heavy traffic and the only connection is a small hidden underground passage.

The University of Economics has a campus and free areas with huge potential for revitalization.

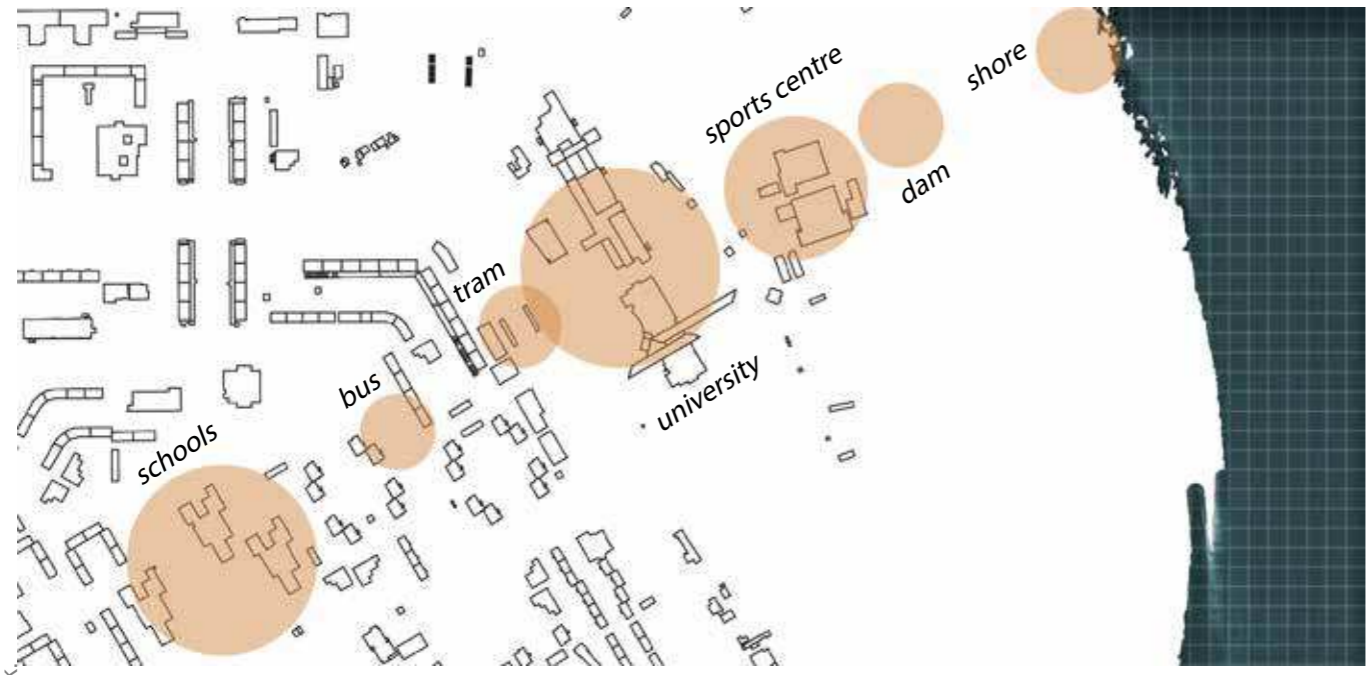
Behind the university is located Slavia sports centre where we can find tennis court, badminton courts, pullup bars for outdoor workouts, but also stables for horses, as you can ride them in this beautiful recreational area next to Danube river.

Next to the sport centre there is the flood protection dam which is popular bike path as it goes all around from Austrian border to Hungarian border trough Pretržalka next to the Danube river.

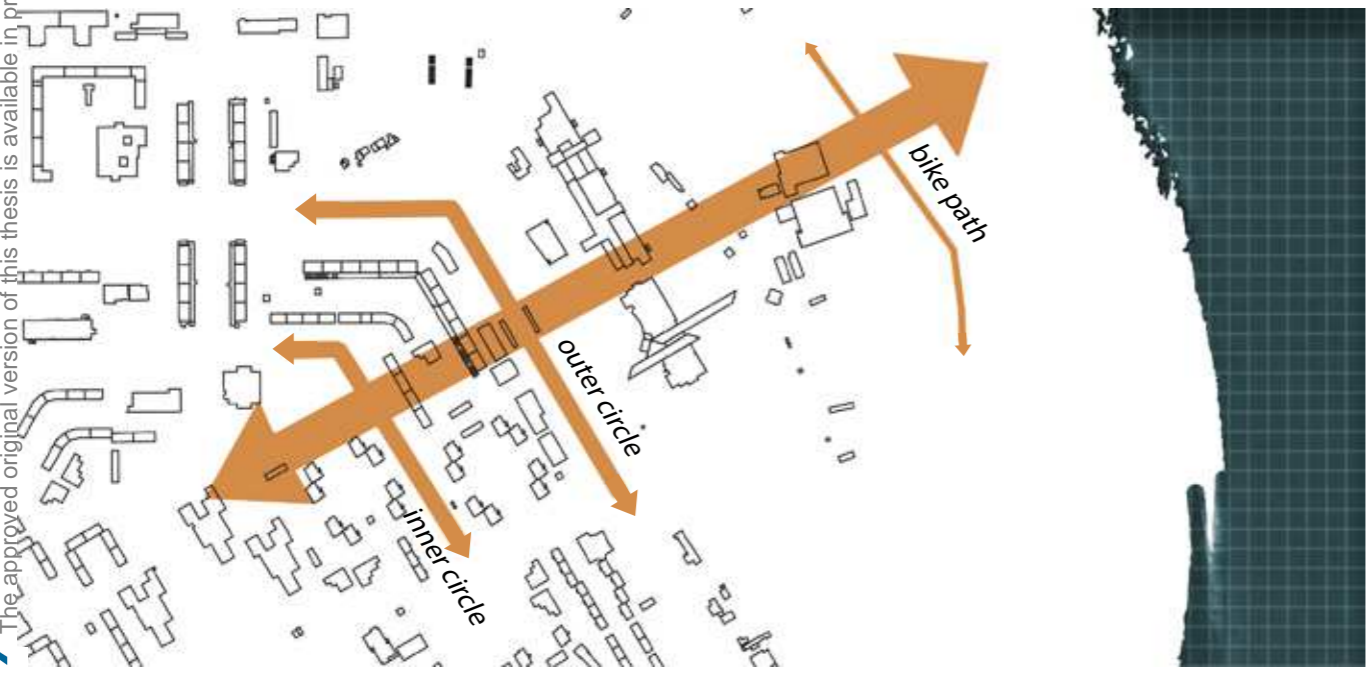
This project was designed to connect the existing spaces and aimed to generate large and inviting urban areas with a clear visual connection.

What I wanted is to direct this project to have natural impact on the landscape and this way utilize more levels and at the same time blend with the surroundings.

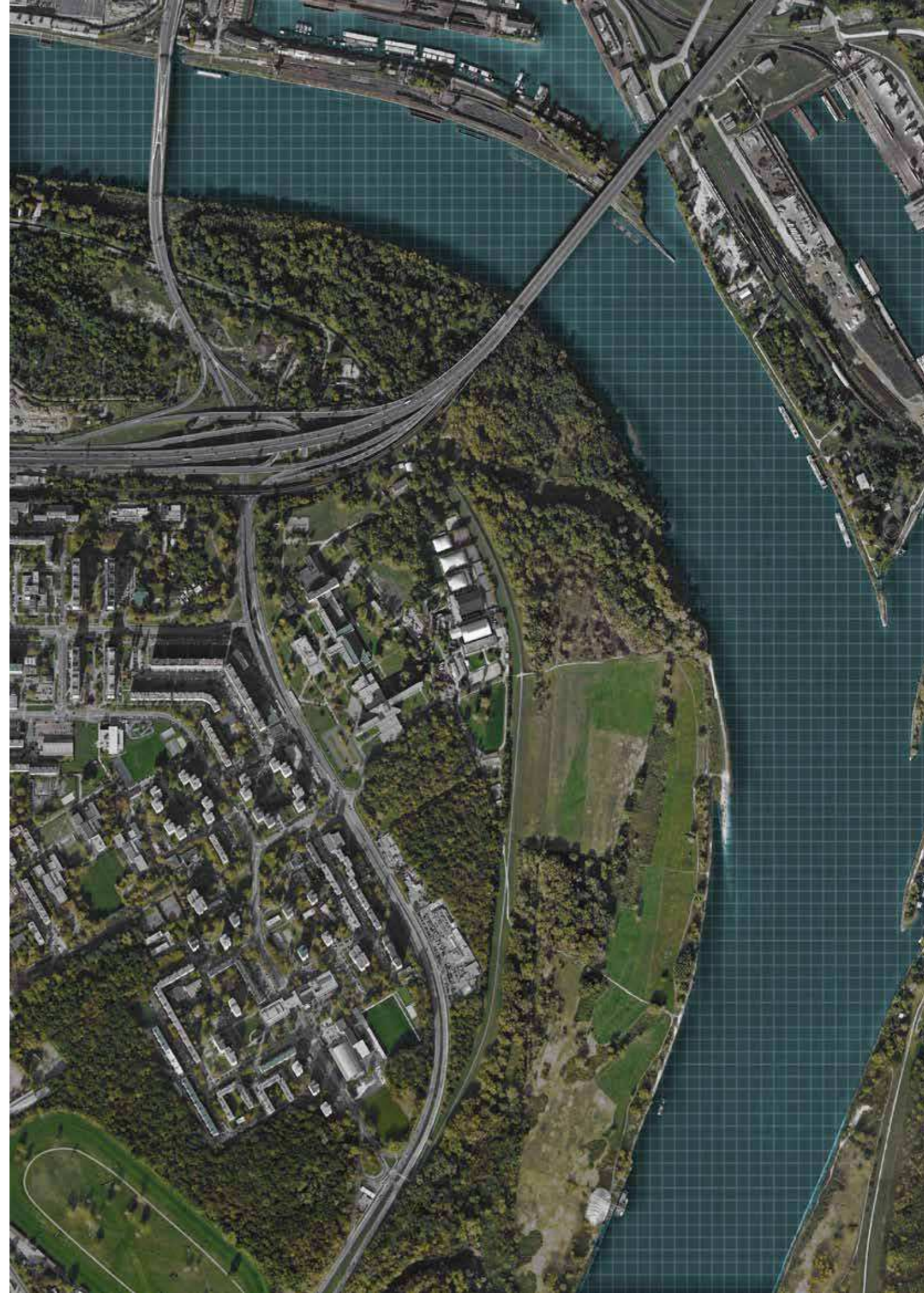




At first, it was necessary to define the most important parts of the area in order to be able to position the newly created tram station in the best possible way. The important areas are highlighted in the graphic above. They create a visual line which gave the basis for the creation of the passage.



By the connection of these parts, an axis has been created. It is the link of the typographic centre of the area with the Danube shore, connecting the inner circle within the settlement with the outer circle positioned on the periphery (main road) and the nearby bike path on the flood protection dam.



## SITE RESEARCH: AMENITIES

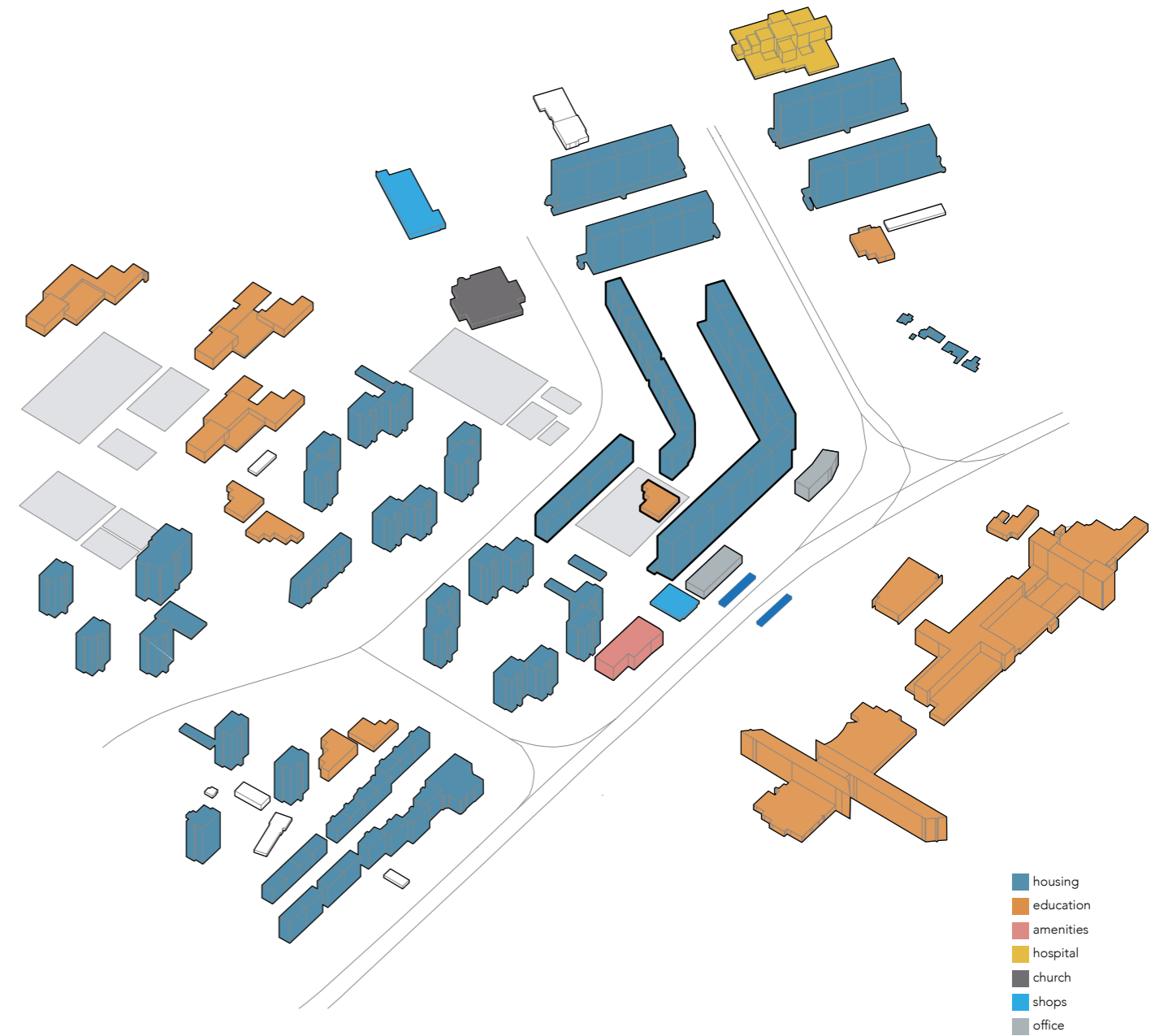
The area I decided to use for the makeover disposes of all of the basic amenities. There is a large portion of residential buildings, there are numerous schools such as Pankúchová complex consisting of the elementary school and high school, two different kindergarten complexes - Bulíková and Mamatayova. Representing the highest educational level, there is the University of Economics of Bratislava, located on the other side of the Dolnozemska street.

