

# STRUCTURING POROSITY

Developing strategies for the adaptive reuse of  
the Great Strahov Stadium



**Sherin Sunny Varikkatt**  
Master Thesis || Summer 2019  
ARCHIP



# Contents

i	Prelude
1.0	Abstract
2.0	Introduction
2.1	The Strahov Stadium
2.2	Project Statement
3.0	The Site and Background
3.1	Site Location
3.2	Site Boundary
3.3	Historic Overview -Events
3.4	Historic Overview -Stadium
4.0	Analysis
4.1	Morphology
4.2	Perceptual & Visual Aspects
4.3	Transportation and Accessibility
4.4	Functions
4.5	Topography
4.6	Landscape
4.7	Volumetric Study
4.8	Current Land-use
4.9	Future Metropolitan Plan
4.10	Analysis Inference
5.0	Examples of Adaptive Reuse of Sporting Facilities
5.1	Adaptive Reuse of Ancient Arenas
5.2	Adaptive Reuse of Modern Stadiums
6.0	Reference Projects
6.1	A Simple Heart
6.2	Stop City
6.3	City walls
6.4	Superquadras of Brasilia
7.0	Project
7.1	Development Strategy & Methodology
7.2	Project Brief
7.3	Design Project
7.4	Technical Report
7.5	Development Stages
8.0	Conclusion

## i. Prelude

The city thrives and grows on the demand for better urban life. The city came to existence as a necessity of society, and it represents a physical fact of social activities, within which the complex processes of “collective drama” are taking place (Mumford, 2010). Various demands of the city are addressed by creating new urban centers, expanding the urban limits or by regenerating underused areas or structures within the city.

In a contemporary context ideal cities are required to be walkable and lively. Polycentricity is ideal with neighbourhoods of appropriate sizes, with their own character, spatial identity and diverse functions. Ideally, streets shall be hierarchical with main streets having a plethora of activities which shall keep them active, people friendly and safe. These neighbourhoods shall have adequate public transport service.

Strahov is a region in the city of Prague with a unique urban character and grain. The region is identified by one of the largest stadium in the world, the Great Strahov Stadium, which covers approximately 12 hectares. The structure is rooted in the cultural history of the City of Prague. Yet this stadium has been deemed non-functional since early 1990s and the region itself is underused with minimal urban density. The stadium has lived almost a century as a closed frame (the mass) and a field functioning as a spectator arena. There is no viable spectator event that is capable of filling the stands of the stadium anymore, neither is the stadium capable of hosting such events unless it is revamped completely.

According to Rossi (1984), “In almost all the European cities there are large palaces, building complexes, or agglomerations that constitute whole pieces of the city and whose function now is no longer the original one.” He says one is struck by the multiplicity of functions a building can hold over time which are not entirely dependent on its form. We live with its form and experience it and it structures the city.

Strahov stadium is the image and the identity of the Strahov neighbourhood. Time has come to adapt it to a contemporary use which will live longer retaining its individuality, by being a catalyst for a new spatial identity of the area.

This thesis aims at proposing a re-purposing vision for the stadium as well as its neighbourhood. It comprises a master plan for the area which focuses on creating a self-sustainable urban neighbourhood along with an architectural design which proposes how various functions can be integrated into the old structure adapting to the contemporary needs and demands of the City of Prague.



## 1.0 Abstract

Standing atop the Petrin hill  
on the Strahov plain  
is this impermeable giant structure.  
If the concrete walls could speak,  
they would have whispered  
the stories of Sokol games and Spartakids for it beholds the  
rhythm of these synchronised sports  
forgotten in time.  
A colossal mass, perhaps solid though the structure is  
regimented and rhythmic,  
with a surface that is dull and decaying.  
In the state of despair,  
yearning for attention,  
it waits for a destiny  
unknown to anybody.



## 2.1 Introduction

### The Strahov Stadium

The Strahov stadium is one of the largest brownfields in the city of Prague. This giant mass once hosted synchronised sporting events such as sokol games and spartakiads and it extends over an area of 400m x 300m. The concrete structure is in a state of decay and has been left unattended. Owing to the fact that it is too big for any contemporary sports usage, the city is yet to decide on a clear vision for its future. Despite being listed as a cultural monument, the Strahov Stadium has not seen any repair or maintenance over the years. The pitch is being used by AC Sparta prague as a grassroots football training ground. A part of the stadium is used for swimming training and a gymnasium. The stands are not in usable condition.





## 2.2 Thesis Statement

This thesis focuses on studying the current condition of the Strahov Stadium and its immediate surroundings. It demonstrates a possible option proposing a viable contemporary use within the stadium and its surroundings. The stadium has not seen any interventions for the past two decades for reasons which are both economic and political.

The proposal is arrived through studies of history, context and the current state of the stadium. Additionally, various similar examples are examined to understand how spectator arenas could be converted to alternative usage. A development strategy is formulated for the area and culminates in the proposal 'Structuring Porosity'.



## 3.1 The Site

### Location: Petrin Hill, Prague 6, Czech Republic

Petrin is a hill which rises 130m above the west bank of the River Vlatava. It is almost entirely covered with parks and other recreational facilities. The Stadium is located atop Petrin hill which overlooks the city of Prague from the Strahov plain. The plain extends between The Old City wall on the East and Landronka Park on the West. The Stadium is cut off from the city because of the topography of the hill, though it is close to the old city quarters and it is accessible by road.



The Strahov region is mostly dedicated to sports. Close-by are the Rosicky Stadium, Athletic Hall, and Army training yard and various other recreational and sports activities. Additionally it also houses the Kolej Strahov, the student residences.

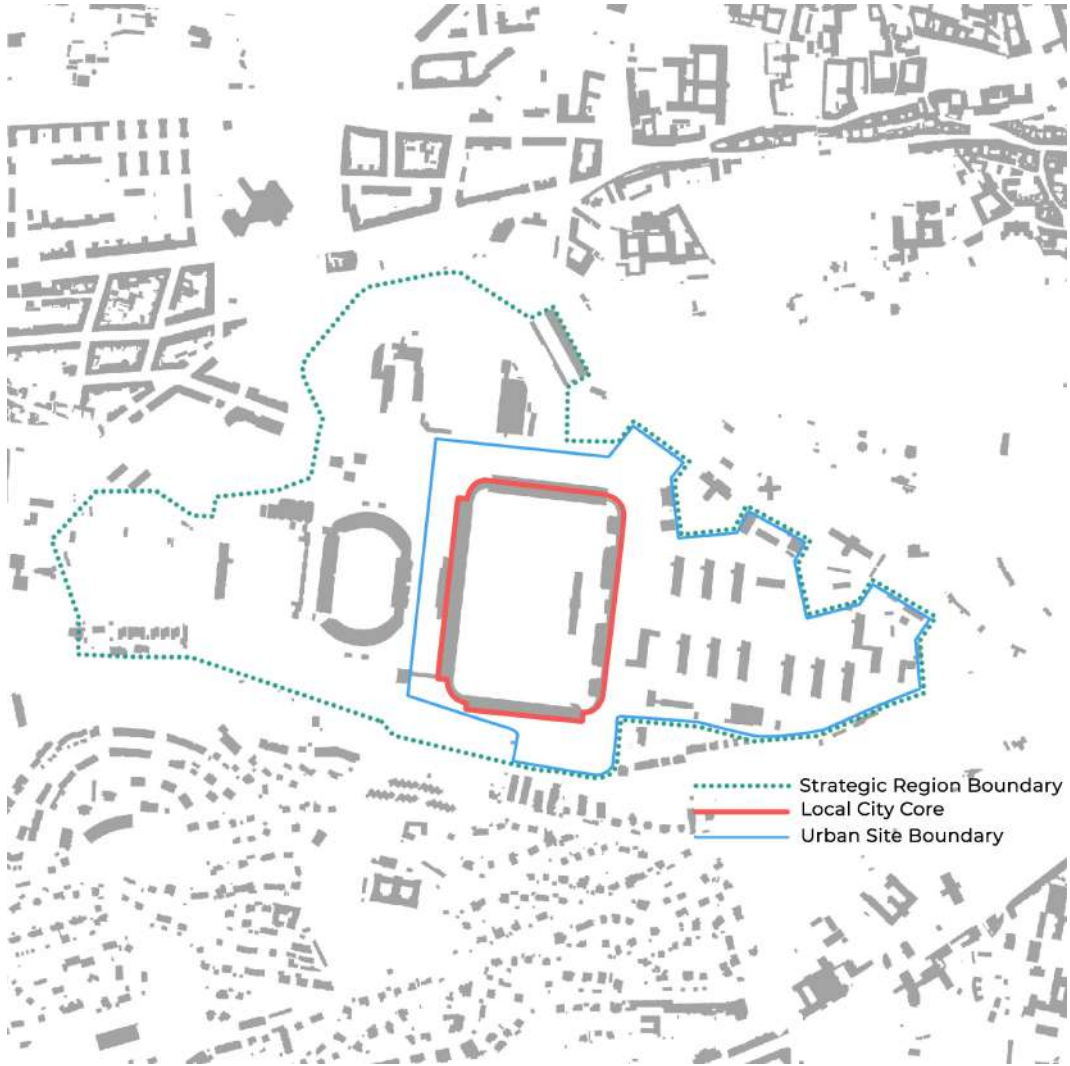


## 3.2 Site Boundary

As the project focuses on developing strategies for adaptive reuse of the stadium and creating a unique city within the playfield of the stadium and its immediate context, the site boundary is set as three types:

1. Urban Strategic Region Boundary- The developments of this area shall have its influence for the region as a whole.
2. Urban Site boundary- These are areas in the direct vicinity of the stadium block which need improvement in terms of functions and visual quality.
3. The Local City Core- This is the stadium block itself and its interiors.





### 3.3 Historic Overview- Events

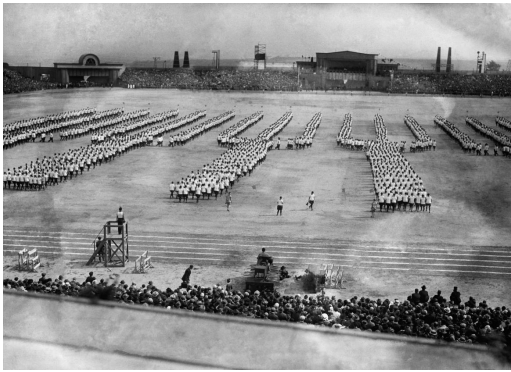
Since its construction in 1926, during the period of the First (Czechoslovak) Republic, The Strahov Stadium served as a venue for Sokol displays; a massive synchronized gymnastics event. Several Sokol festivals and other public appearances were held in Strahov before World War II, and the largest attendance was recorded as 250,000 in 1938

During the Second World War, the stadium underwent a dark period of its history as it was used by the Nazis to gather the Jews who were assembled in the stadium before transporting them to the concentration camps. In 1939, a festive show of German troops was held on the occasion of the 50th birthday of Adolf Hitler in the stadium. After the war, the Prague Germans were gathered in the stadium before being expelled back to Germany.

Post-war, the sporting events returned to the stadium. The Sokol games were renamed Spartakiads during the Communist era, and it was held every five-years from 1955-1985, with the exception of the year 1970.

Motor racing also was held in the stadium in the mid-1960s. The last Spartakiad was held here in 1985. After the Communist era, the stadium saw gigantic music concerts of western bands, namely Rolling stones in 1990, and Pink Floyd in 1994.