There are only two medium-size shops - Lidl and Tesco Express and a couple of smaller shops spread around which suffer from decreasing popularity due to maintenance issues. They could get revitalised together with the rest of the area during the makeover and most of the shop-owners would welcome the increase in visits which would result from this.

The solution to make the area more attractive would be a creation of a new public space around the newly introduced tram line. This would include a multi-level shopping promenade consisting of restaurants, supermarkets, bars and cafés which would not only attract the students from the university but also bring new social opportunities for the residents.

Petržalka has got the reputation of a sleeping-only area where residents live but have to commute to work elsewhere. This is due to the lack of working opportunities and missing office spaces and needs to be tackled as one of the high-priority issues during this makeover. Therefore, I decided to include co-working spaces and office buildings which would attract businesses and create an environment where people do not have to leave for the day.

In the recent years, the concept of co-working spaces has been efficient in many other countries in boosting the start-ups and creating an inviting environment for young people to start their businesses. We see many examples that prove that the locating the co-working spaces in a direct proximity to a higher education entity can even boost start the economics of the entire area.



SITE RESEARCH:  
MAIN POINTS



1. New buildings built after the completion of the district- which doesn't follow the urbanistic concept



2. Unused green areas



3. No visible connection between the university and residential area



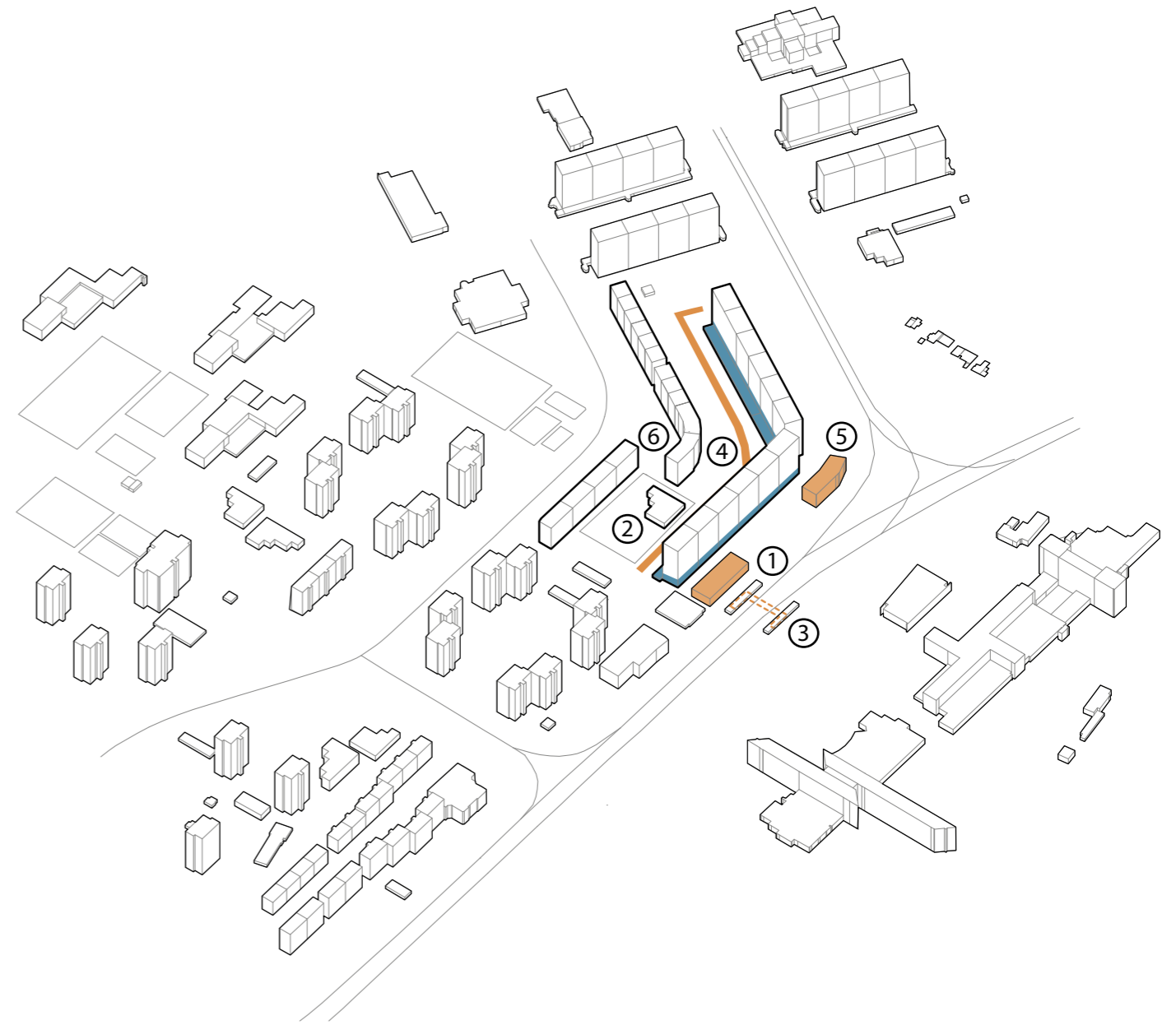
4. Different height between the flats ground floor make a complicated connection between residents and amenities



5. Parking organisation is chaos - cars parking on pathway



6. Anonymity of neighbours - no meeting points/public parks



Various problematic areas within the Bulikova street

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## V. REFERENCE PROJECTS

REFERENCE:  
DE FLAT

**Architects:** NL Architects + XVW  
**Location:** Amsterdam  
**Theme:** housing, renovation  
**Program:** Residential  
**Year:** 2016

Kleiburg is one of the biggest apartment buildings in the Netherlands: a bend slab with 500 apartments, 400-meter-long, 10 + 1 stories high.

Kleiburg is located in the Bijlmermeer, a CIAM inspired residential expansion of Amsterdam designed in the sixties by Siegfried Nassuth of the city planning department. De Bijlmer was intended as a green, light and spacious alternative for the -at that time- disintegrating inner city.

The Bijlmer was designed as a single project. A composition of slabs based on a hexagonal grid. An attempt to create a vertical garden city.

The idea was to renovate the main structure -elevators, galleries, installations- but to leave the apartments unfinished and unfurnished: no kitchen, no shower, no heating, no rooms. This would minimize the initial investments and as such created a new business model for housing in the Netherlands.

Originally the storage spaces for all the units were located on ground floor creating an impenetrable area, a 'dead zone' at the foot of the building. By relocating the storerooms to the upper levels near the elevators the ground level could be freed up for more interactive forms of inhabitation: apartments, workspaces, day-care. As such the plinth would be activated: a social base embedded in the park.



Fig.83  
Front facade view



Fig.84  
Inner corridor



Fig.85  
Outside corridor

<https://www.archdaily.com/806243/deflat-nl-architects-plus-xvw-architectuur>, 13.10.2020

Text description provided by the architects.

REFERENCE:  
INSTITUTO CENTRAL DE CIÊNCIAS

**Architects:** Oscar Niemeyer  
**Location:** Brasil  
**Theme:** Campus  
**Program:** Univesity  
**Year:** 1961

The Instituto Central de Ciências (ICC), also known as Minhocão, is the main academic academy of the University of Brasília. Designed by Oscar Niemeyer, it was originally intended to construct audit rooms for personal staff and to create a series of laboratories in the central area, which could not be constructed for the purpose of occupying the room for hall rooms.

The construction must be around these eyes. It started in June 1963 and was published in 1971. The price came to be occupied when the structure was pronounced, initially psychology and biology. As the university does not have any resources to make other buildings, it is important not to do so in the areas that are more accurate than space. Wide sets of institutes (Exact Sciences, Human Sciences, Social Sciences, Physics, Geology, Letters and Psychology) and three faculties (Communication, Agronomy and Veterinary Medicine and Architecture and Urban Planning.



Fig.86  
Corridor inside of campus



Fig.87  
View from second floor



Fig.88  
Perfect harmony of green and concrete

[https://pt.wikipedia.org/wiki/Instituto\\_Central\\_de\\_Ci%C3%AAncias](https://pt.wikipedia.org/wiki/Instituto_Central_de_Ci%C3%AAncias), 13.10.2020

Text description provided by the architects.

REFERENCE:  
EWA WOMANS UNIVERSITY

**Architects:** Dominique Perrault  
**Location:** Seoul  
**Theme:** university, levels  
**Program:** Educational  
**Year:** 2008

The complexity of the immediate site through its relationship to the greater campus and the city of Shinchon to the south demands a “larger than site” response, an urban response, a global landscaped solution which weaves together the tissue of the EWA campus with that of the city.

This gesture, the “campus valley”, in combination with the “sports strip”, creates a new topography which impacts the surrounding landscape in a number of ways. The Sports Strip, like the Valley, is many things at once. It is a new gateway to the Ewha campus, a place for daily sports activities, a ground for the special yearly festivals and celebrations, and an area which truly brings together the university and the city. It is most importantly a place for all, animated all year long. Like a horizontal billboard, the sports strip presents the life of the university to the inhabitants of Shinchon, and vice-versa.

Once through the sports strip, pedestrian movement and flow through the site is celebrated. A new “Champs Elysées” invites the public into the site carrying students and visitors alike through the campus centre northwards, bringing together the different levels of the site.



Fig.89  
View from the top of the passage



Fig.90  
Lowest level



Fig.91  
Aerial view

<https://www.archdaily.com/227874/ewha-womans-university-dominique-perrault-architecture>, 13.10.2020

Text description provided by the architects.

REFERENCE:  
NEBEN

**Architects:** Kjellgren Kaminsky Architecture  
**Location:** Gothenburg  
**Theme:** Urbanism  
**Program:** public space  
**Year:** concept

In an effort to preserve the public qualities of the Heden area in downtown Gothenburg, Kjellgren Kaminsky Architecture redesigned an underground, mixed-use complex that offers a variety of amenities while maintaining the advantages of open spaces. The project will offer open-air cafes, restaurants, work and retail spaces, sporting facilities, greenery, and an underground car park.

The project aims to densify and activate the Heden area expected to become a catalyst for the development of Gothenburg city center. The new functions, nestled underneath a large green roof used for sports, would be interconnected by ramps and walkways.

A 10-meter-high facade will provide sufficient natural lighting and create a connection with the adjacent boulevard with open-air cafes, greenery and pedestrian areas. Workspaces, stores and restaurants would open up along the street, forming a dynamic, car-free environment.