At the beginning of the 21st century there was a plan to demolish the stadium, but it was decided to retain the stadium. It was later listed as a cultural building in 2003. With the financial support of the City of Prague, eight football fields were installed and they are now being used as a training centre of Football club AC Sparta. In 2014, the complicated property relations of the stadium were resolved and it is presently owned by the city.



1927 Sokol



1938 Sokol



1938 Russian Festival



1939 German Parade



1955 First Spartakiad



1960S Speed Track



1985 Spartakiad



1990 Concert

### 3.4 Historic Overview-Strahov Stadium

The Strahov region functioned as a marlstone quarry, until the end of the 19th century (fig.1). The early Sokol sessions took place in the years 1895 to 1920 on the Letna plain. A temporary accommodation camp was built in Strahov area in the 1920s (fig.2).

The first plan for the stadium came up in 1926 designed by architect Alois Dryák (fig.3) and was called Masaryk Stadium. It had partially wooden stands and a rammed clay stand serving as tribunes. They were able to hold 130,000 spectators. The first form of the stadium was linear. In the 1929 plan (No. 4) the stadium is already known as the Sokol stadium. For the next All Slavic Fest in 1932 it was partly rebuilt. At the beginning of the 1930s, the stadium of Eugene Rošického, then known as the Civic Stadium (fig. 5), was built next to the Strahov stadium. The student residences were also built during this time. In 1938, a monumental western tribune and two six-story towers were added(fig.6).

The Strahov stadium was further modified in the 50s and 70s. Below the eastern tribune, a swimming pool and a gymnasium was built.

In the area, new student residences were built in the mid-1960s, for the accommodation of the trainees. For transportation in the early periods two tram-lines of Dlabáčov and Královka were built on Bělohorská Street in the North. From the south side, trolley buses and buses from Smíchov used to service passengers to the stadium.

Since the turn of the millennium, the region and the stadium did not see any major developments though there were several proposals to improve the area.



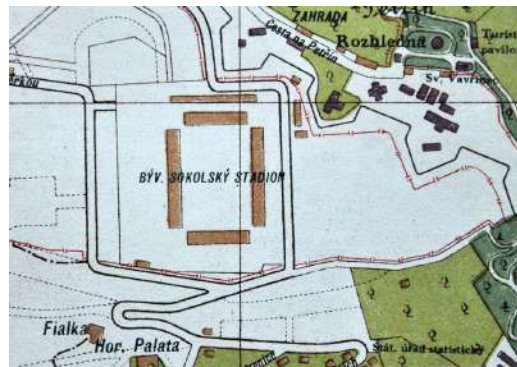
1. 1895, Strahov Marlstone quarry



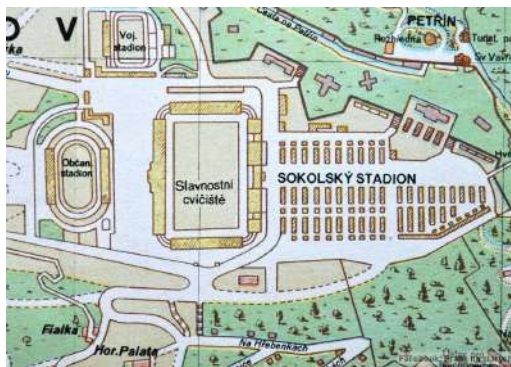
2. 1920, Sokol Temporary Accommodation



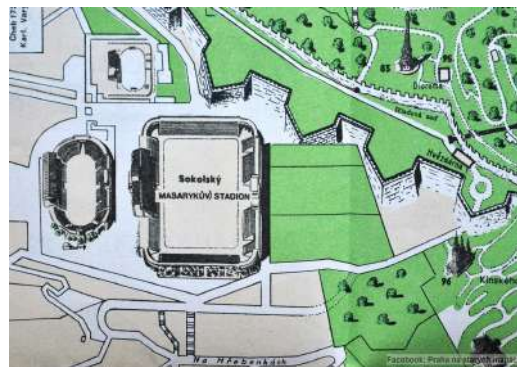
3. 1926, First Plan for Strahov Stadium



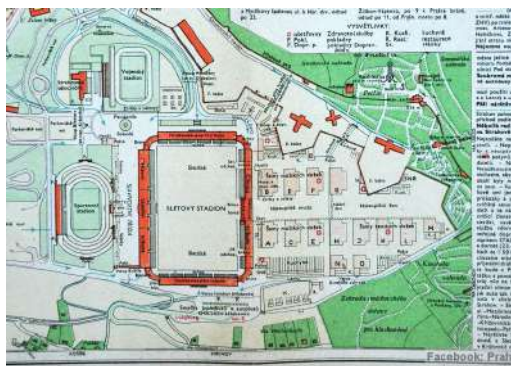
4. 1929, Plan of Wooden Stadium



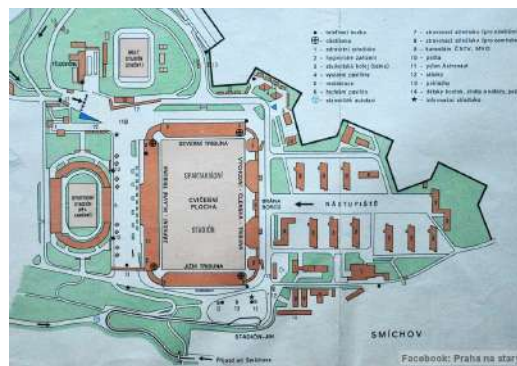
5. 1930s, New Stadium in Concrete



6. 1938, Sokol stadium



7. 1948, Stadium, an all purpose retreat



8. 1965, Spartakiad Stadium



Figure Ground Map 1:10000



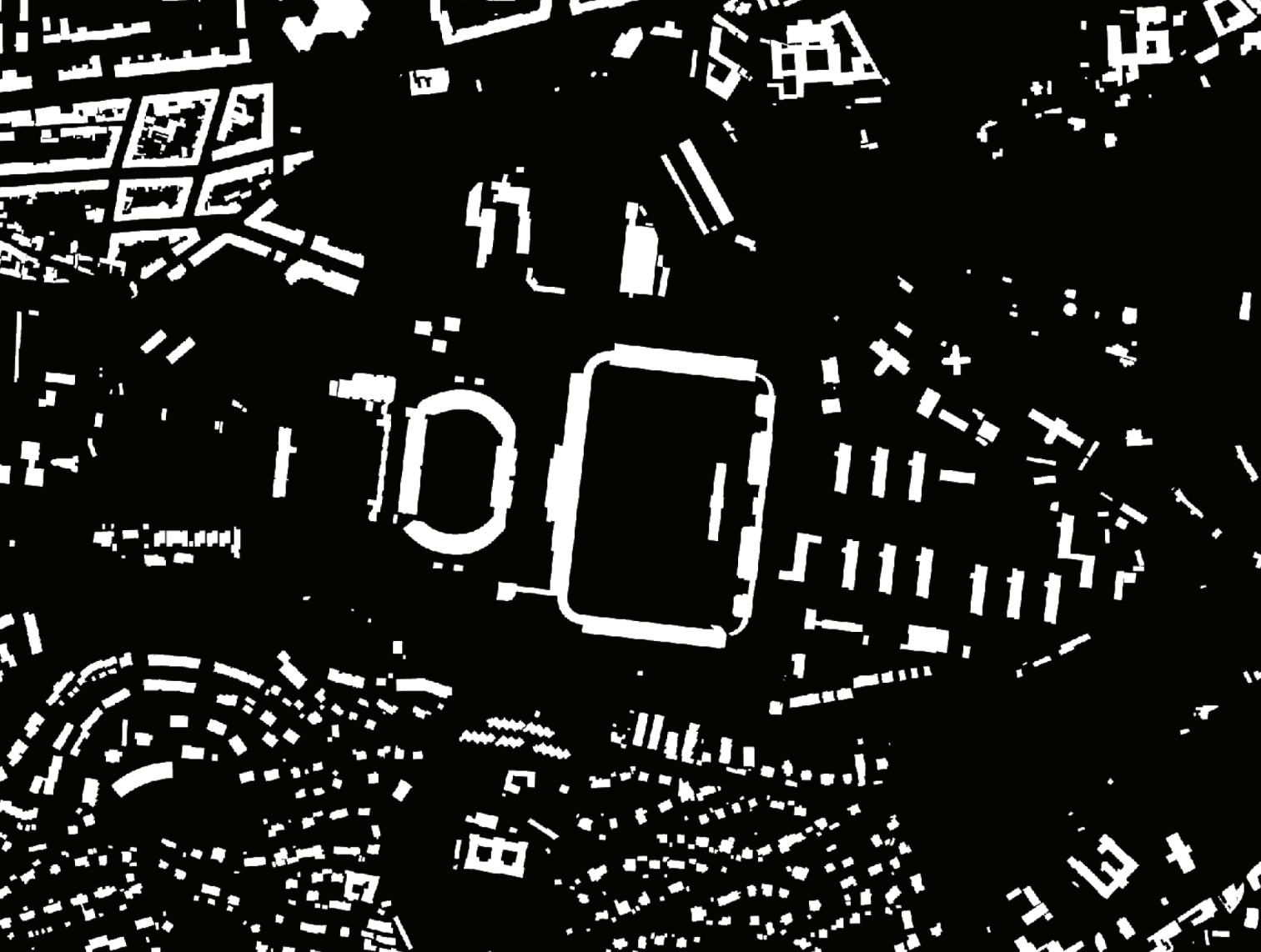
Dejvicka Urban Grain



Letna Urban Grain



Vinohrady Urban Grain



## 4.1 Morphology

The area does not represent the regular city block patterns of the city of Prague and thus the fabric is unique with a lot of open spaces. The Strahov stadium is colossal in scale and stands in a relatively vacant area of Prague 6 on the Petrin hill. Atop of the hill are several sports facility buildings, the Rosicky stadium, Athletic hall and family houses are seen in the west. Dispersed blocks of students residences(Kolej Strahov) are located on the east of the stadium. These are framed by the Old City walls on the north.

The image above shows the large open spaces around the Strahov stadium. This is a result of land-use zoning by the city marking the region as a recreation and open spaces. However this leaves the region with immense potential for future developments and densification.

## 4.2 Perceptual and Visual Aspects

The stadium is perceived as a neglected and crumbling concrete monument. The spaces below the stands form long corridors with rhythmic columns. All the stands are in a terribly dilapidated state and need huge investment to bring them back to life. Though listed as a cultural monument, the stadium has nothing to attract public interest except for its monstrous size. Many parts of the stadium stands are 'home' to the homeless and unattractive graffiti has taken its outlook to an unacceptable low.

The concrete has started to decay, the stands are not usable anymore, and the steel reinforcements have been exposed and have corroded. Visually, the student residences are repetitive and are homogenous in terms of volume and scale. There are large open spaces between those buildings. The boulevard on the east-west axis is wide and extensive, and thus does not seem to belong to the locality. It has been converted into various sports courts. This oversized boulevard has been provisionally appropriated by









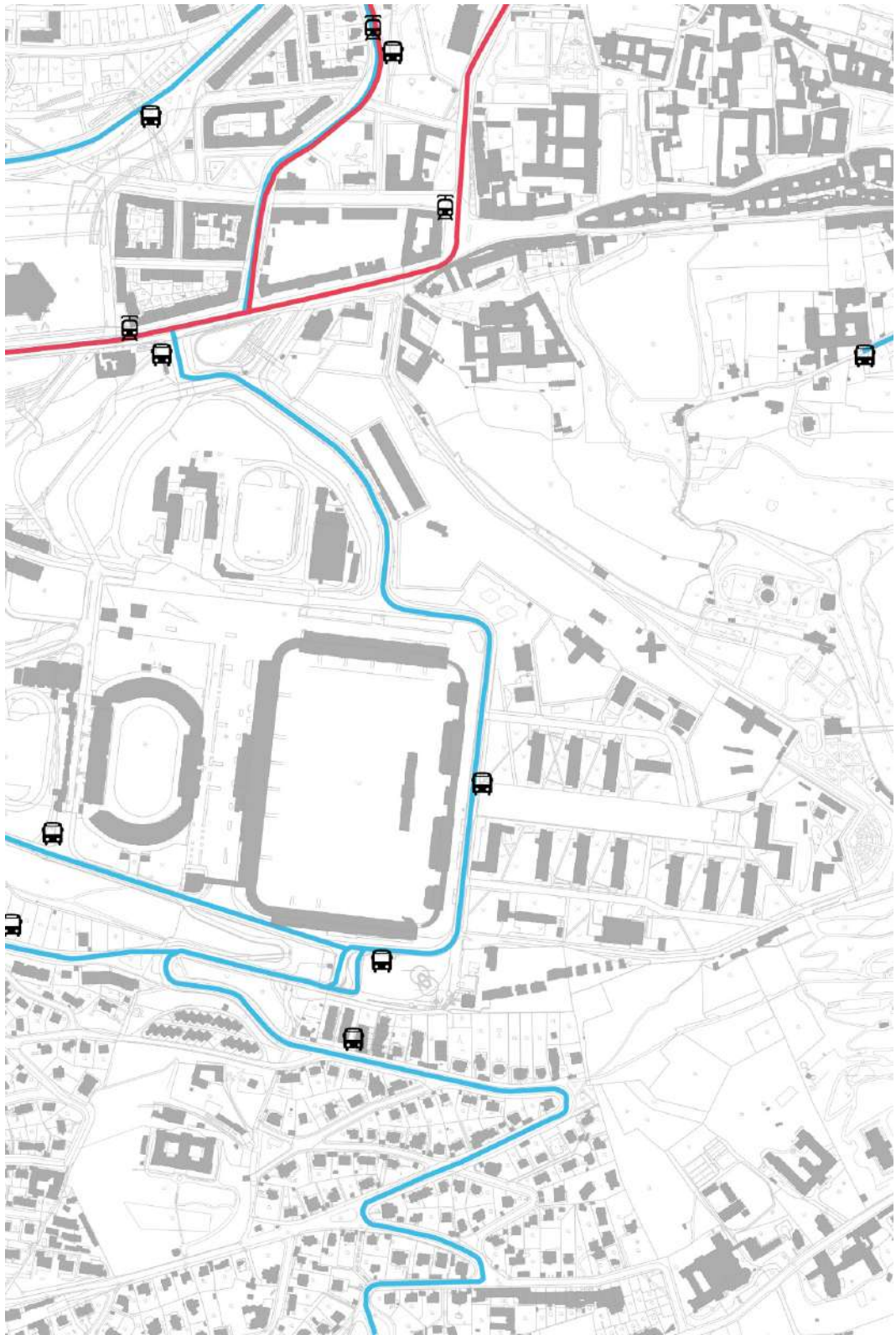




Photographs showing degrading structure of the stadium. Lack of attention has led to irreparable damages at many parts which now need to be reconstructed in order to insert any suitable functions into the stadium structure. Many parts of the stands are subject to heavy leakages during rains and snow.

### 4.3 Transportation & Accessibility

The access to the Strahov plain is by road. The area is serviced by public transport buses. The metropolitan plan has laid out a future tram connection ending with a stop at the Strahov stadium. This will be an added advantage to any future development in the area as it would open the region, including the Ladronka park which is a part of the bio-corridor, for a wider public access. The Plain is well connected with the Ladronka park's in-line skate and bike trail and thus is a popular cycling route. The region also sees runners in plenty.



## 4.4 Functions

While the stadium itself is mainly used as storage spaces and multifunctional spaces, the pitch is used for football training. Other facilities in the building include a swimming pool, gymnasium, catering service and civic bodies such as various sports association offices. It also houses Higher School Czech Union of Sports on the east flank. However most of the parts in the stadium are left unused.

Other buildings on the plain serve sports related functions apart from the student residences( Kolej Strahov) and family houses. A large share of the open spaces are designated as parks and part of this open space is a bio center and bio corridor. On the west is the Ladronka park and on the east is the Petrin Garden along with the Rose Garden.

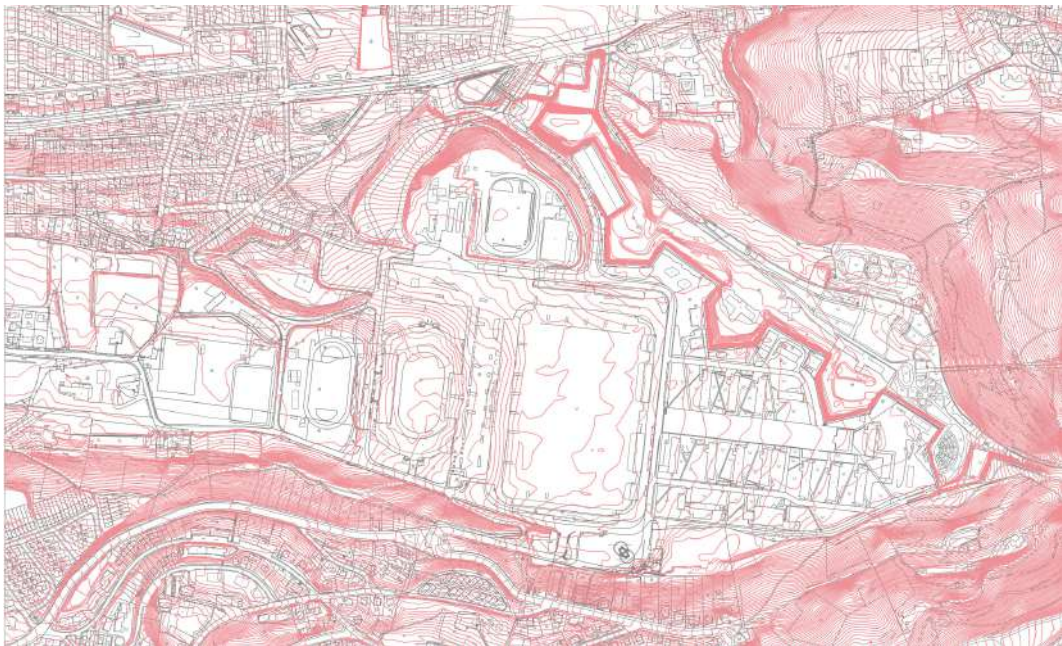
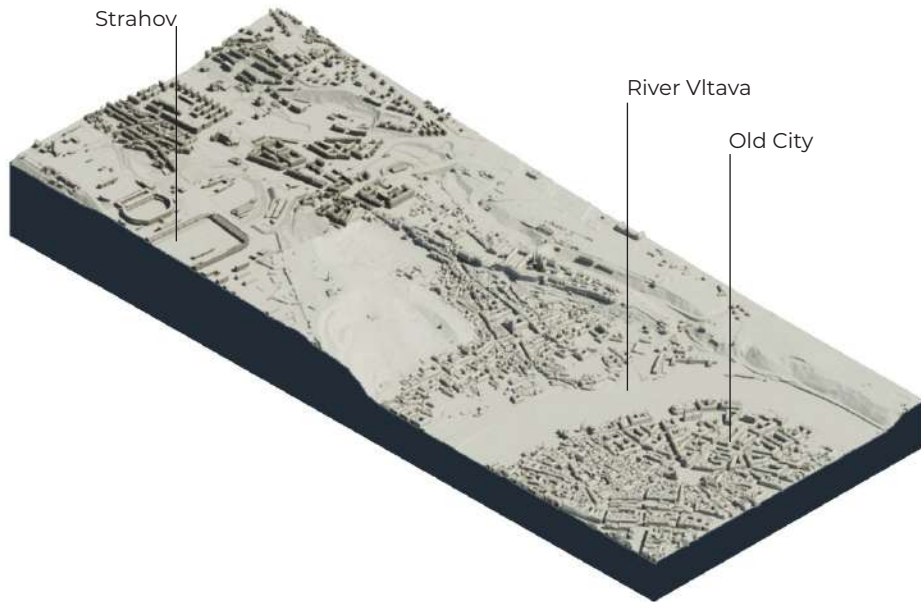




- |   |  |   |
|---|--|---|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #e91e63; border: 1px solid black;"></span> multifunctional civic | <span style="display: inline-block; width: 15px; height: 10px; background-color: #f08080; border: 1px solid black;"></span> municipal services   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #2e8b57; border: 1px solid black;"></span> army                  |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #4682b4; border: 1px solid black;"></span> catering              | <span style="display: inline-block; width: 15px; height: 10px; background-color: #696969; border: 1px solid black;"></span> unused               | <span style="display: inline-block; width: 15px; height: 10px; background-color: #d2b48c; border: 1px solid black;"></span> sports infrastructure |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #a9a9a9; border: 1px solid black;"></span> parking               | <span style="display: inline-block; width: 15px; height: 10px; background-color: #800000; border: 1px solid black;"></span> workshop/warehouse   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #e6e6fa; border: 1px solid black;"></span> shops bazars          |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #ff0000; border: 1px solid black;"></span> residential           | <span style="display: inline-block; width: 15px; height: 10px; background-color: #ffd700; border: 1px solid black;"></span> student accomodation | <span style="display: inline-block; width: 15px; height: 10px; background-color: #f0e68c; border: 1px solid black;"></span> public infrastructure |

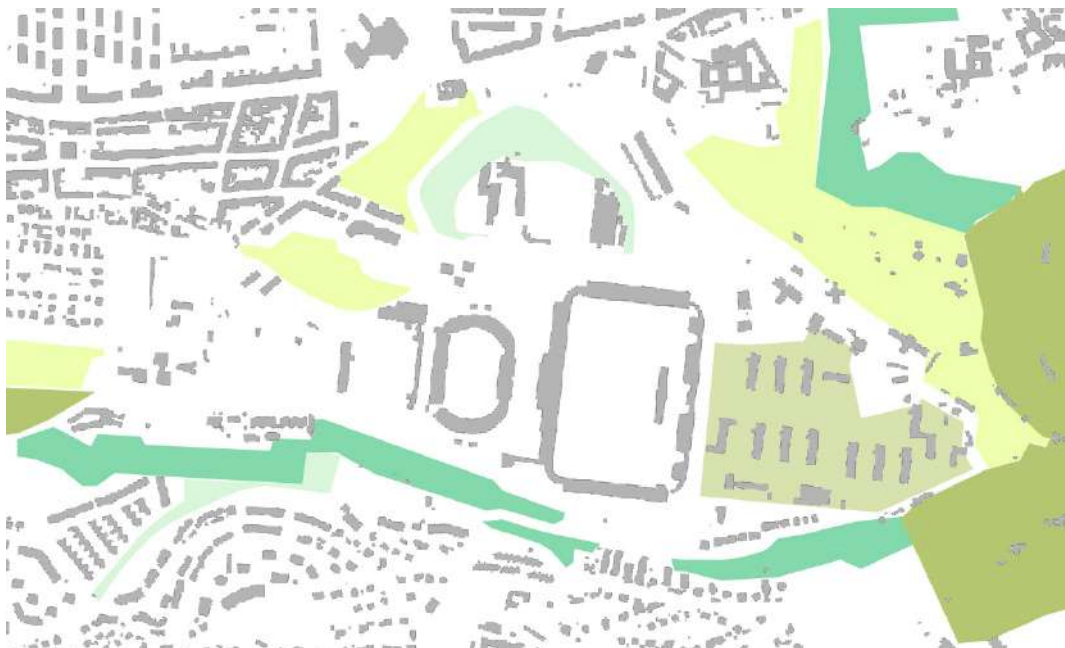
## 4.5 Topography

The Strahov plain is cut off from the city due to its topography. The Plain is on the top of the Petrin hill which is at a height of 327m above sea level and approximately 130m from the bank of the River Vlatava. Though the region is cut off from other parts of the city in the South East and North and thus reducing accessibility, it is well connected to the West through the Landronka Park to Vypich. The west part of the plain, the Ladronka Park is a popular recreation zone.