Fig.92  
View from top of the passage

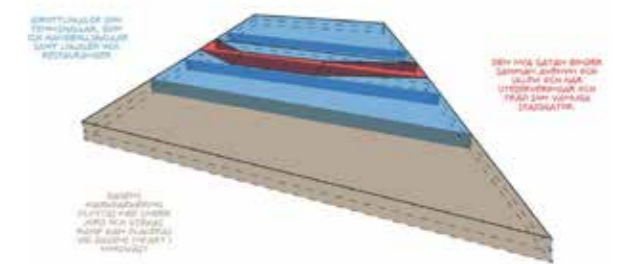


Fig.93  
Inner diagrams

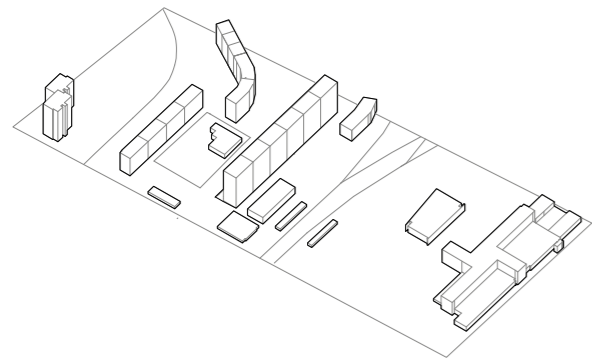


Fig.94  
Urban concept

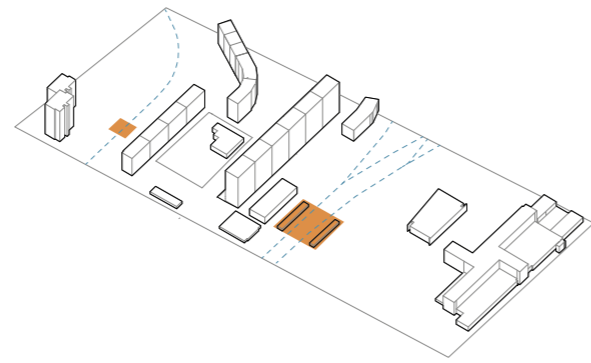
<https://inhabitat.com/green-roofed-neben-development-preserves-public-space-in-the-heart-of-gothenburg/neden-by-kjellgren-kaminsky-architecture-3/>, 13.10.2020

Text description provided by the architects.

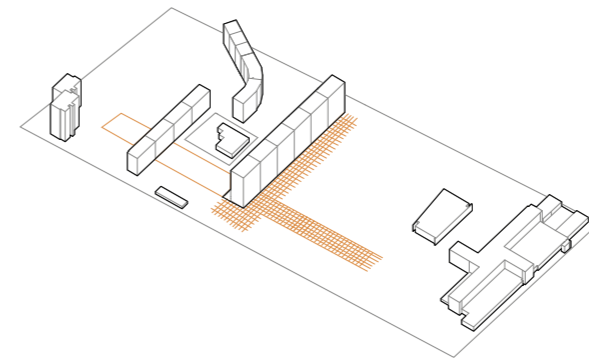
## VI. DESIGN CONCEPT



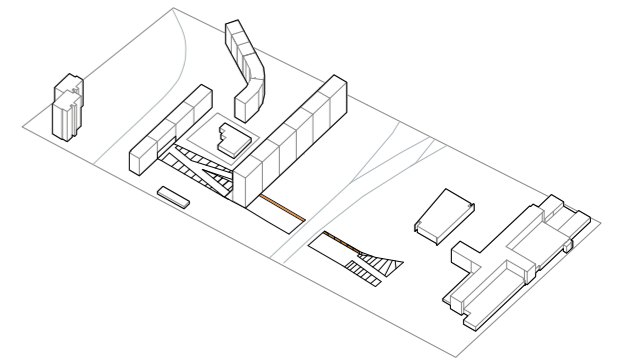
1. This is what the site looks today



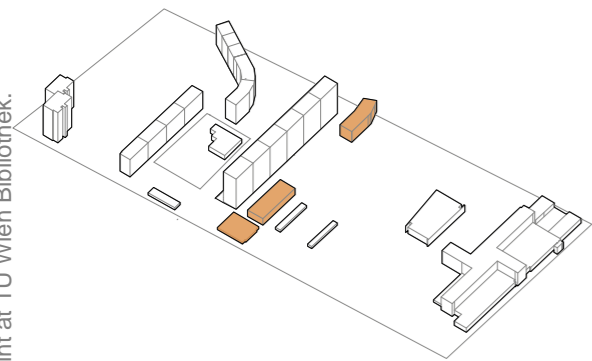
2. Defining the two stations and inner and outer circle



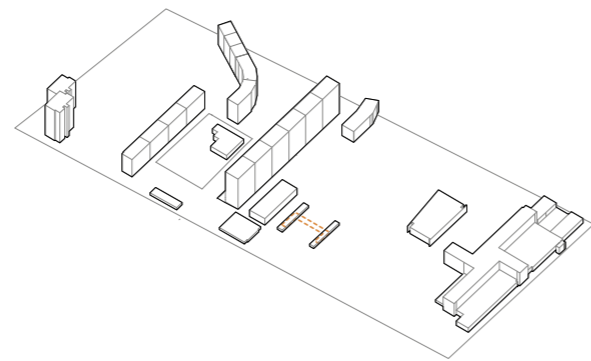
7. Create grid 8,1m x 8,1m



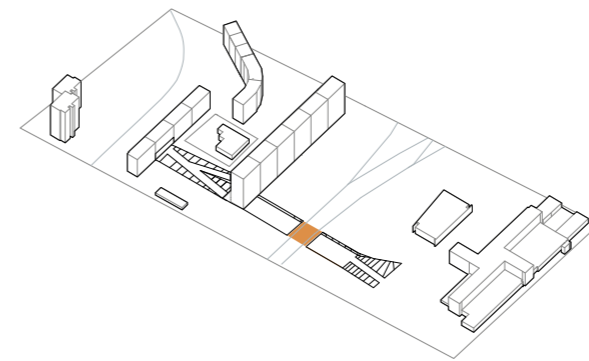
8. Define new passage



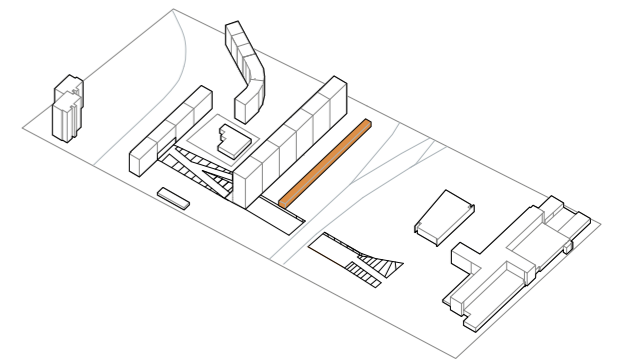
3. Buildings that do not have purpose in new concept



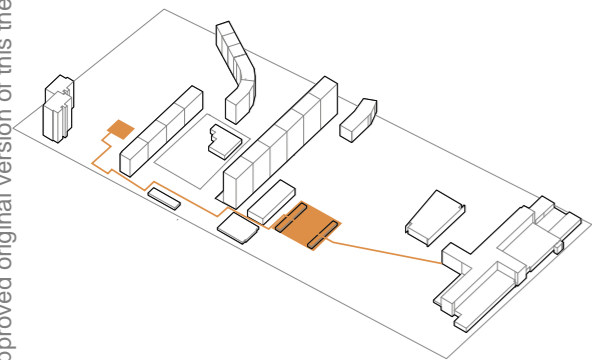
4. Original passage



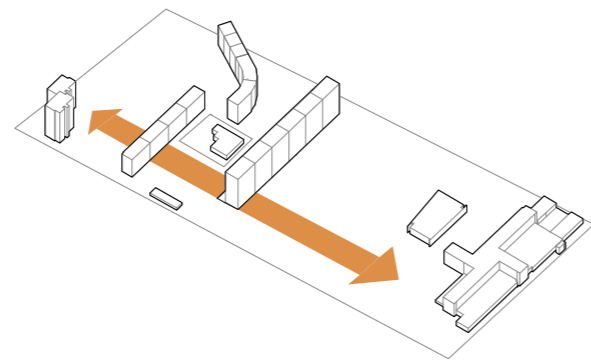
9. Create new tram station



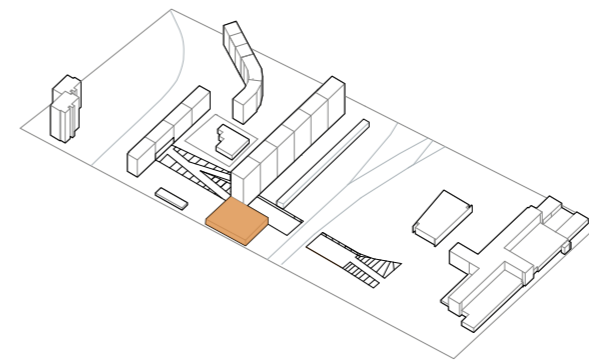
10. Office and co-working building



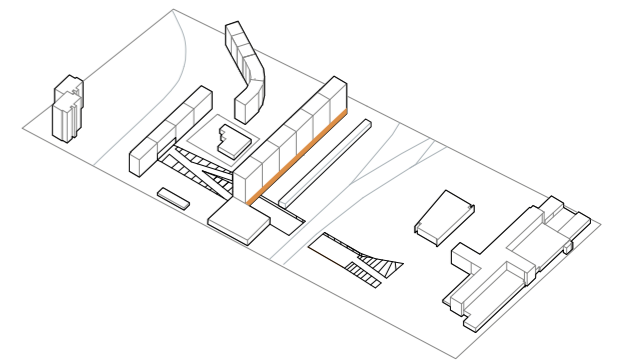
5. Complicated connection between bus station and university



6. New more defined connection



11. Parking house



12. Revitalization of functions on ground and first floor

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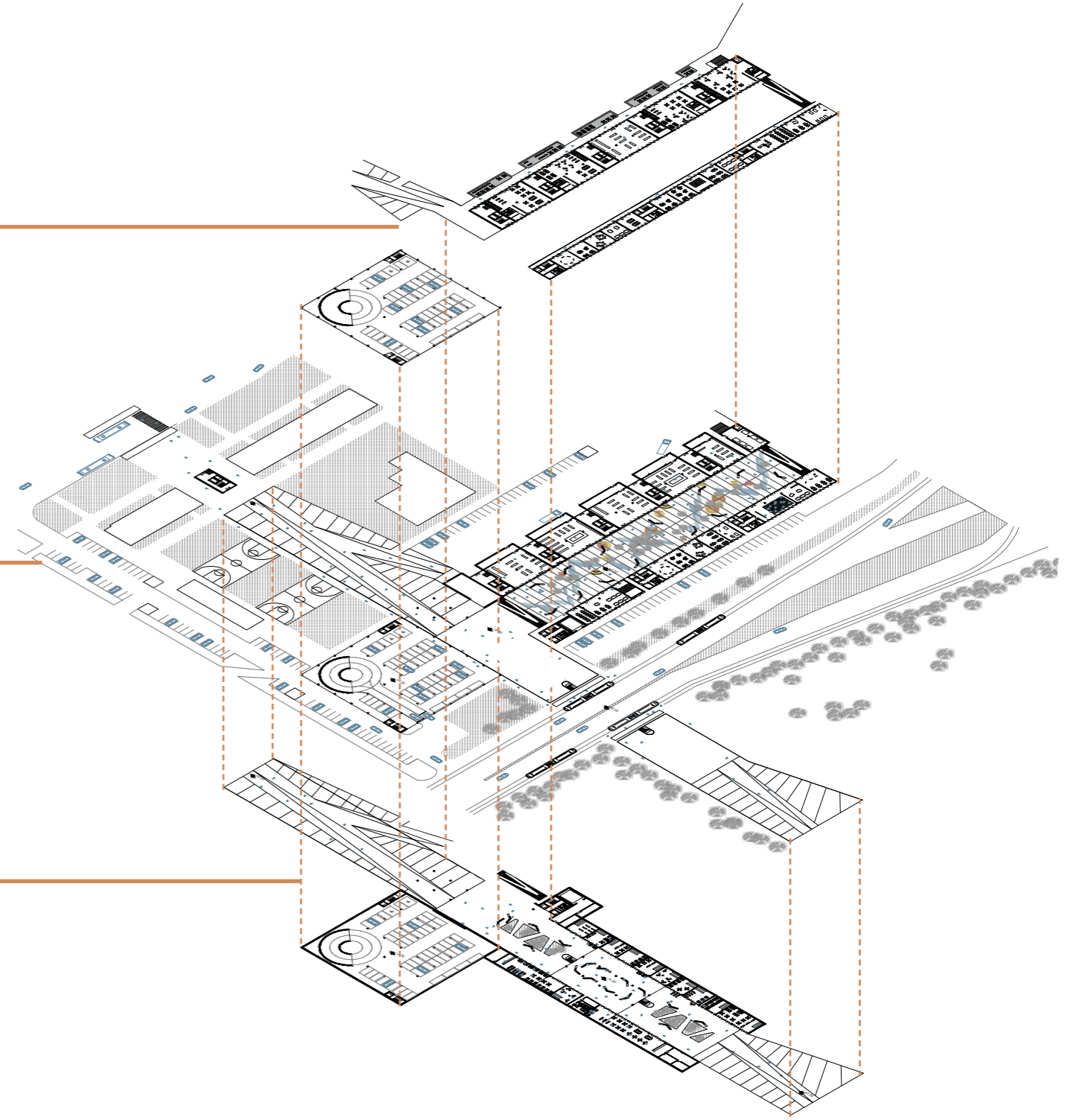
The second level is accessible from the newly created path or directly from the public square. A variety of establishments can be found here, ranging from street food stands up to restaurants, bars, pubs and cafés offering the visitors a place where they can meet and spend their time.