## 4.6 Landscape

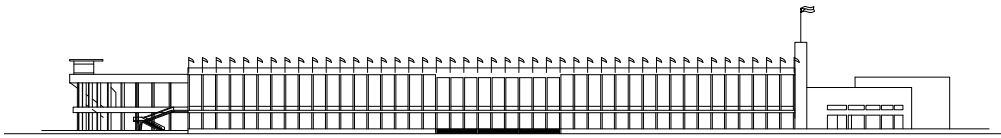
The Strahov plain is a part of the Bio-centre and Bio-corridor. It also has the Ladronka park and other open spaces with plenty of vegetation next to the sports infrastructures. The space next to Old City wall has a lot of trees as a continuation from the Petrin park. This part shall be left open as parks and recreation area for the new development.

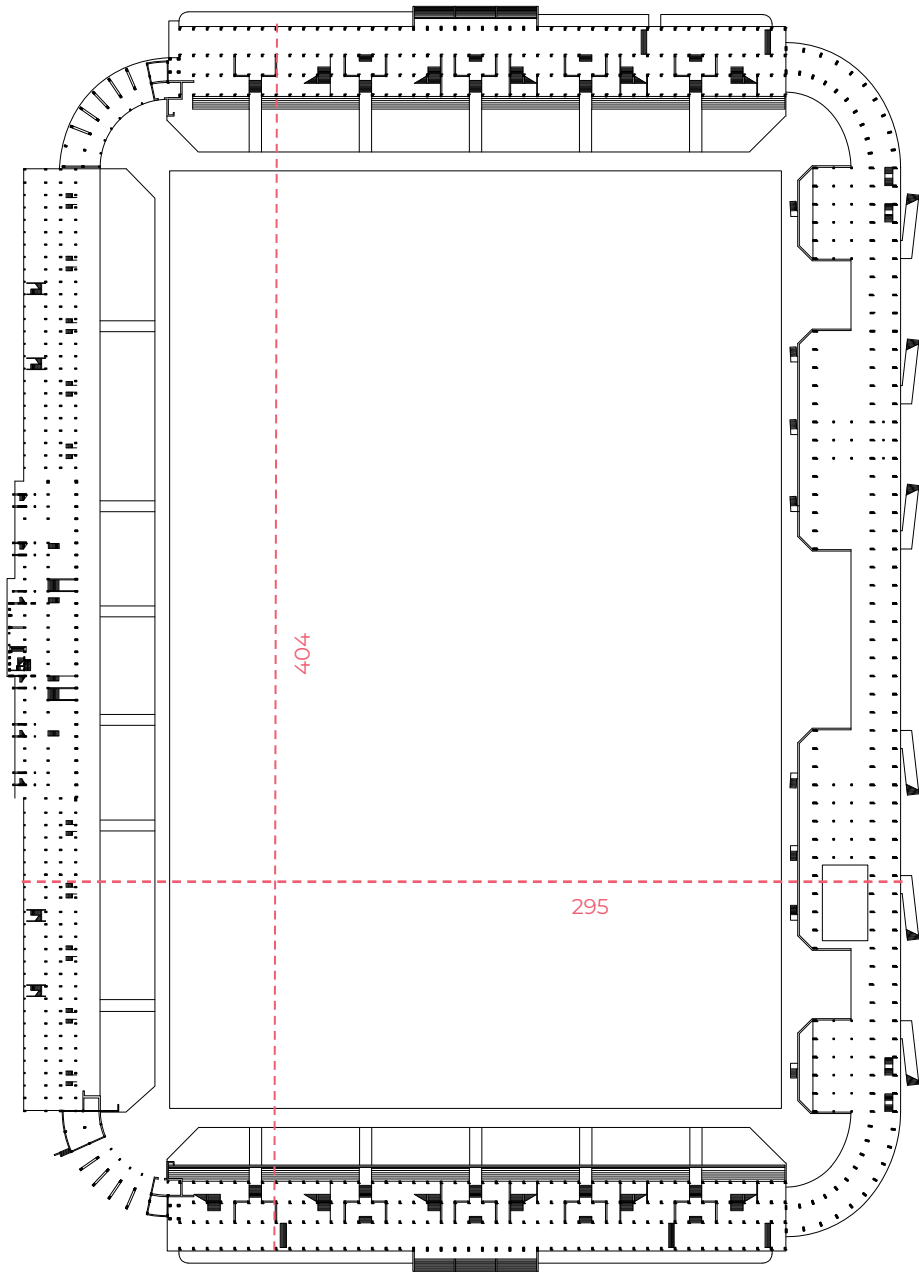


## 4.7 Volumetry

The Stadium is a giant mass measuring 404m x 295m with a maximum height of 23.8m. The Internal pitch measure 310m x 203m which accommodates 8 football training pitches presently. The mass is seen as a huge visual obstacle visually. The student residences are detached blocks spread out on the east side of the stadium. They are 20m tall with a spacing of 35m between them. The partially underused boulevard which runs on the east west axis is 45m wide.

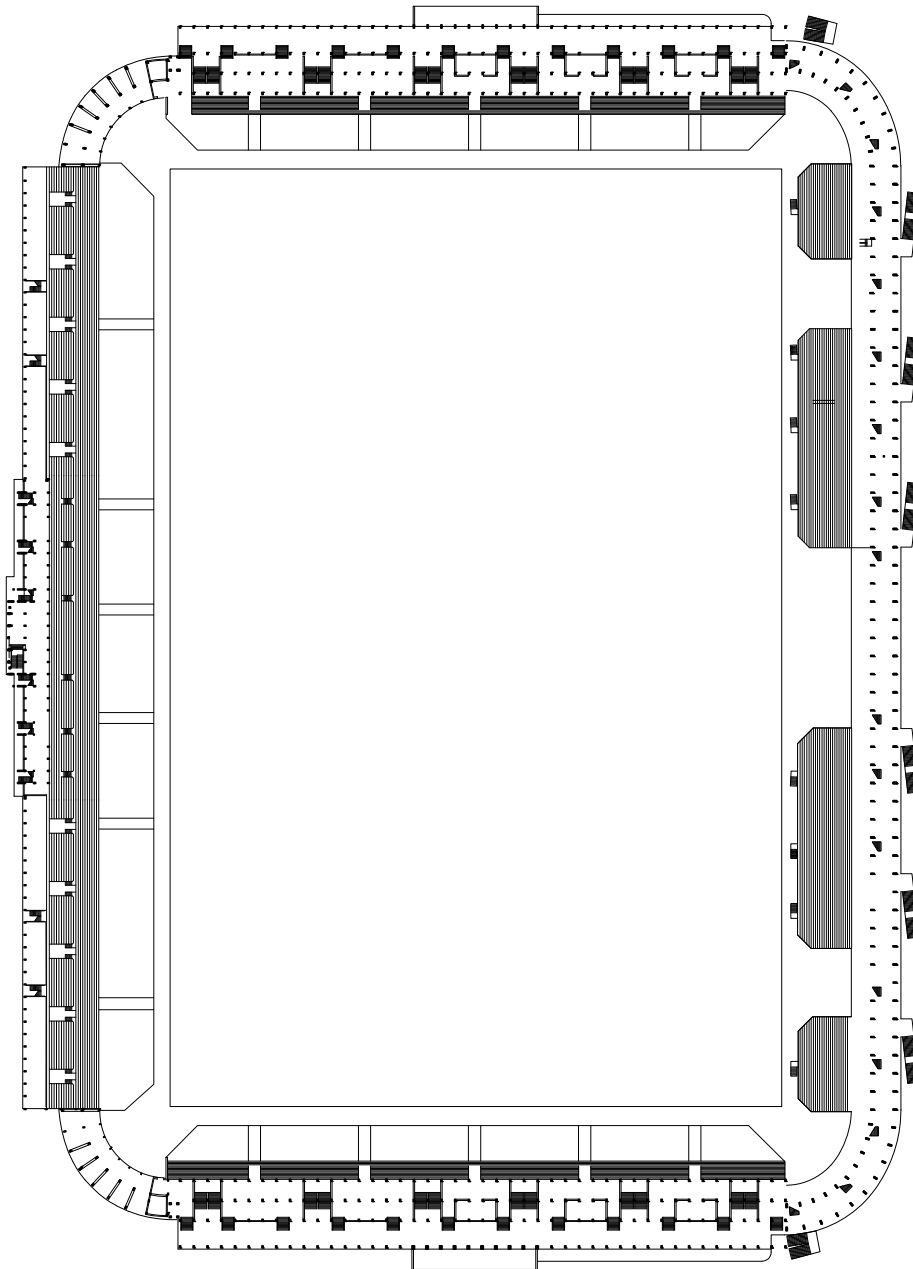
In the stadium the East stand is the tallest measuring 23.8m height, whereas the West stand has a height of 11 m. The north and the south stands varies in height based on the topography. The columns grids varies from 6m in the east stand to 4.55m in south and north stands to 4.1m in the west stand.



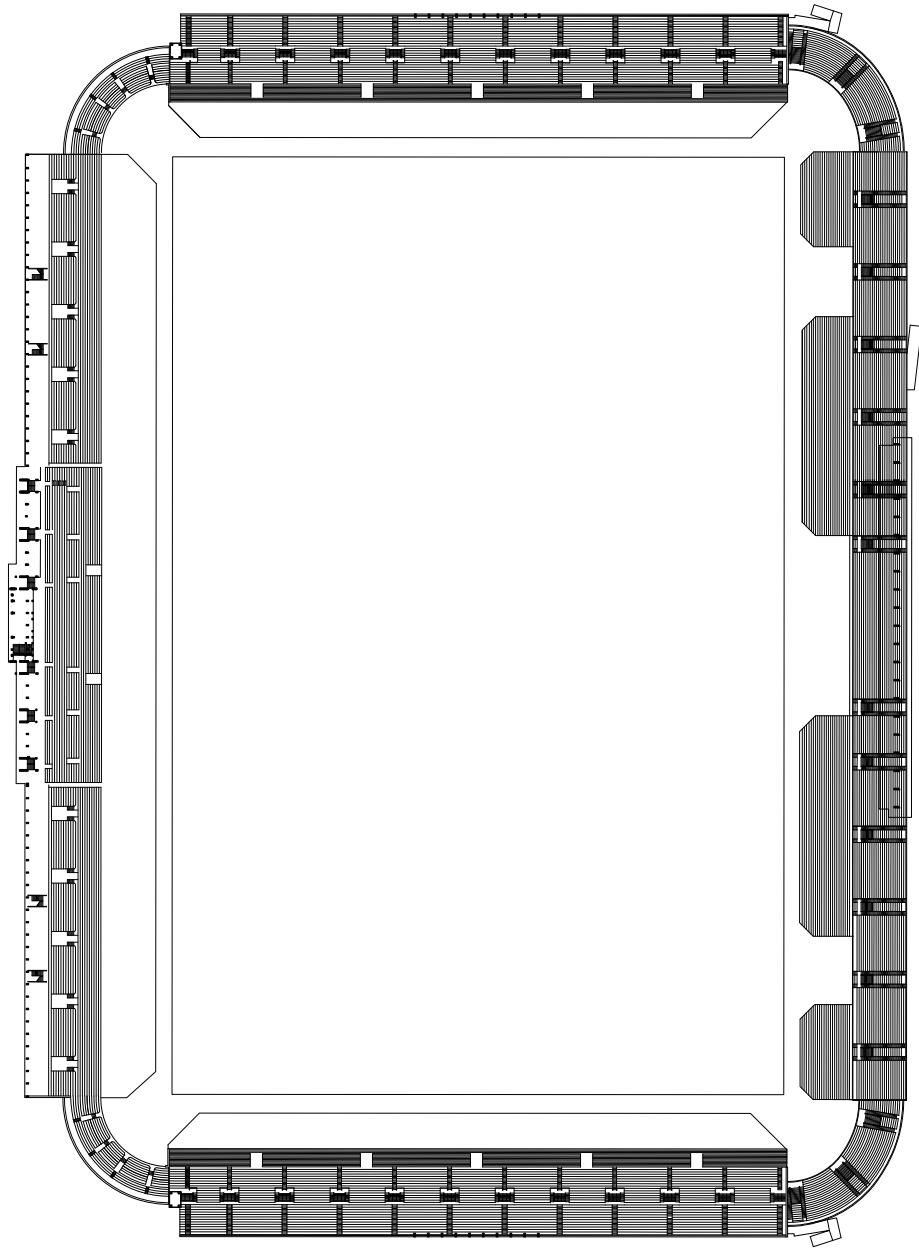


Ground Level Plan

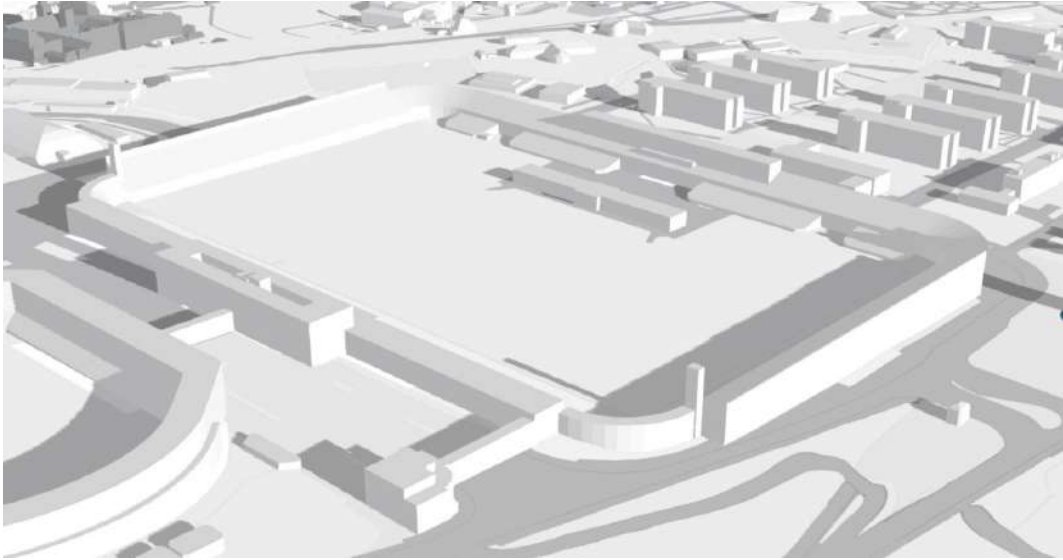




Level 2 Plan



Level 3 Plan



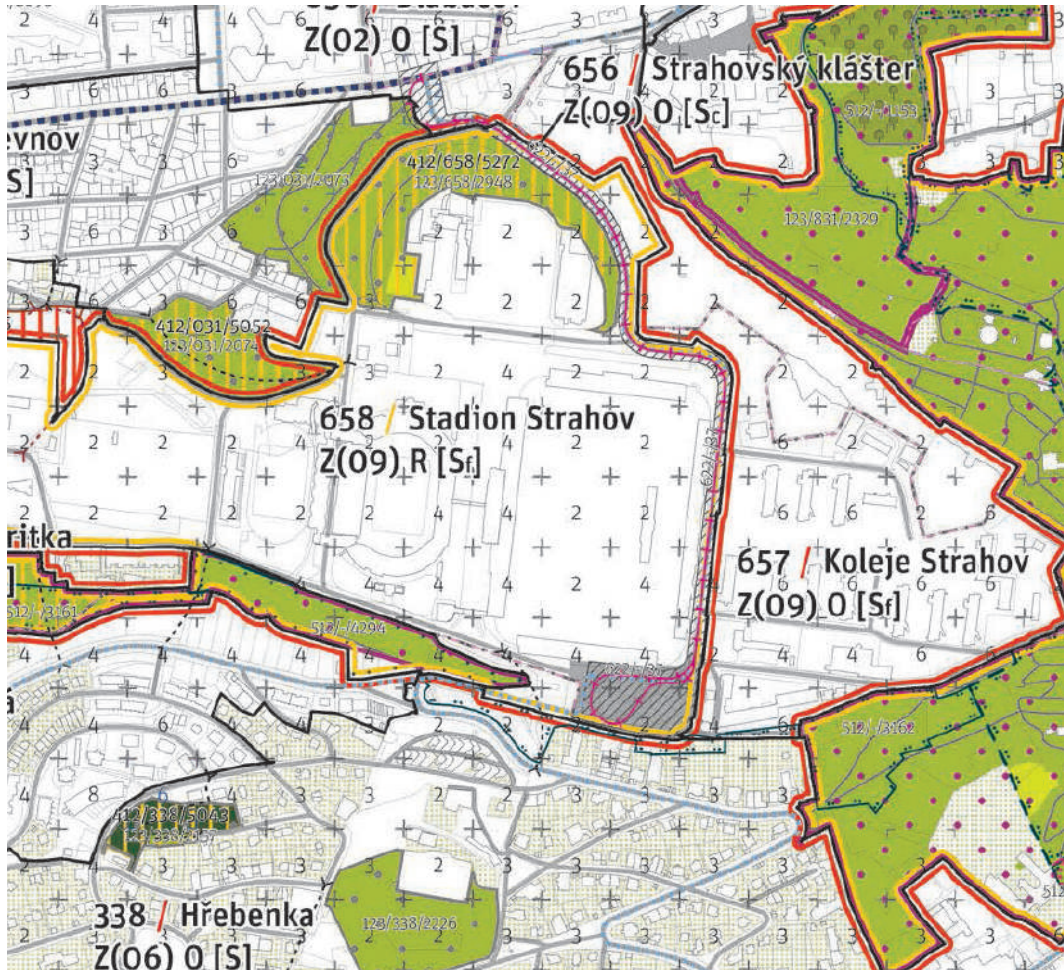
## 4.8 Current Landuse Plan



### Legend

<b>sv</b>	generally mixed use
<b>smj</b>	mixed use urban core
<b>zp</b>	parks
<b>zmk</b>	urban greenery
<b>s0,s1..</b>	roadways
<b>dz</b>	railways
<b>zvo</b>	other
<b>sp</b>	sports & recreation
<b>vv</b>	public amenities
<b>ov</b>	generally residential
<b>ob</b>	purely residential

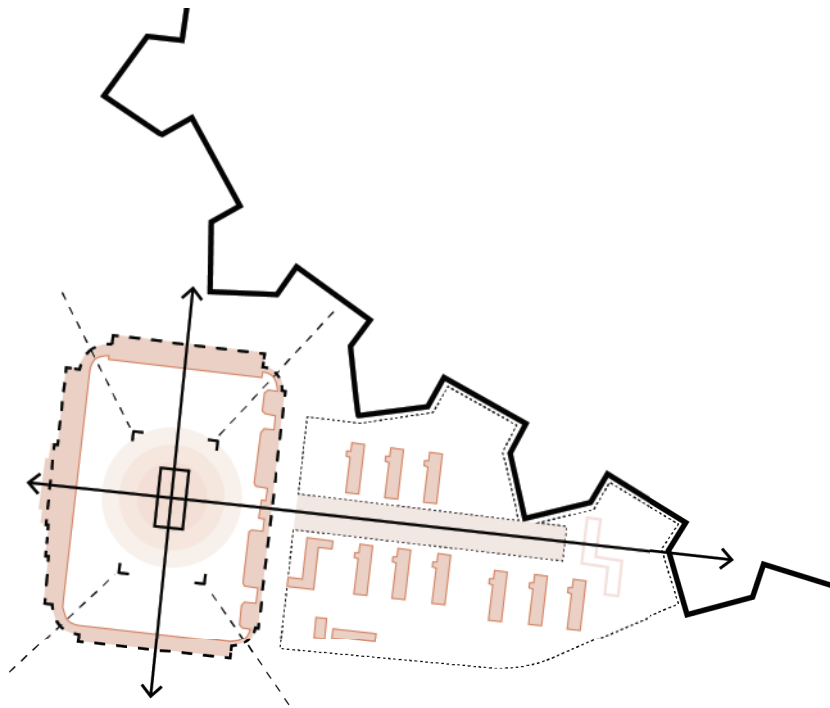
#### 4.9 Future Metropolitan Plan



The proposal for a new tram line up the hill to the current Strahov stadium bus stop is a positive development which shall improve the potential of the site and its surrounding areas. The heights are restricted in the region which aims to prevent a dominant form from rising on the plain. There is no future vision for the interior of the stadium (the field). These height restrictions limit the possibility of connecting a future proposal for the interior of the stadium to new urban structures or developments around the stadium.

## 4.10 Analysis Inference

The stadium is in need of urgent attention to prevent it from further decay. The student residences along with the stadium building are to be retained and re-purposed. The region as a whole is required to be densified as mixed use for it to function as a self sustainable neighbourhood. The Old City wall and abandoned boulevard are strong elements which give a different character to the area. They are required to be re-emphasized. Moreover, re-emphasized east-west and north-south axes would spring life in to the neighbourhood and thus enable it to be more vibrant and livable.