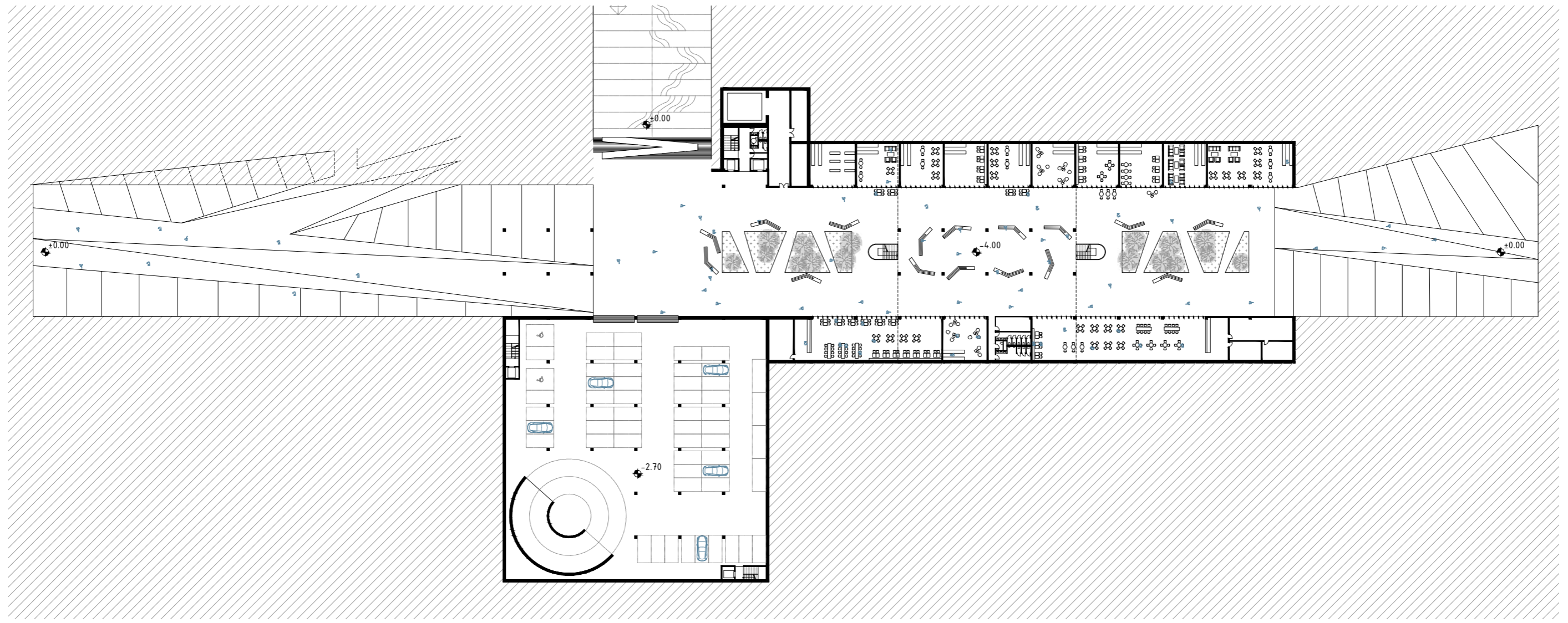
2

The ground floor level is defined by the new tram station. The direction from there is a clear path to the university campus on one side, and a renovated public space which has been turned into a promenade full of modern shops, restaurants and co-working spaces on the other side.

1

The first level is actually the lowest level in the project. It is defined by passage between the campus of the university and the residential area. Here we can find new shops, bars, restaurants, coffee houses and public spaces for different activities.

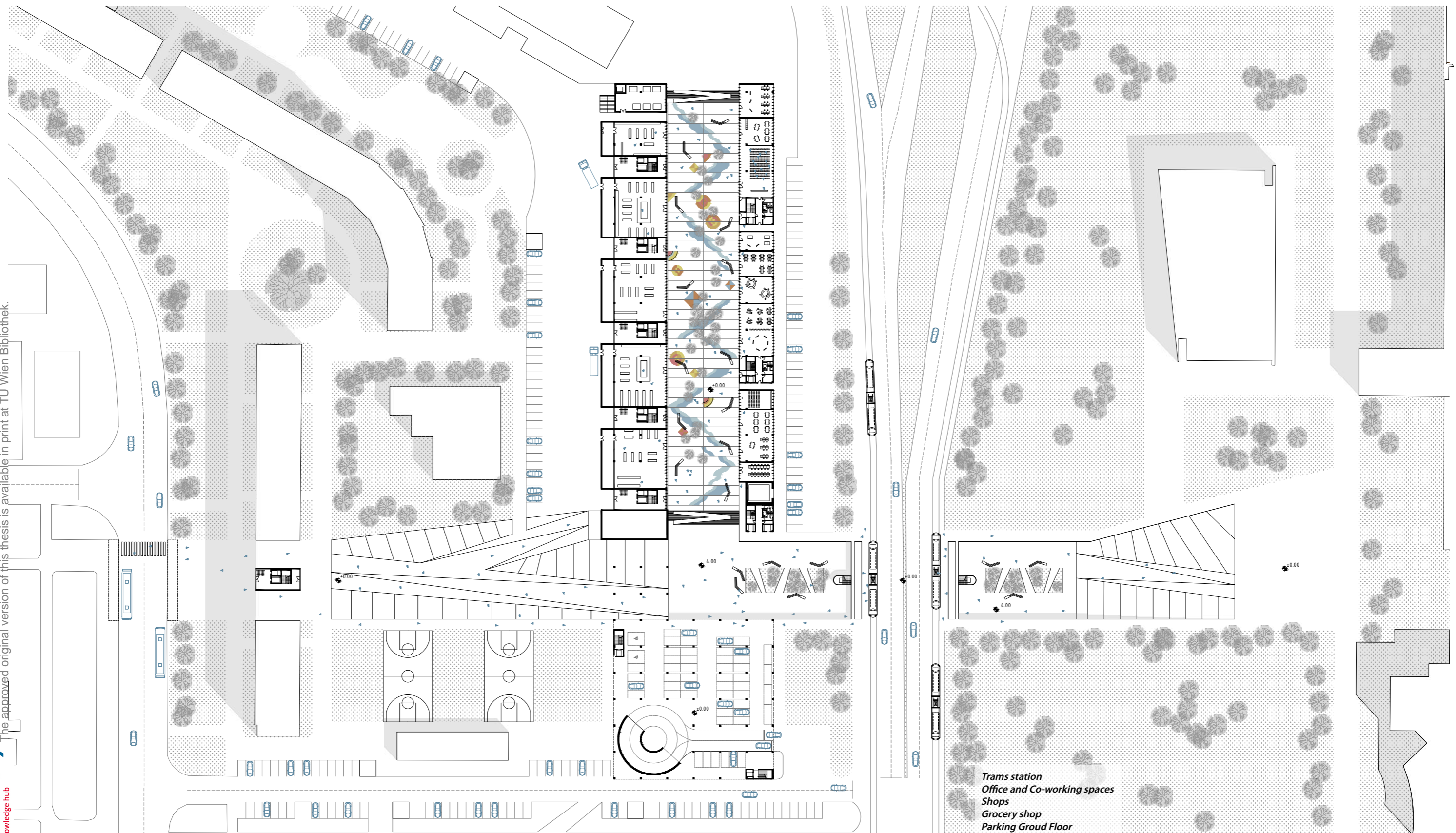




- Passage
- Fast Food
- Bars
- Restaurant
- Shop
- Parking First Floor

First floor plan of the new public space 1:1000

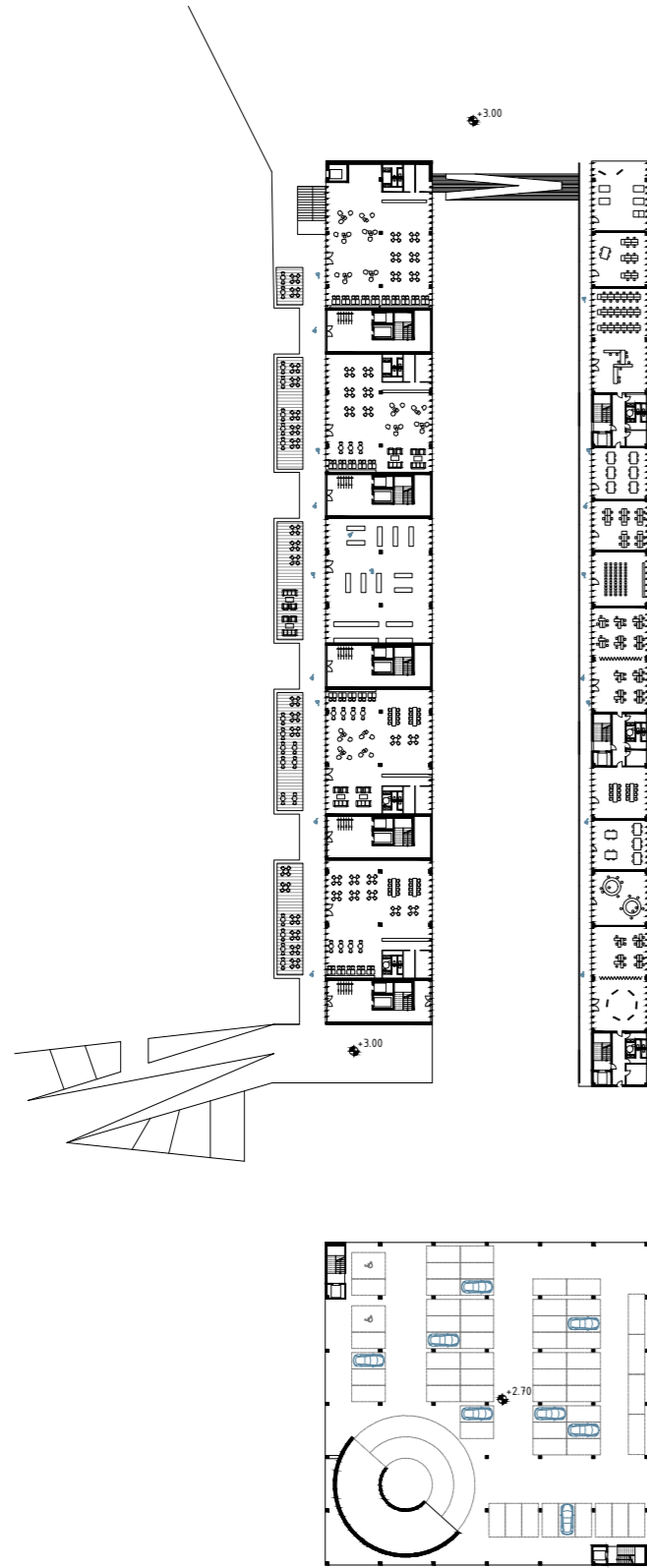




Ground floor plan of the new public space 1:1000







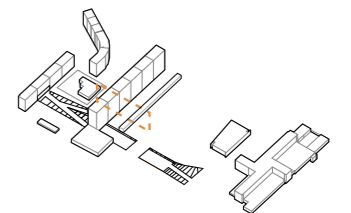
- Office and Co-working spaces*
- Shops*
- Coffee house*
- Bars*
- Restaurant*
- Parking Second Floor*

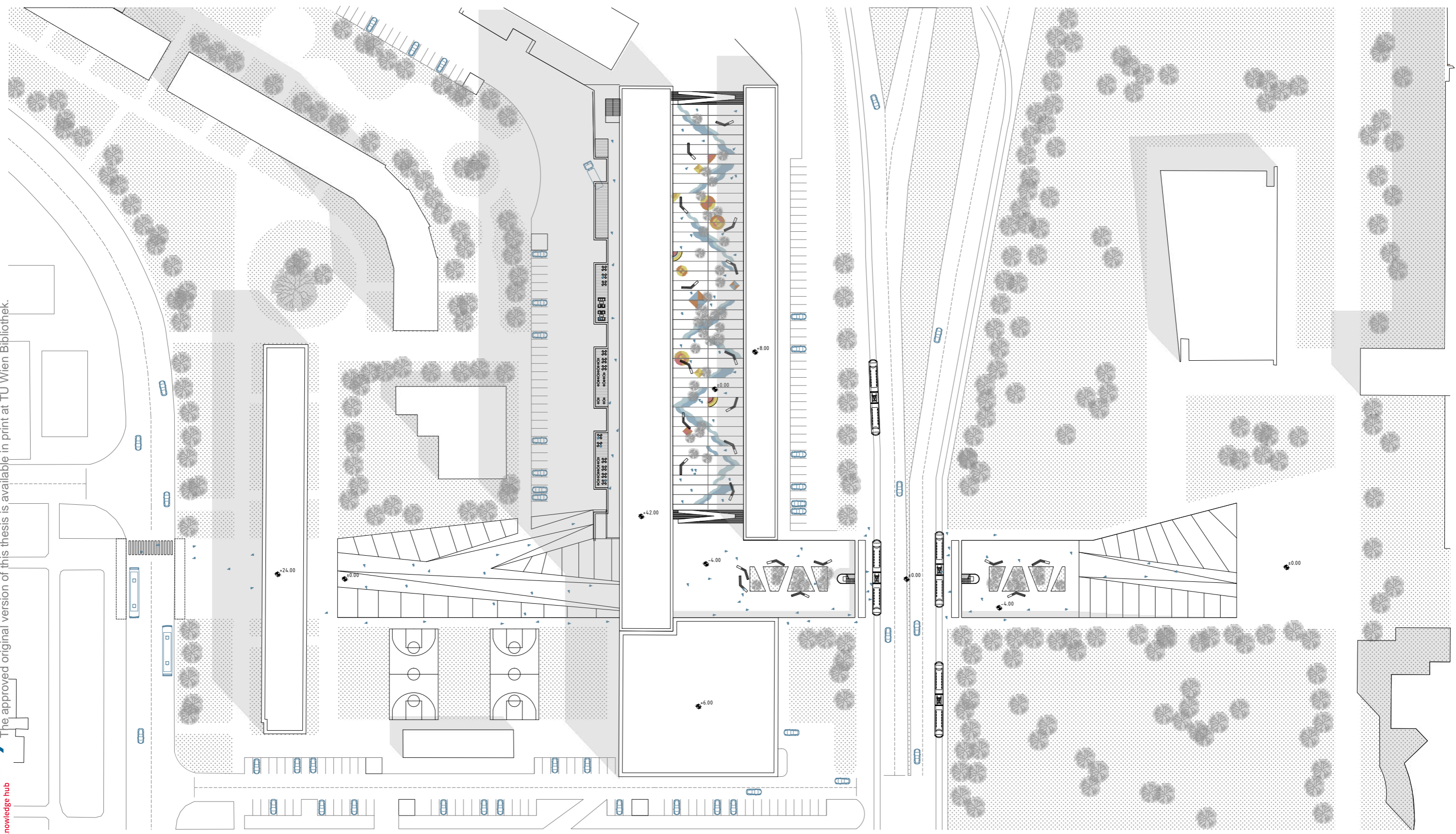
Second floor plan of the new public space 1:1000



Section through the Office building

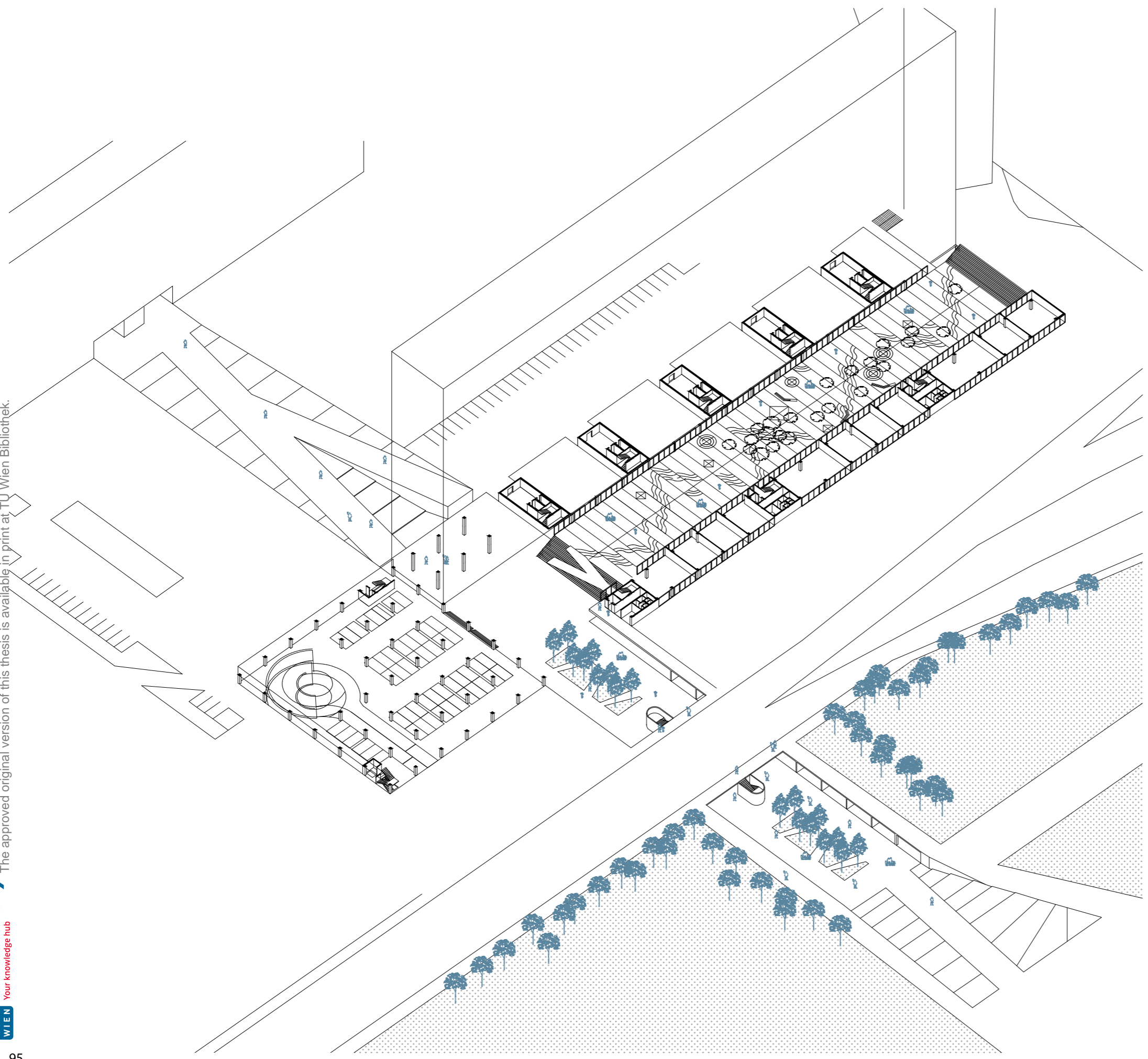
1:500





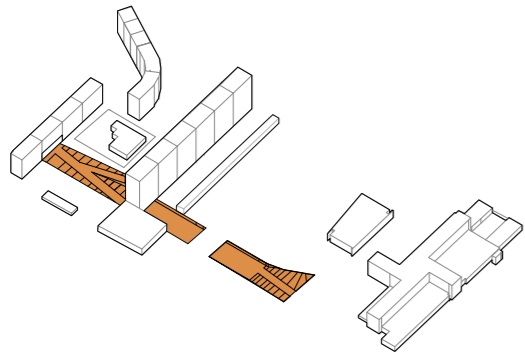
Rooftop plan of the new public space 1:1000



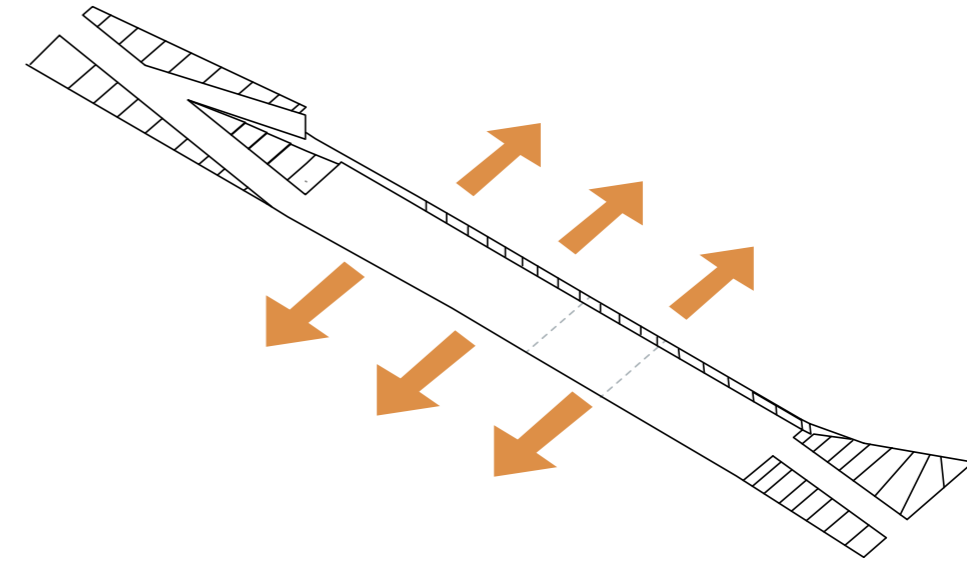


Axonometric view  
Ground level

# DESIGN PART 1: PASSAGE

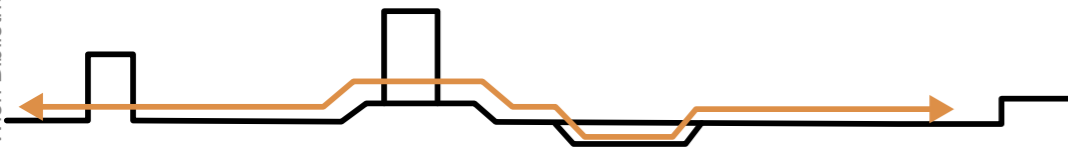


The concept for the passage creates a clear pedestrian connection between the university and the residential area. At the same time, it introduces new amenities into the area, which have been absent here before. A new interesting public space is created, offering a direct connection to other parts of Petržalka.



The new amenities were created along the pathway, giving a solution to the lacking social attractiveness of the area. Based on the underground profile of the passage, this is a good way to make the area more visually appealing and also making use of the underlying free space.

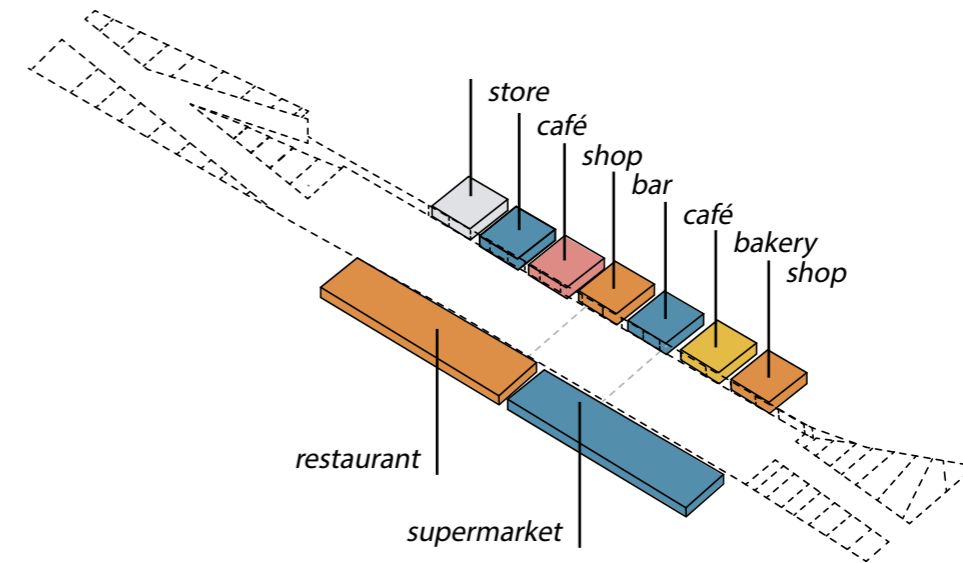
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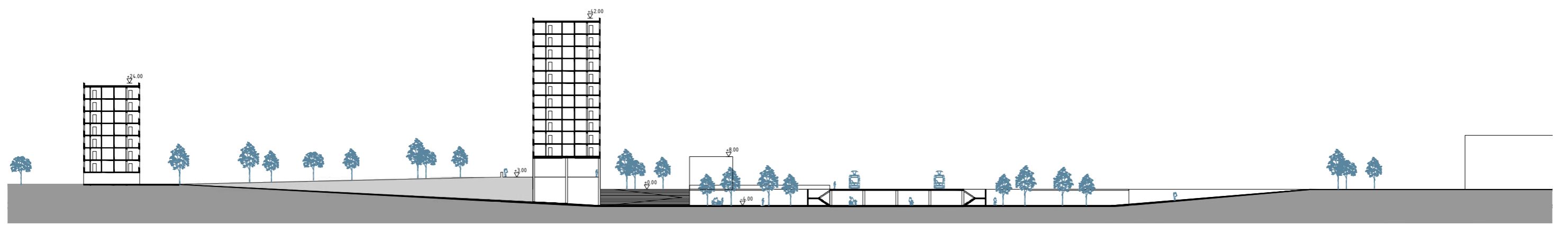
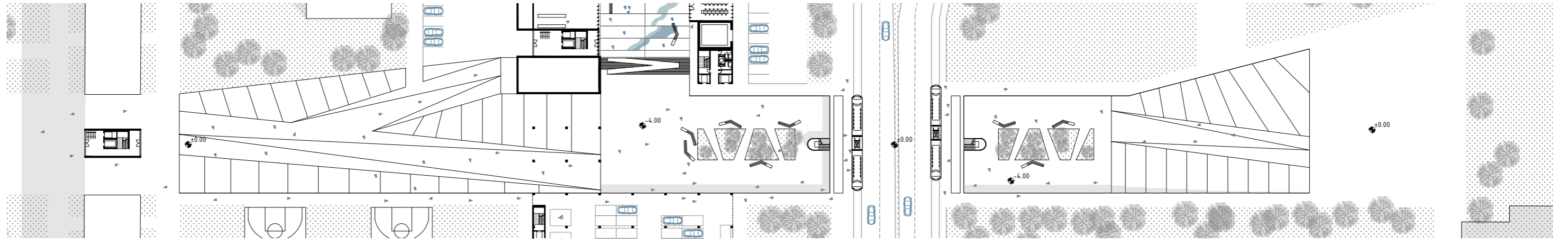
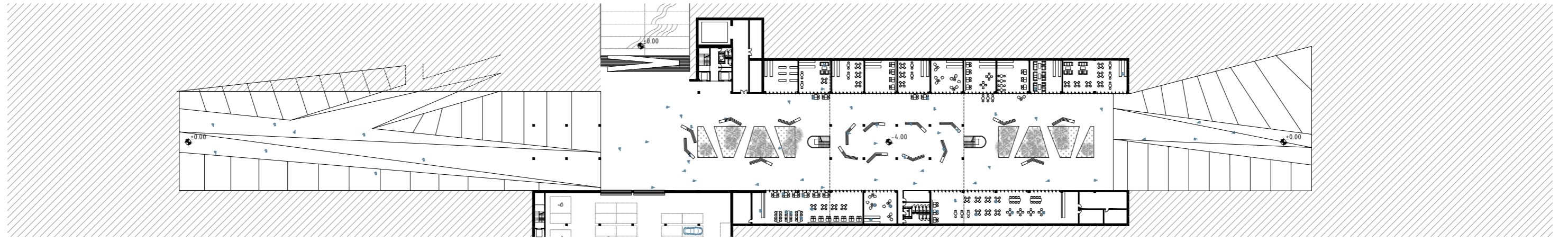
Nowadays, the connection between the residential area and the university is rather inconvenient and complicated to overpass with a path leading through different height levels. There is no visible link between the two elements and the underground passage is in a very poor condition.