- Core to be densified
- Old City Wall
- Retained Buildings
- Area to be densified
- Building to be Demolished
- Desolate Facade

## 5.1 Examples: Adaptive Reuse of Ancient Arenas

Ancient sports arenas and amphitheaters have seen revival and re-purposing. Arena Di Verona, a 2000 year old amphitheater in Italy (image 1 & 2) is being reused as an Opera theatre in the Summer and there is a plan to add a roof to it which would suit for it being functional in the winter as well. Las Arenas, Barcelona Spain was a bull fighting ring historically and has been converted into a shopping mall, maintaining its structure and architectural form (image 3 & 4). Arles in France is another ancient amphitheater which underwent multiple changes over the years. It was converted into a residential settlement in the 17th century and then brought back to its original state and is now being used as a bull sport arena (image 5 & 6).





Arena di Verona, Italy



Roof proposal Arena di Verona, Italy



Las Arenas, Barcelona Spain



Las Arenas-Shopping center, Barcelona



Arles Amphitheatre before 1825, France



Arles Amphitheatre, France

## 5.2 Examples: Adaptive Reuse of Modern Stadiums

Bush stadium, Indianapolis, USA, was a baseball park from 1931 until 1996. It was used as a speed track for a short while and was abandoned after that. It was then used as a car junkyard until 2010 when it was decided to reconstruct the structure as residential apartments overlooking the park (image 1 & 2).

Similar is the case of Highbury Stadium London, which was home to Arsenal F. C. for 93 years until 2006. Once the club moved to the new emirates stadium it was decided to redevelop the stadium stands as residential apartments with a park in the middle (image 3&4).

One of the largest Pyramid structures in the world, The Great American Pyramid in Tennessee was a basketball arena. It has been repurposed into a Bass Pro Shop in 2015-16 which also houses a museum, restaurants and a hotel (image 5 & 6).



Bush stadium 2009, Indianapolis USA



Bush Stadium stands, Indianapolis USA



Highbury Stadium 2006, London UK



Redevelopment Of Highbury square



The Great American Pyramid, Tennessee



The Great American Pyramid, Tennessee

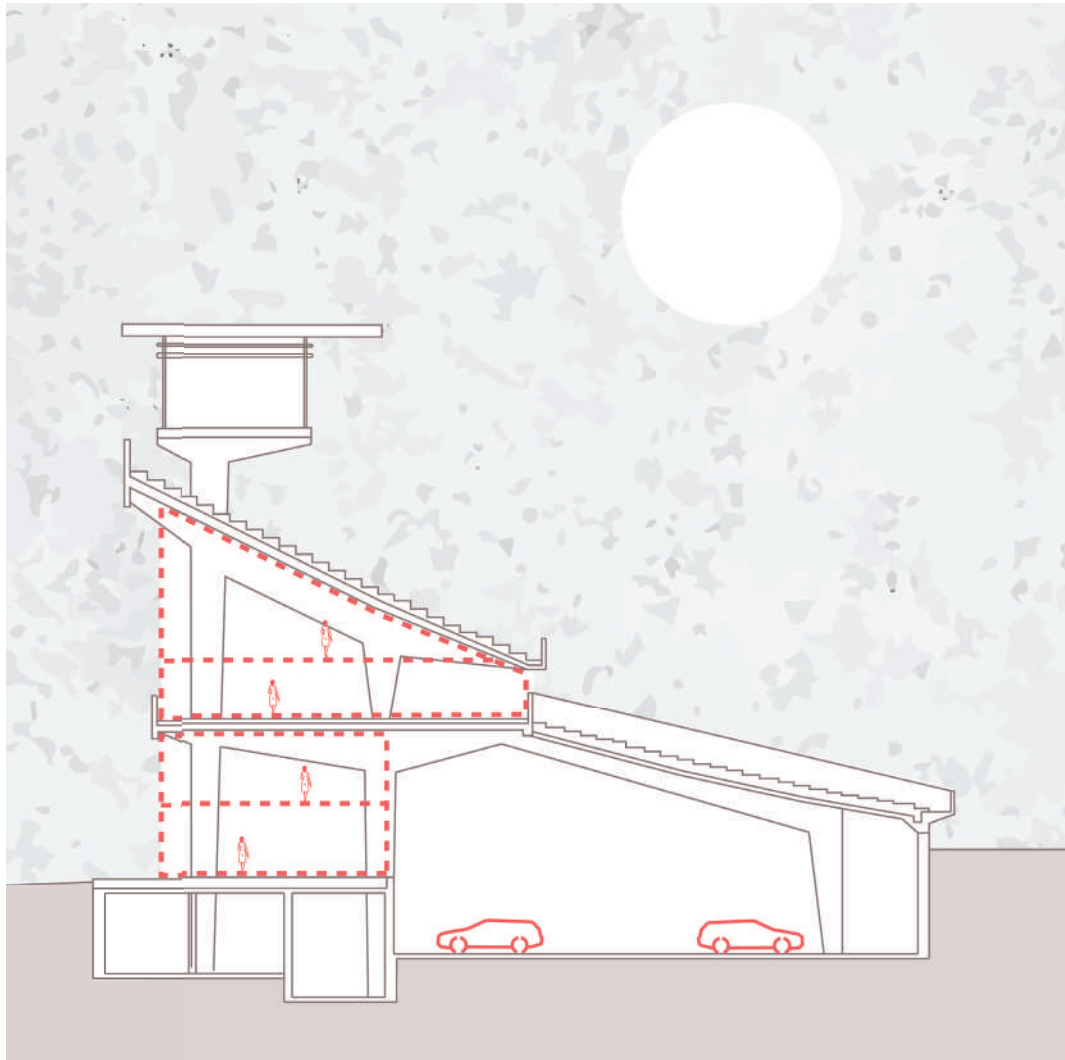
The examples studied shows us that it is not always progressive to tear down existing built structures. Rather, adaptive reuse of such structures can save time, money, materials and other resources for the future generations.

Rossi in his book *The Architecture of the City* says,

*“The value of history seen as collective memory, as the relationship of the collective to its place, is that it helps us to grasp the significance of the urban structure, its individuality, and its architecture which is the form of this individuality. This individuality ultimately is connected to an original artifact..it is an event and a form. Thus the union between the past and the future exists in the very idea of the city that it flows through in the same way that memory flows through the life of a person; and always, in order to be realized, this idea must not only shape but be shaped by reality. This shaping is a permanent aspect of a city’s unique artifacts, monuments, and the idea we have of it. It also explains why in antiquity the founding of a city became part of the city’s mythology”*

It is important to keep the stadium which is a part of the collective memory of the city of Prague. Its individuality as an urban artifact with a unique architectural form which is rooted in the city’s history needs to be united with a future that allows its memories to flow. The stadium thus should be a catalyst or a part of the city’s future developments.

Adaptive reuse is preserving the past by planning for the future. The best way to preserve a structure is by putting it to regular use. Though continued usage can cause wear and tear, regular maintenance will be efficient and effective while it is in use.



a conceptual representation of adaptive reuse of the spaces inside the stadium stands

## 6.0 Reference Projects

Architecture and Urbanism have a fundamental affiliation. The role of architecture in defining the urban form is undeniable. Making a building or urban block is essentially building an urban space and the edge conditions of these blocks becomes the intersection between architecture and urbanism.

In order to arrive at a certain urban form, which can be integrated into the Strahov region, it is important to analyze various precedents/ proposals which have tried to create a dialogue between architecture and urbanism of their respective contexts.

The following studies are intended to demonstrate how architectural forms can contribute to the city form in powerful or subtle ways. The case studies will show descriptions of each project followed by the reading of each project which will be concluded by a possible input that could be tested in the case of Strahov.

## Projects by Dogma

Dogma is an architectural office founded in 2002 by Pier Vittorio Aureli and Martino Tattara. From the beginning of its activities, Dogma has worked on the relationship between architecture and the city by focusing on urban design and large-scale projects.

The dogma projects, by being radical, inspire to explore the potential of the stadium by introducing forces of history as well as of the present to the closed (the solid mass) structure and open (the field) spaces in the stadium. Thus the Strahov stadium site is a perfect testing ground for project a project similar to the following examples by Dogma. The projects studied are:

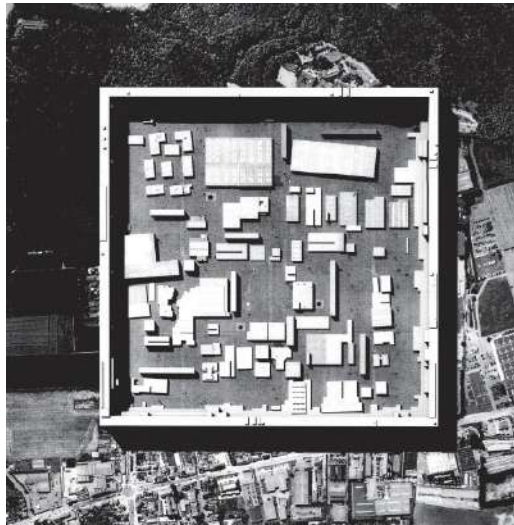
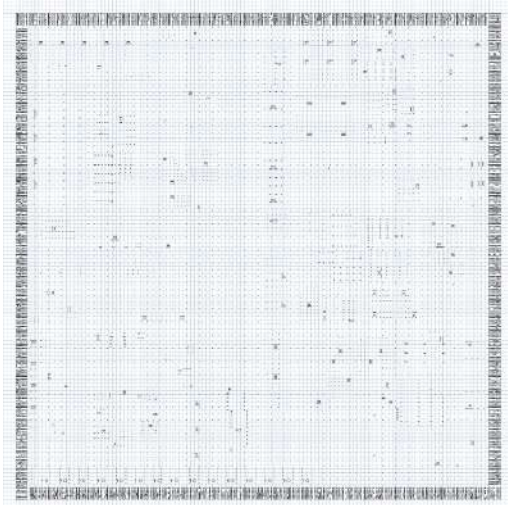
- o A Simple Heart
- o Stop City
- o City Walls

## Superquadras, Brasilia

Brasilia's Superquadras are residential areas where blocks are narrow and long as well as separate with ample green or open spaces around each building. The spaces are methodically proportionate to the human figure. In these spaces the local population has grown accustomed to an ideal lifestyle in relationship with wide public spaces and nature.

This project helps in understanding how the porous neighbourhoods function and how such a character is important in a walkable neighbourhood.