By introducing the new pedestrian path and a natural passage, we not only give space to new attractive amenities which attract visitors and allow them to spend their time at, but also simplify the transition from one side to the other by reducing the pathway to only one level.

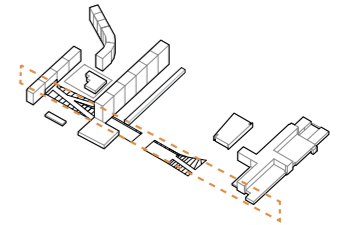


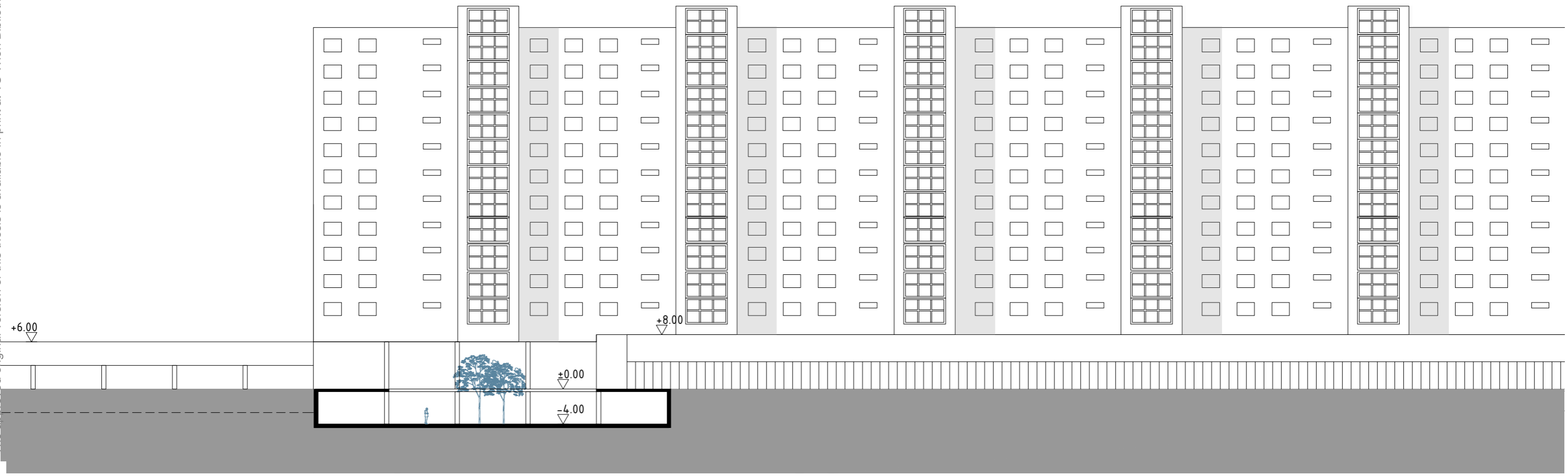
The passage has been created based on the two assumptions: the visitors should be able to transfer from the university campus to the residential area and the nearby public transportation in an easy and convenient way and secondly, the need for new amenities and the associated social attractiveness should be fulfilled.



Floor plan and section of the new passage

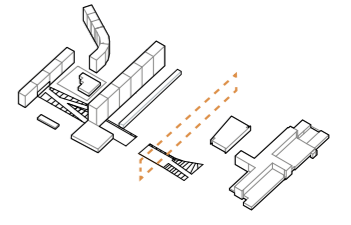
1:1000

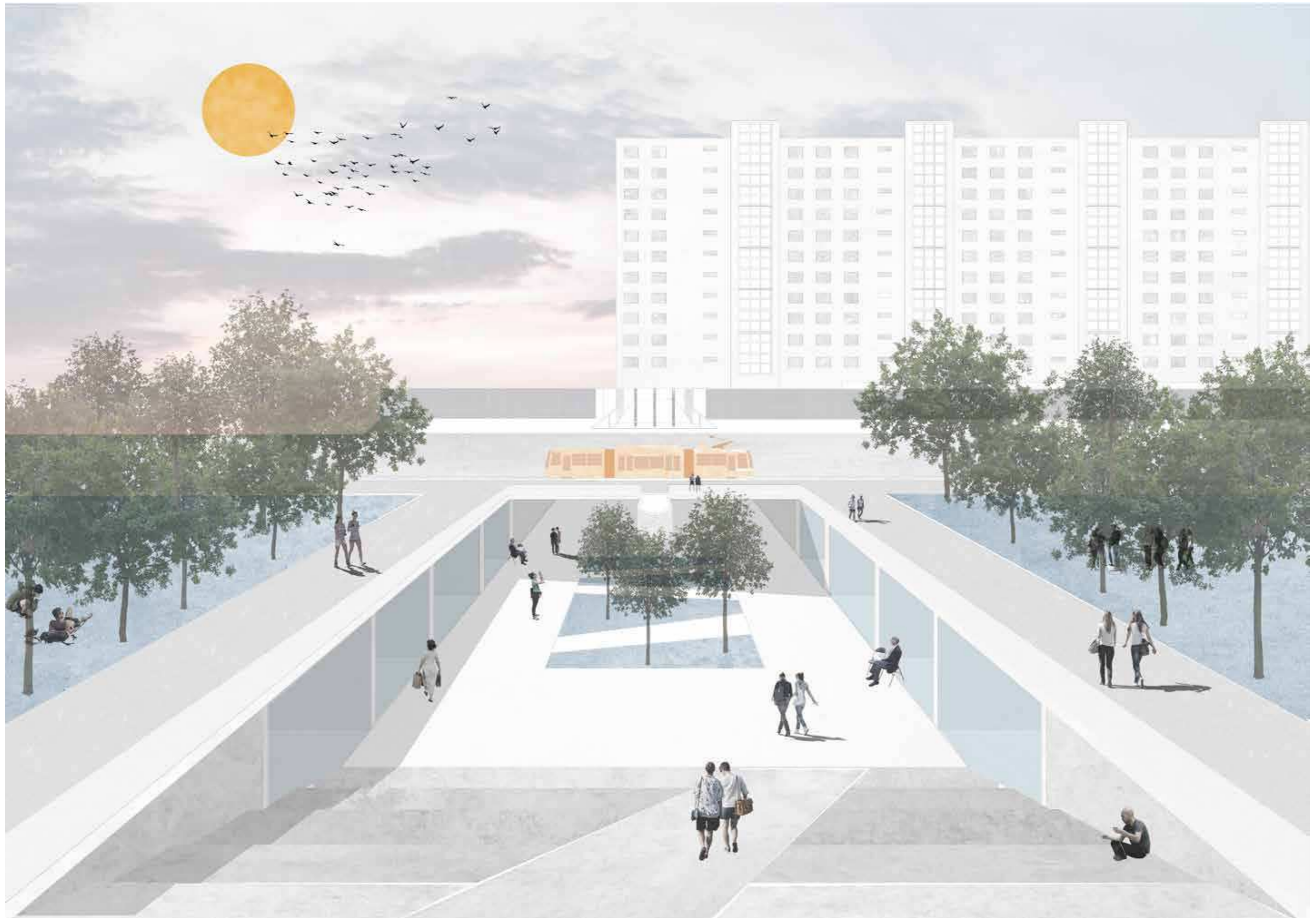




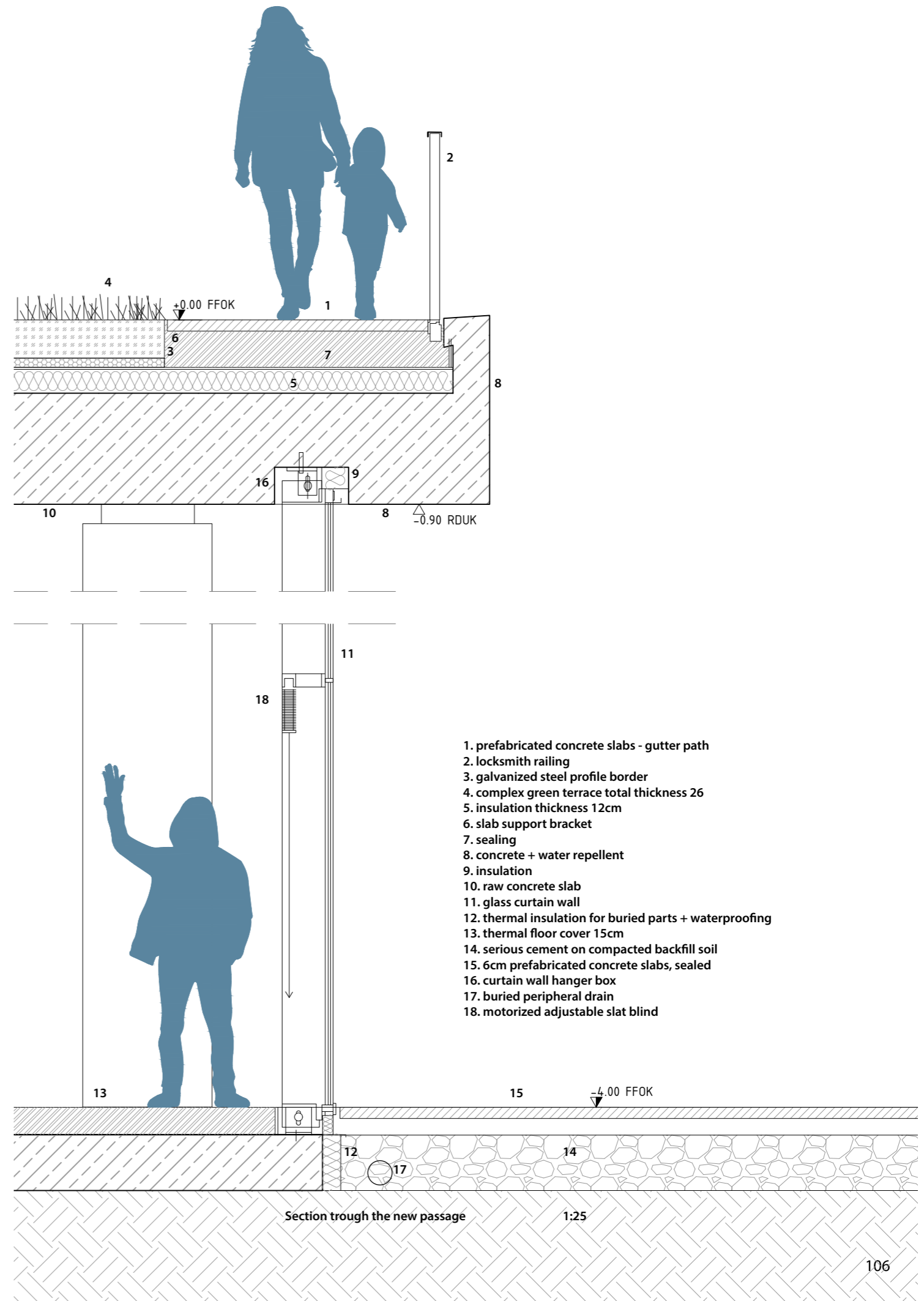
Section trough the new passage

1:500



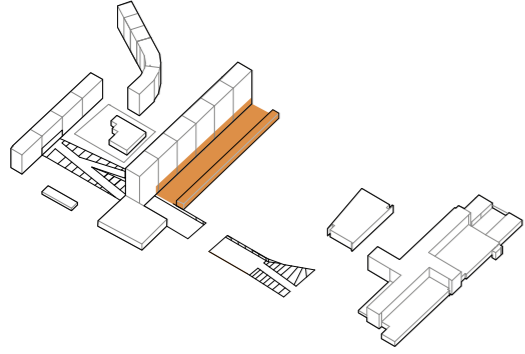


Perspective view of the passage

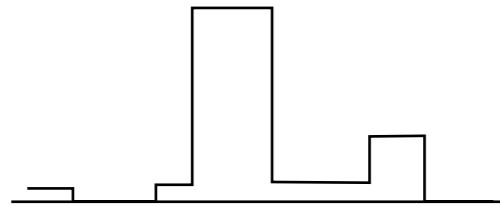




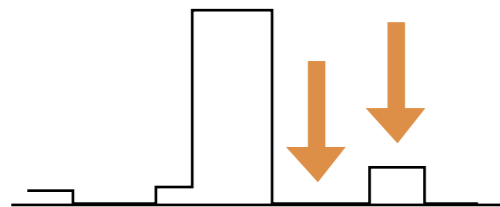
## DESIGN PART 2: OFFICE AND CO-WORKING SPACES



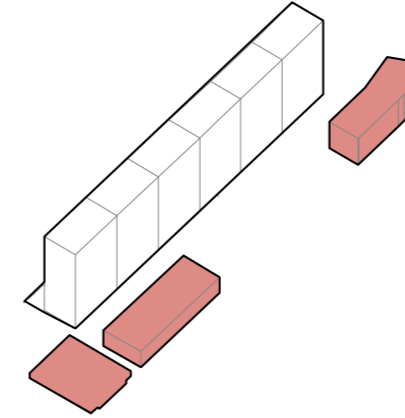
The second design concept tackles the revitalisation of the pedestrian area located directly underneath the panel houses on Blagoevova street. This area faces the university complex and is therefore in a direct connection with the newly created passage. The newly built complex consists mostly of co-working spaces and thus enables social integration.



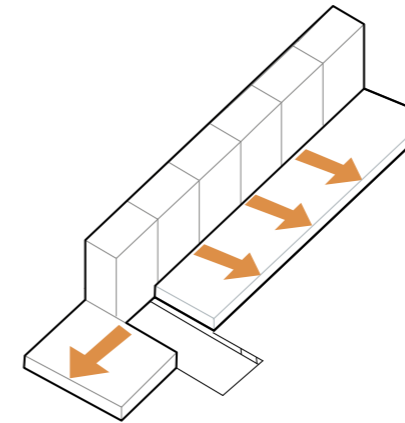
The current situation of the section is depicted on the left. The main goal of the makeover is to adjust the surface levels to one common height in order to simplify the transition to the newly created passage and creating additional space for co-working offices.



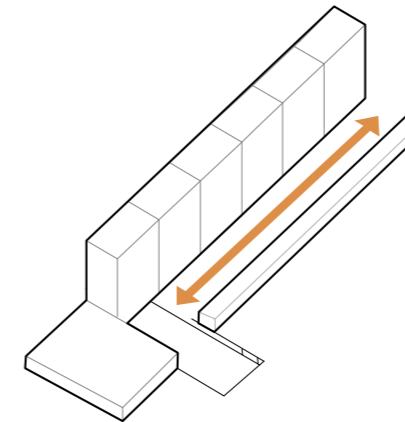
The level adjustment is depicted using the arrows. The garage area under the building is transformed into newly created public amenities such as restaurants and shops. The building opposite the residential building accommodates co-working spaces and gets an additional floor by this level adjustment.



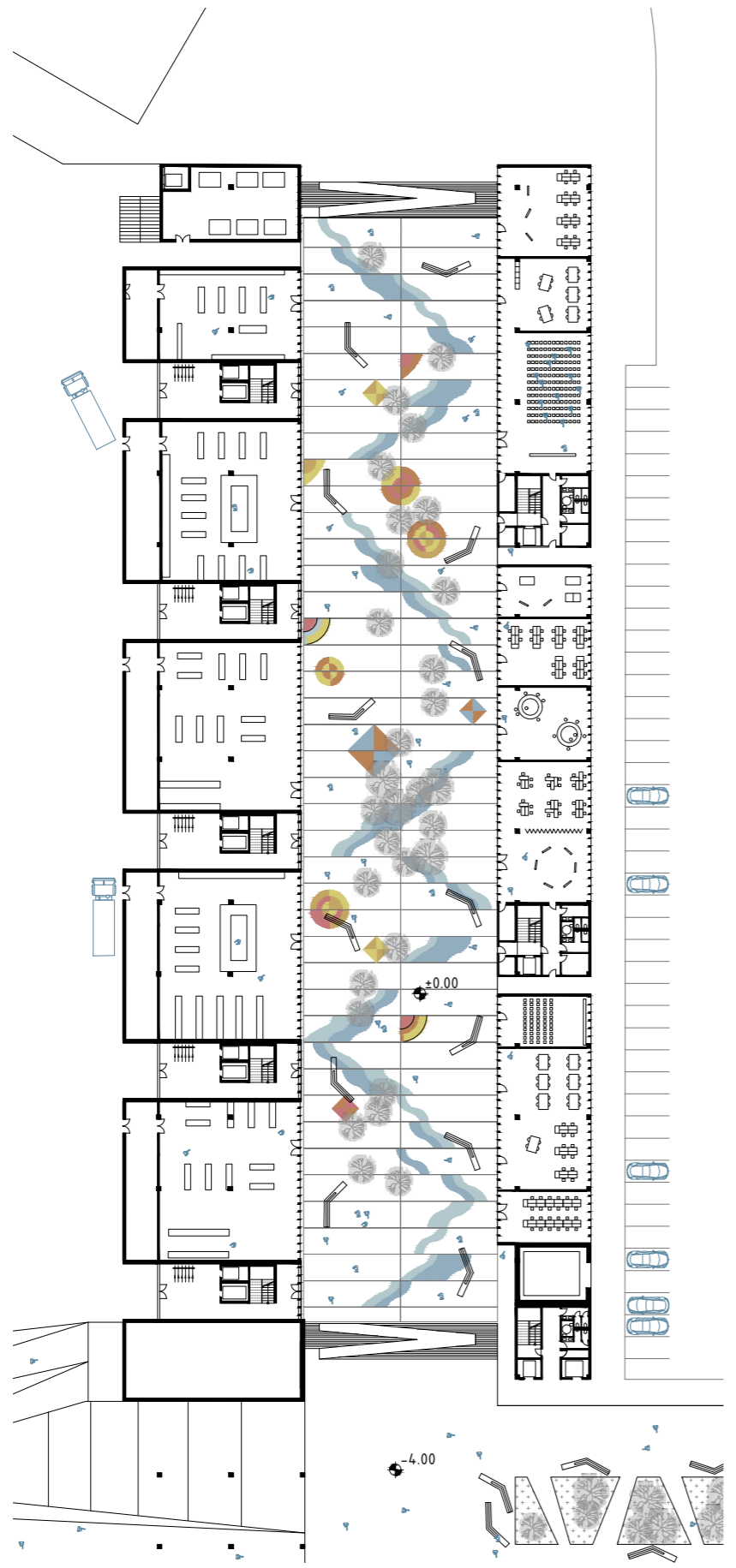
The first phase of the project includes tearing down the smaller buildings opposite the large residential panel house on Blagoevova street which were built 30 years after the panel house. Nowadays, two of them are office buildings and one of them accommodates a casino which disturbs the residents in the area.



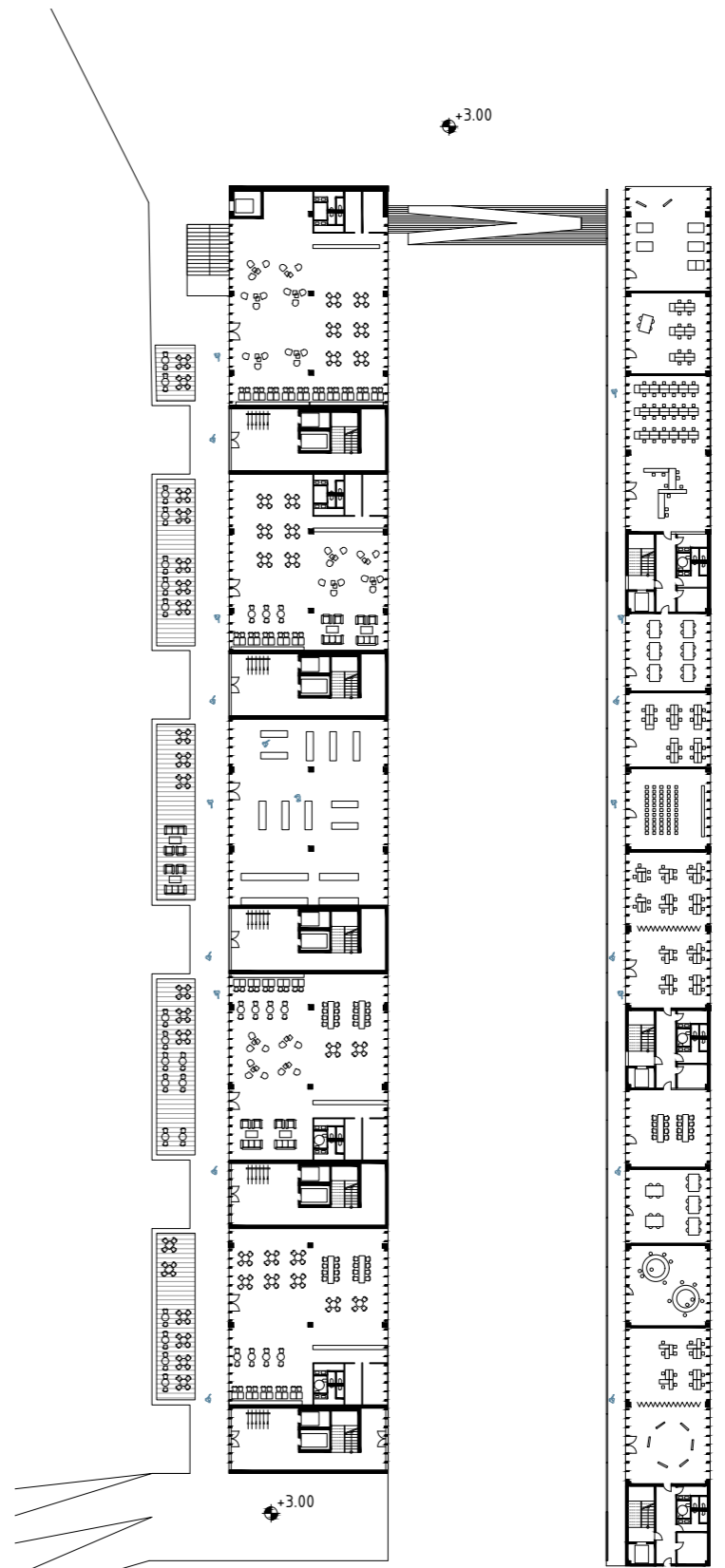
The main idea of this part of the concept is to create a new building on the same level as the public facility which consists two floors on each side of the new promenade.



The new promenade defines the area between the buildings and connects it with the passage perpendicularly.