## 6.1 A Simple Heart



### Description

*"The project Simple Heart is basically a huge open space that is enclosed by a structure of continuous connections and linked spaces which are able to be used, transformed, reused and eventually destroyed. Here The structure is conceived as a 'Edufactory' because the structure facilitates the production of knowledge and social exchange using the mobile, flexible and adaptive qualities of the possibility of collaborative communications the structure allows."*

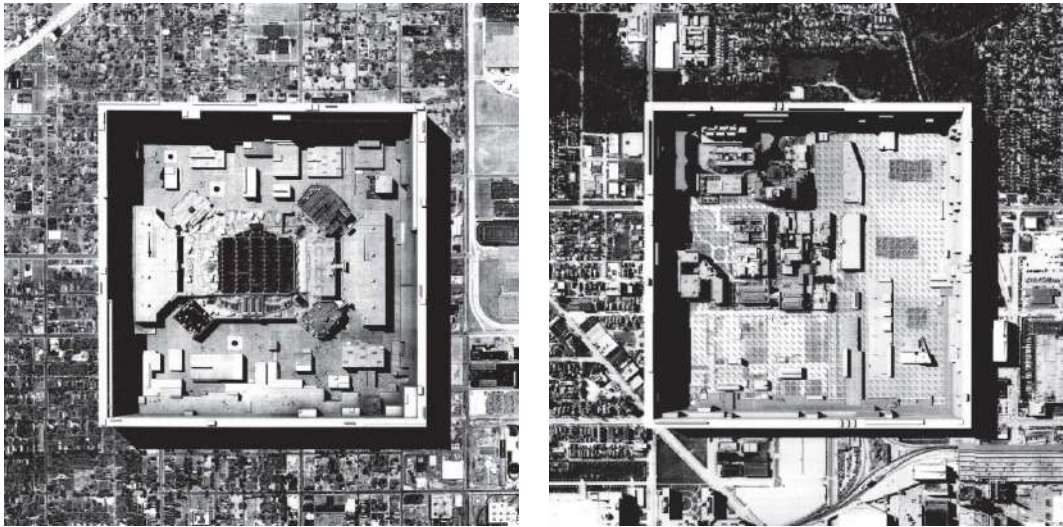
*"DOGMA sought to insert a wall around an existing part of the city, thereby aiming to contain all its capitalistic activities. Twenty-two of these units are set up close to the main urban centers of northwestern Europe. Each unit is designed to delimit an existing urban zone of 800 by 800 meters. These bars, measuring 25 meters in width and 20 floors high, contain 860 pods opening onto galleries for circulation. Once the compound is built, a transparent roof is placed over the area contained inside. The existing fabric of streets, squares and buildings, while remaining visible, is continuously adapted to the needs of the new inhabitants."*

*"The interior space is intended as a vast open "living room", a contemporary production space where living, social exchange and work take place within the same space. The rooms located in the walls are intended as a space of rest, solitude and seclusion."*

*A Simple Heart proposes building the new city on the ruins of the post-Fordist city. These ruins are the stations, metro lines, chain shops, office blocks and meeting places that form the background to our "productive" lives in the city."*

– Dogma





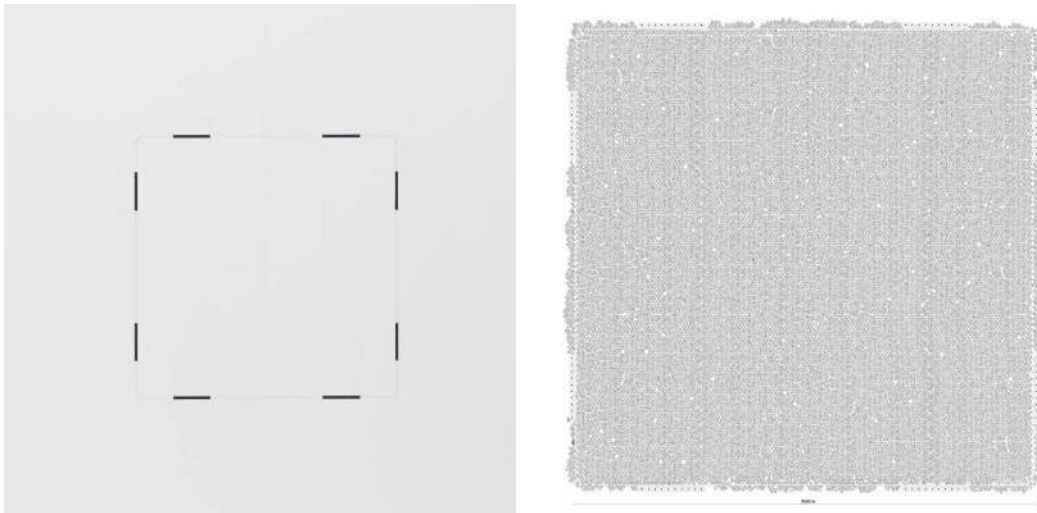
## Reading

The massive square blocks can be seen analogous to the Strahov Stadium tribunes(stands). They have a distinct identity in their locality. The urban grain of the interior of the blocks are different from that of the immediate context and are seemingly mixed in functions. The distinction created by the giant walls makes it possible to have varied functions in the inside, different from what exists around it . It gives a perception that a new city has emerged within the old city.

However, there arises the question of permeability and social segregation. In larger scale it does not seem to have any parameters that links the interior to the exterior. Though the new blocks may give sense of security and place of being for its inhabitants, the society around the blocks may have the feeling of being shut out. It also gives an impression of something that has been imposed upon the existing urban grain.

In short, the blocks need improved permeability and attributes or parameters that shall strongly hold them to the context into which they are being inserted. Hence, in the case of Strahov, it is required to explore options to create a contextual link between the interior and exterior of the stadium block.

## 6.2 Stop City



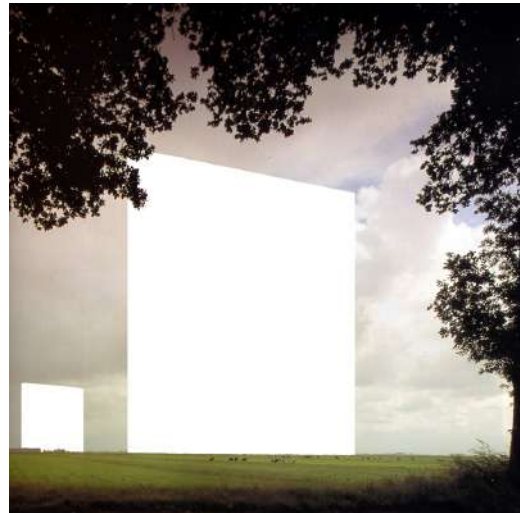
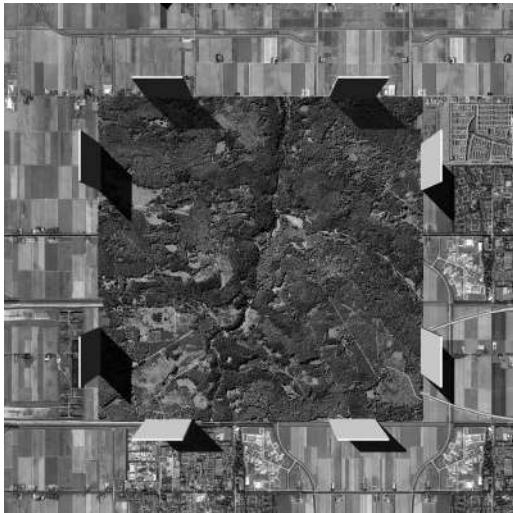
### Description

*“Stop City is the hypothesis for a non-figurative architectural language for the city. Stop City is proposed as the absolute limit, and thus, as the very form of the city. Stop City develops vertically. Stop City is an archipelago of islands of high density. The growth of Stop City happens by virtue of its limit, i.e. by the punctual repetition of the basic unit, which is a city of 500.000 inhabitants made of eight slabs measuring 500 by 500 meters, 25 meters thick. These eight slabs are positioned on the border of a square with side length of 3 kilometers, thus demarcating an “empty” area. Each slab is a “city within the city”, an Immeuble Cité that is in itself a self-sufficient city not characterized by any specific program or activity, being the support of multiple programs or activities.”*

*“The immeuble cité has no elevation: its face presents the vertical array of floor slabs with the free distribution and position of rooms in each floor. The square defined by the eight slabs positioned along its perimeter is empty, a simple urban void filled by a forest. This horizontal canopy of densely planted trees represents the limit against urbanization, and thus renders the very form of Stop City.*

*Stop city refrain from architecture; it is a model of a city in which there is no architecture as traditionally intended, but only the attempt to architecturally frame the city. Our proposal pursues the idea of an ohne eigenschaften architecture – an architecture without attributes – in other words an architecture that is freed from image, from style, from the obligation to extravagance, from the useless invention of new forms. Stop City is architecture freed from itself; it is the form of the city.”*

– Dogma



## Reading

Stop city is a limit to urbanization. It is a vertical city at the edge of a green dense forest. It upholds the idea of limiting architecture to a point, where in the urbanization and nature can co-exist. The vertical growth is thus fostered and the city grows within these vertical slabs. Stop city is a hypothetical city which could be read as an ideation on how to limit the urban expansion. It is not to be read in terms of styles and attributes of architecture, but to be understood as a city form in which the city and green can coexist. This model potentially could create a tension and a dialogue with adjacent fabrics of the city.

Stop city proposes huge open lands as forests. Though this model is not intended to be executed, the question would be how in any case this could be realized. Why not build horizontally without compromising on open space and greens? Wouldn't the vertical city instill a sedentary lifestyle to its inhabitants? Though these are the questions to be pondered, the model certainly gives an insight on the importance of limiting urbanization and also the possibility of overlapping and integrating multiple city functions in a single place.

## 6.3 City Walls

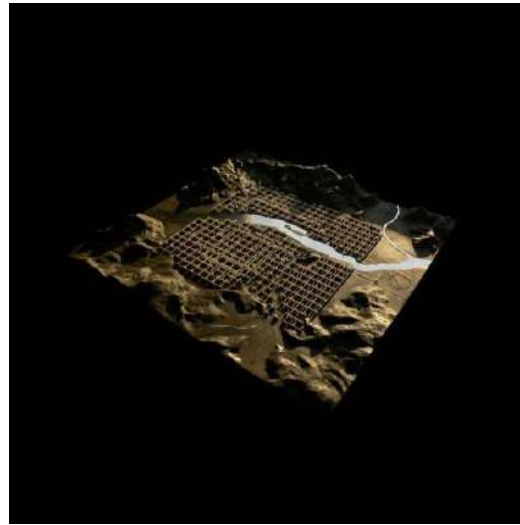
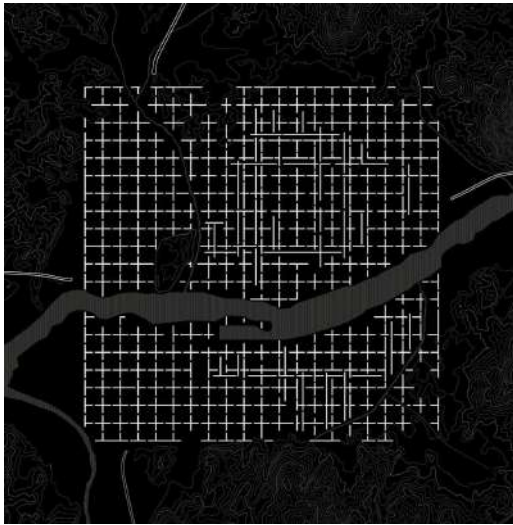


### Description

Project for the New Multi-Functional Administrative City in the Republic of Korea, 2005 by Dogma and OFFICE Kersten Geers David van Severen.