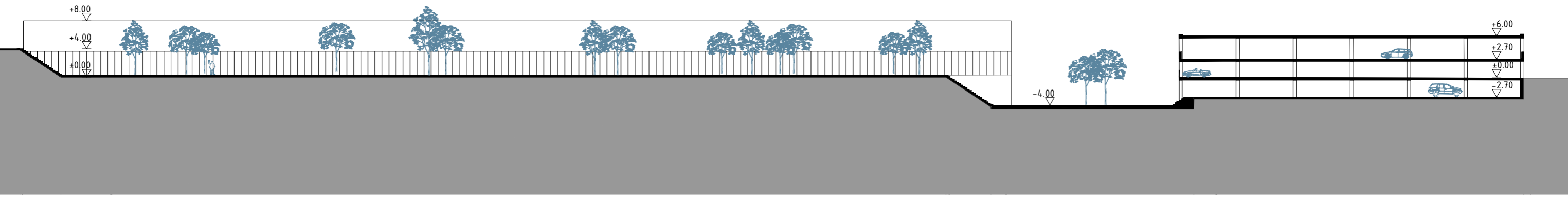
Ground Floor plan of the Office building 1:500



Second Floor plan of the Office building 1:500

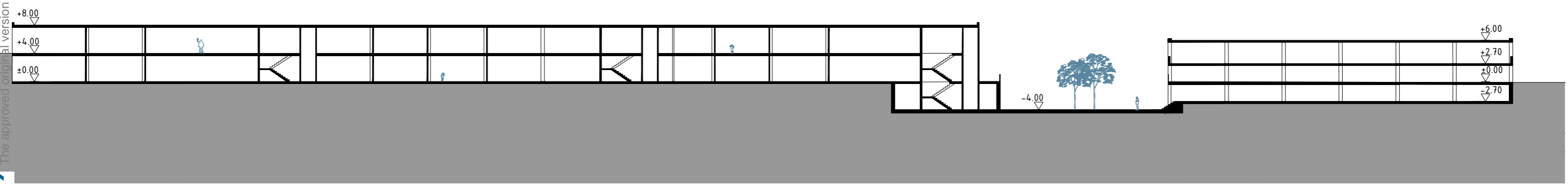
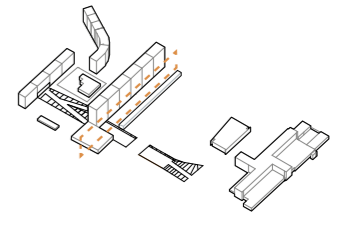


Perspective view of the terrace located on the second floor



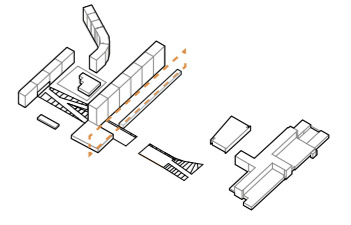
View of the Office building

1:500



Section of the Office building

1:500





Perspective view of the promenade

# DESIGN INSPIRATION



Fig.95  
View from the top of the passage



Fig.96  
Lowest level

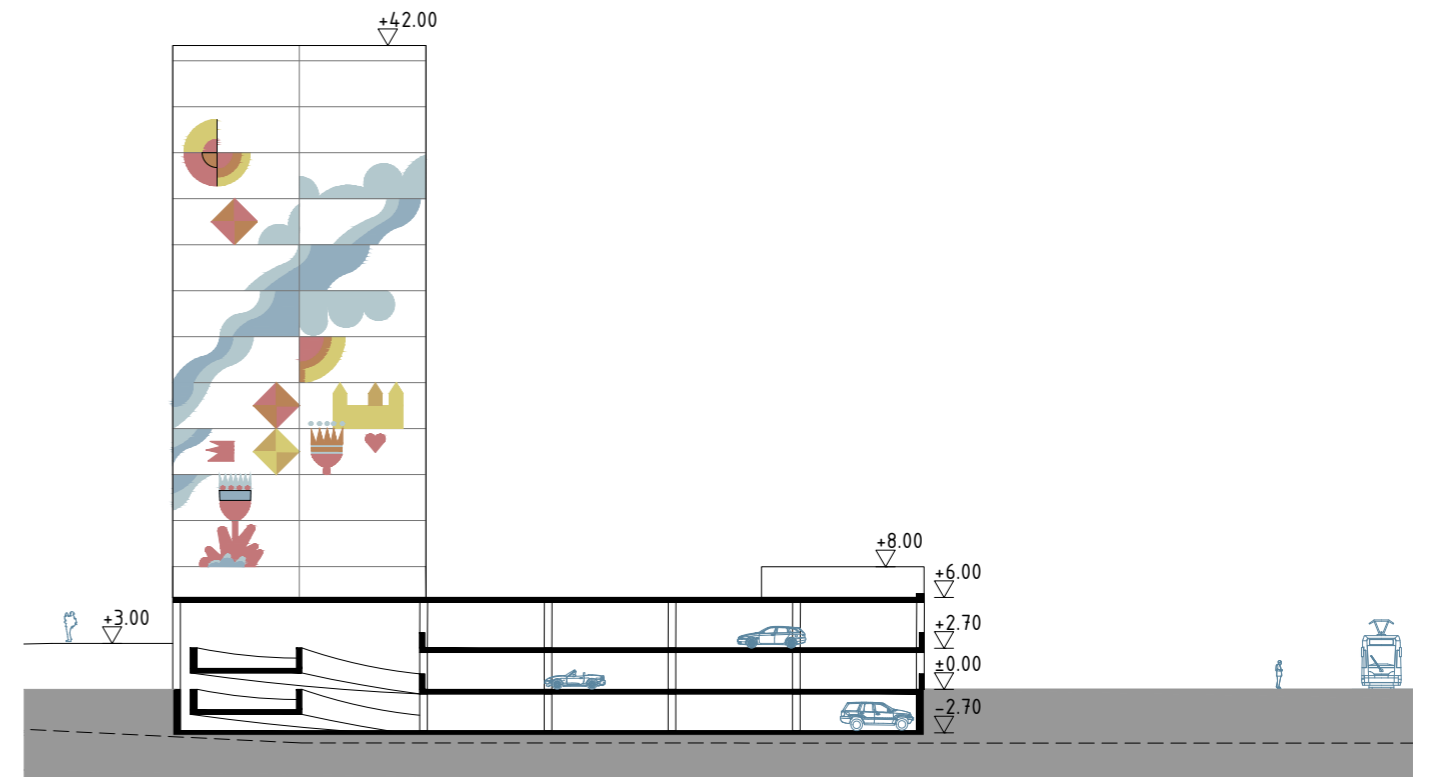


Fig.97  
Aerial view

For the facade of the new co-working office building I was aiming for a very minimalist look which would nicely compliment the original facade of the panel-house. The idea came from Metro Architects and their science building in Sao Paulo - Technological Institute of Aeronautics. Building inspired by Oscar Neimayer has see-through white facades for enough light to reach the office rooms.

The sides of the building are clear concrete walls that harmonise well with the surrounding panel houses. The picture show the science building in Sao Paulo - Technological Institute of Aeronautics from the side.

These stairs combined with a wheelchair ramp can be found in the transition area between the passage and the promenade. The inspiration comes from the Robson Square in Vancouver, Canada. It shows an interesting way of how to improve the otherwise simple and uninteresting aesthetics using various geometric elements.



View of the revitalised facade on the Blagoeva street

1:500

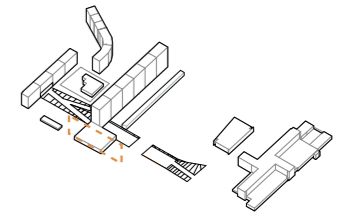


Fig.98  
Old vs New facade

The main motive depicted on the side wall of the panel house is an original artwork which had been painted on multiple houses across Petržalka, using different patterns in order to improve the orientation in the settlement. Unfortunately, during the isolation works, the original motives have been covered and thus destroyed. A recent initiative tries to restore these artworks by painting them on their original locations again. I have used this motive as the main inspiration for the landscape design of the promenade in order to keep some of the original features of Petržalka preserved.



Fig.99  
International passenger terminal in Yokohama

Inspired by Yokohama International Passenger Terminal from Foreign Office Architects I wanted to create a seamless ramp showing the main direction of the passage. At the same time, it was necessary to design seating areas along the ramps for people to meet with other residents, students to spend their time between lectures, eat their lunch outside, in the summer, chat, relax and enjoy their day.

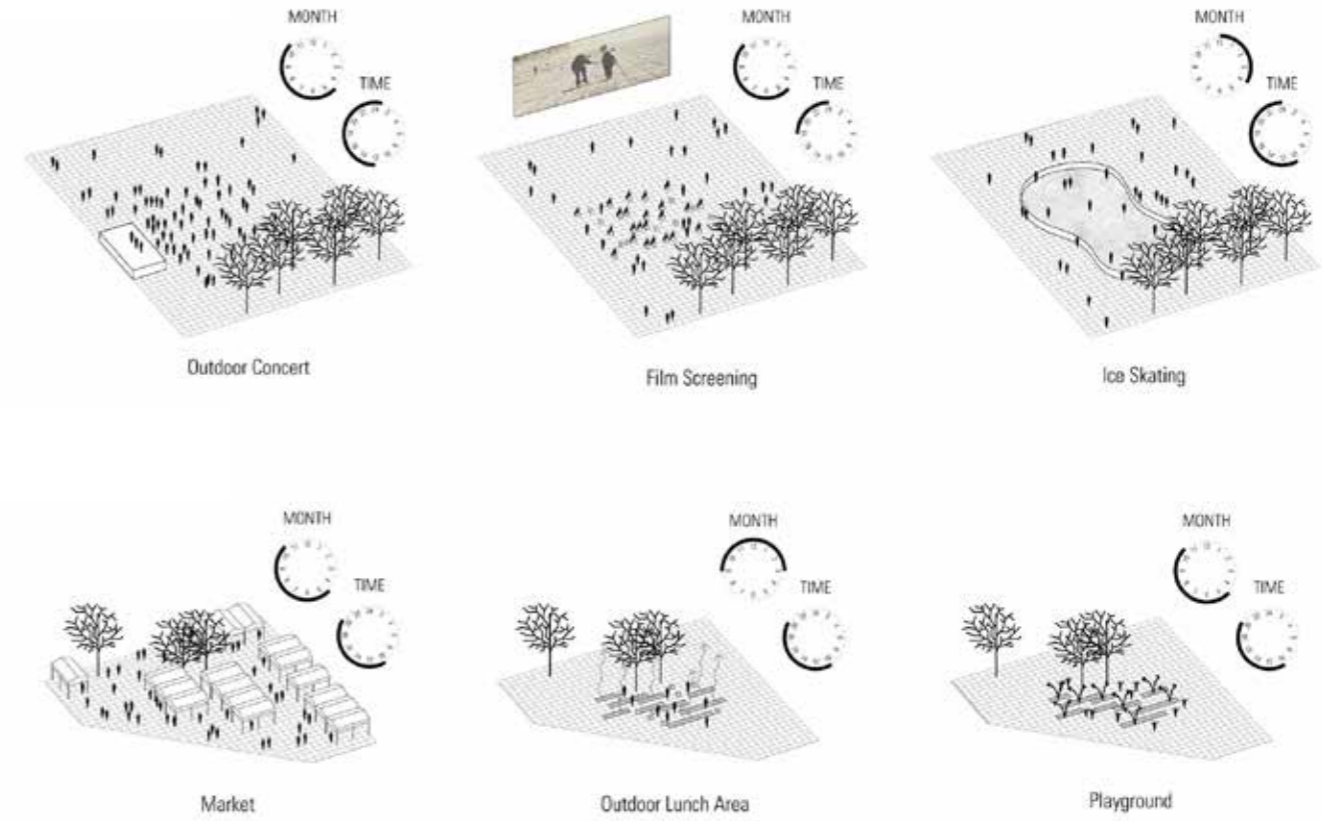


Fig.100  
Op.N for the 'SixtyNine-Seventy, The Spaces Between'

Campus of the University of Economics is widely underutilised, while it has large potential. What inspired as possible solution was competition proposal by Op.N. It introduces multi-use of the open space according to seasons and users of the space - meaning it can be ice skating space in the winter, while being used for film screening in the summer evenings.

## SUMMARY

Ever since its foundation, Petržalka has gone through many different phases. Starting as a small village and gradually getting transformed into one of the largest panel-house settlements in Central Europe, one cannot deny it has come a long way. However, it can sometimes seem that it has remained stuck in the past tense, in the era of the communist regime which gave it much more than the panel-house face. Like any other capital city district though, it needs to show resilience and determination to adapt to the dynamics of the 21st century.

The capital city of Bratislava as a whole has shown some massive progress in terms of architectural, cultural and economic evolution in the last two decades. Petržalka seems to have been one of the least changing parts of it. With its favourable geographic location, being within direct proximity to the Old Town in north, Austria in west and Hungary in south, and its demographics, it seems to meet all the requirements to become a modern dynamic European district.

There are multiple reasons why I decided to dedicate my master thesis to this topic. Apart from the fact that I consider Petržalka being my childhood home and a place I grew up in, it is a place I have been returning to on a regular basis over the time. With each visit, I have recognized the potential Petržalka has to offer and from the architect's perspective, I felt obliged to bring up this topic as maybe of the most promising projects I can think of right now.

I have tried to critically analyse the shortcomings of the current situation in order to be able to propose the best start for a complex makeover. I believe that there are many ways to approach

this and none of them is a wrong one as long as it considers all of the issues that Petržalka is facing nowadays. I have reviewed many of the prospective projects that only consider expansion in size, beyond the district's current borders or only tackle the issue of increasing housing demand by building up additional housing units. Nevertheless, there are other challenges that remain intact as they impose too much risk on the developer's interests.

My goal was to revitalise Petržalka as a whole, without focusing on creating one artificial centre of the district. Instead, I tried to divide it into equally important subcentres and create a connection which would link the parts together on an infrastructural level and thus enable an equal development. It was natural to start with the makeover in the immediate vicinity of the University of Economics, not only because it is a really interesting area to work with but also due to its proximity to the two of the Bratislava's busiest bridges that connect the district with the rest of the capital.

In the end, I believe that my proposal could become an effective start such a complex makeover, with the tram line giving the outline of areas that could follow this trend. Having elaborated on one particular area, I tried to decompose the problem into smaller parts and focus fully on one area in order to better express my vision of how the potential of Petržalka could be further exploited. I believe that by the introduction of the new tram connection linking all of the subcentres together, we can ease the burden of the increasing traffic problems and also reactivate the inferior parts of the district, by attracting visitors and businesses.



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