*"This city designed for 500,000 residents, organised as a sequence of rooms that are formed by 'city walls'. The city walls are a composition of cruciform buildings that represent two-thirds of the built mass of the city. These 'walls' form the habitable architectonic structure of the city. The spaces between the city walls are rooms without content, providing the space for further urban development. The future content is the furniture of the rooms, as it were. The plan seeks to define the form of the city in a rigid manner, without lapsing into the naïve modernistic ideal of the city as a fixed, predetermined organisation of buildings. The city walls and city rooms form the 'genesis' of the city, its bare facts. In this manner they fulfil the only role that can be ascribed to architecture: providing a specific inertia against the instability of life itself."*

– OFFICE Kersten Geers David van Severen



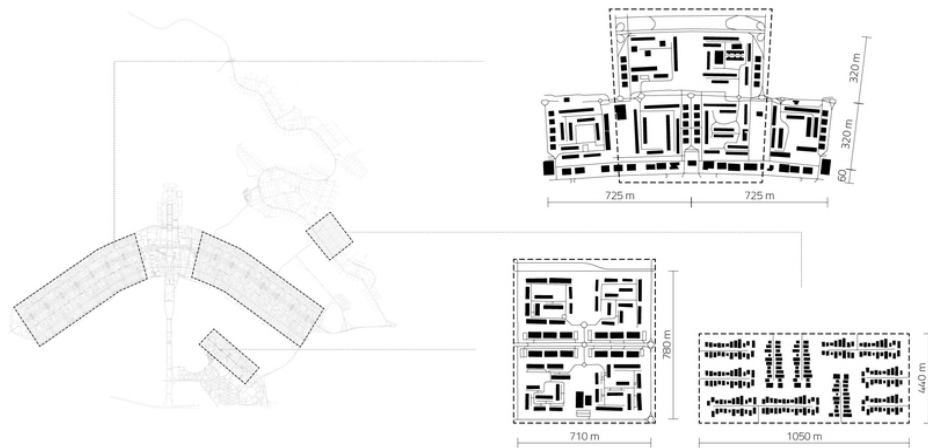
## Reading

This city model provides room within each grid to grow its own distinctively diverse functions. A miniature city could develop within each grid depending on the scale of the grid. The habitable city walls form large open squares similar to courtyards with potential to develop other functions within.

The City walls could also be read as new city grids that could be inserted into the existing city and that also can co-exist with the actual fabric of the city. This means the diversity of functions in the city is maintained in each of its grids, not quite separating functions its functions from the next.

Though the pictorial representations of the city walls suggests a definite bounding edge to the city, it looks permeable, expandable and contextually flexible. Similarly even though the cruciform buildings are majorly repetitive, at several parts, the grids' overlaps break the prosaic city grid pattern making a more vibrant and multi-layered city.

## 6.4 Superquadras of Brasilia



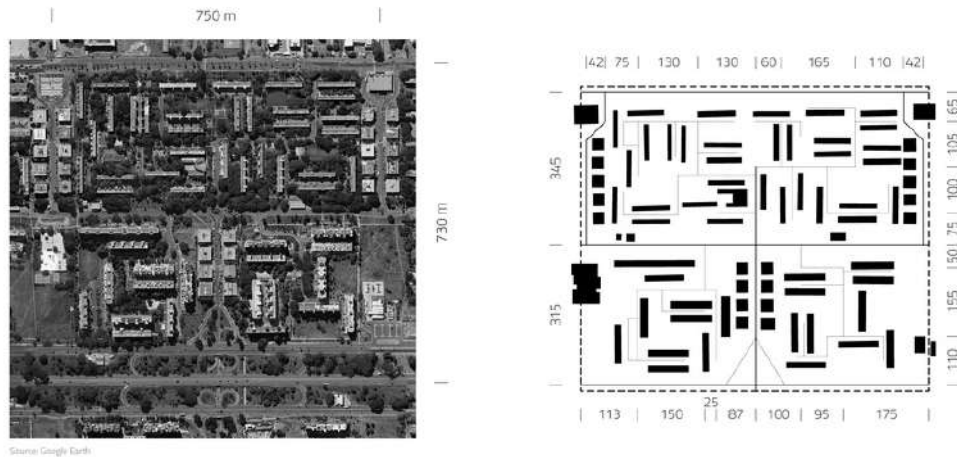
### Description

In the Urban plan of Brasilia, Lucio Costa designed residential sectors as large neighbourhood units measuring 300x300m.

*“Each neighbourhood unit consist of 8 to 12 buildings. Buildings within a superquadra is clearly separated from each other and are surrounded by greenery and open spaces. Each building in superquadra is limited to 6 floors and has a uniform height, with the exception of the far eastern side of the plan where the limiting height is 3 floors. Superquadras sought to establish a human relationship with their dwellers, at the same time tightly controlling residential density 100 to 150 persons per acre. Moreover, each building is elevated on pilotis that creates very specific architectural and spatial effects, providing the ground floor for pedestrians and passersby and allowing one to safely walk in a heavily motorized city. The space of each neighborhood also includes sufficient parking lots and green areas.*

*Large infrastructural solutions were provided within the fabric of superquadras. As each of the units were to house around 3000 people and mainly families, amenities such as playgrounds, clubs, gyms, swimming pools and small shops were provided in each of the superblocs, constituting an extensive infrastructure. Local commercial areas with bakeries, butcheries, pharmacies were organized as “bedside shopping,” while every four superblocs there were schools, churches, and entertainment areas. Arrangements of amenities could vary within a block; however this solution had provided all necessary infrastructure accessibly by feet, strikingly convenient and radically different decision from the rest of heavily motorized city.”*

– Superquadras: Performing Utopias \_Maryia Rusak



## Reading

Morphologically the neighbourhoods are porous both in terms of building footprint and in terms of possibility to traverse through the building blocks owing to the fact that they are raised on pilotis. Thus the neighbourhood becomes more pedestrian friendly. Though the similar sized blocks bring a sense of uniformity to the neighbourhood, the way they are dispersed is neither symmetric nor on repetitive grids. However the voids formed by the spacing between the buildings are similar or proportional hence bring a sense of rhythm and balance.

The core idea of the design of the neighbourhood was that it is self sustainable, i.e. no one would have to leave the neighbourhood for anything but work. Each neighbourhood units are of walkable size and are conveniently linked to the main transportation artery to connect with the other parts of the city.

Contemporary cities or neighbourhoods are focused on making pedestrian friendly spaces, buildings of human relatable scale. Certain characteristics of Superquadra of Brasilia like the porosity and human scale buildings are thus worth further investigating.

## 7.1 Development Strategy

Despite its geographic location and difficult topography it has immense potential because of its proximity to the city center and the old city quarters. This less dense part of Prague is awaiting future developments which shall address the rising demands for housing as well as other infrastructure in the city. This potential will be further boosted by the arrival of the newly proposed tram connection to the stadium.

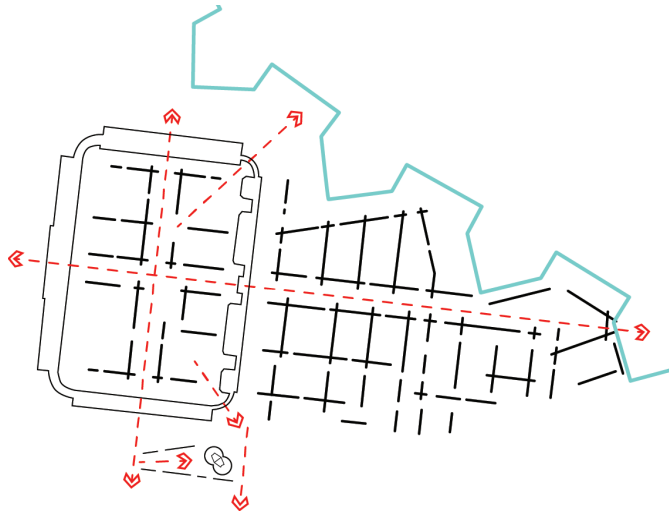
The entire area close to the stadium needs to be densified. Based on the contextual study, the student housing area on the east of the stadium is suitable for further densification. There is also the scope for renovating the residential boulevard which becomes the eastern axis link connecting the region with the Petrin gardens. The area on the west of the Strahov stadium is set aside for its current functions-sports and recreation as there is a plan to rebuild the Evžen Rošický Stadium as the National Stadium in the future.

The stadium is proposed to become a small city within the city. It becomes a city framed by the stadium stands. The degrading stadium itself is re-purposed for various uses which becomes a part of the inner mixed use city.

The topography provides the possibility of accessing the interior of the stadium from the north at a lower ground level thereby helping to develop most of the city blocks with floors below the existing ground level and not to build higher than existing stadium stands. This would also make sure that the new development inside the field will not override the stadium building, which is a historic cultural monument. This possible access thus also helps in bringing the new tram-line through the stadium block from the north side of the stadium.

The city block grids are formed based on the existing blocks of the student residents as well as in comparison to the city blocks of the city of Prague. It thus adopts an average grid size of 60-70 metres though it varies in size marginally with respect to actual site conditions of each blocks. The blocks are designed to be permeable to provide better pedestrian accessibility throughout the neighbourhood. Random access points to the interior of the courtyards of the blocks breaks the repetition of the urban spatial grid and thus makes the spaces more lively and interactive.





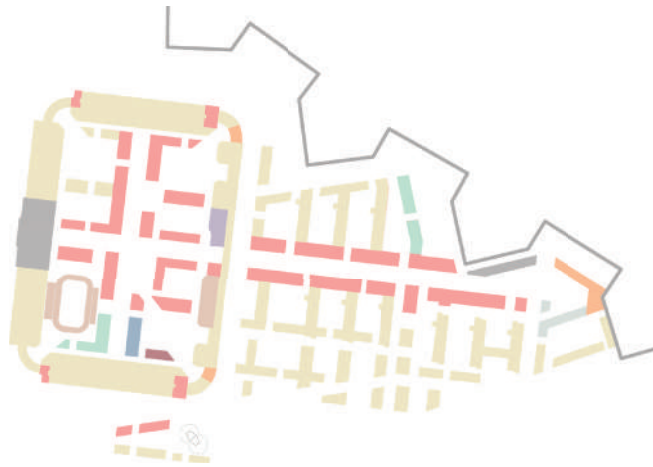
Diagrams showing a porous neighbourhood with multiple perforations through the stadium stands which allows ease of movement through out the neighbourhood.

## 7.2 Project Brief

The idea is to create a unique mixed use city quarter within the stadium structure as well as its immediate surroundings. The stadium stands are improved by the adaptive reuse of its spaces through integrating various function within it. While doing so, the paramount concern is to maintain the character of the stadium structure. A master-plan is proposed for the strategic urban area, because it is vital in terms of functioning of the region as a whole and that it would have considerable impact on how successful the new proposal for the adaptive reuse of the stadium is to be.

The master plan proposes strategies to densify and improve the spatial quality and urban character of the region. Each block grid forms open courtyards which are accessible from various entry points. The courtyards within the stadium have varying functions including sports courts such as ice-hockey rink, tennis, basketball, gaming center are integrated into the courtyards along with two public parks. Other public spaces include two public plazas which are associated with high streets, and another plaza connected with the ventilation tunnel of the Strahovsky tunnel which is monumental in scale. The Old City wall is enhanced by creating a skating park and a children play area adjacent to it. The boulevard is renovated to a human scale reducing the width to 25m from actual 45m and it becomes a part of the east-west high street. The boulevard ends at a Plaza in the east, framed by a cultural building cum restaurant. This building has a green roof, which is accessible from the plaza, through which one can easily get on top of the Old City-wall and pass on to Petrin Gardens. The tram-line is brought until the plaza so that it services the entire neighbourhood thus making it functionally effective.

The mixed use city center constitutes residential units, hospitality facilities such as hotels and restaurants, offices, institutions (cultural and educational) and commercial spaces. The commercial/retails spaces is set along two main axes running through center of the stadium, the East-West and the North-South axes. These are the two main streets of the city quarter which is primarily used as public transport routes and as high streets. In addition, the new city quarter also consists of several recreation spaces (indoor and outdoor), sports facilities and ancillary facilities.



Functions

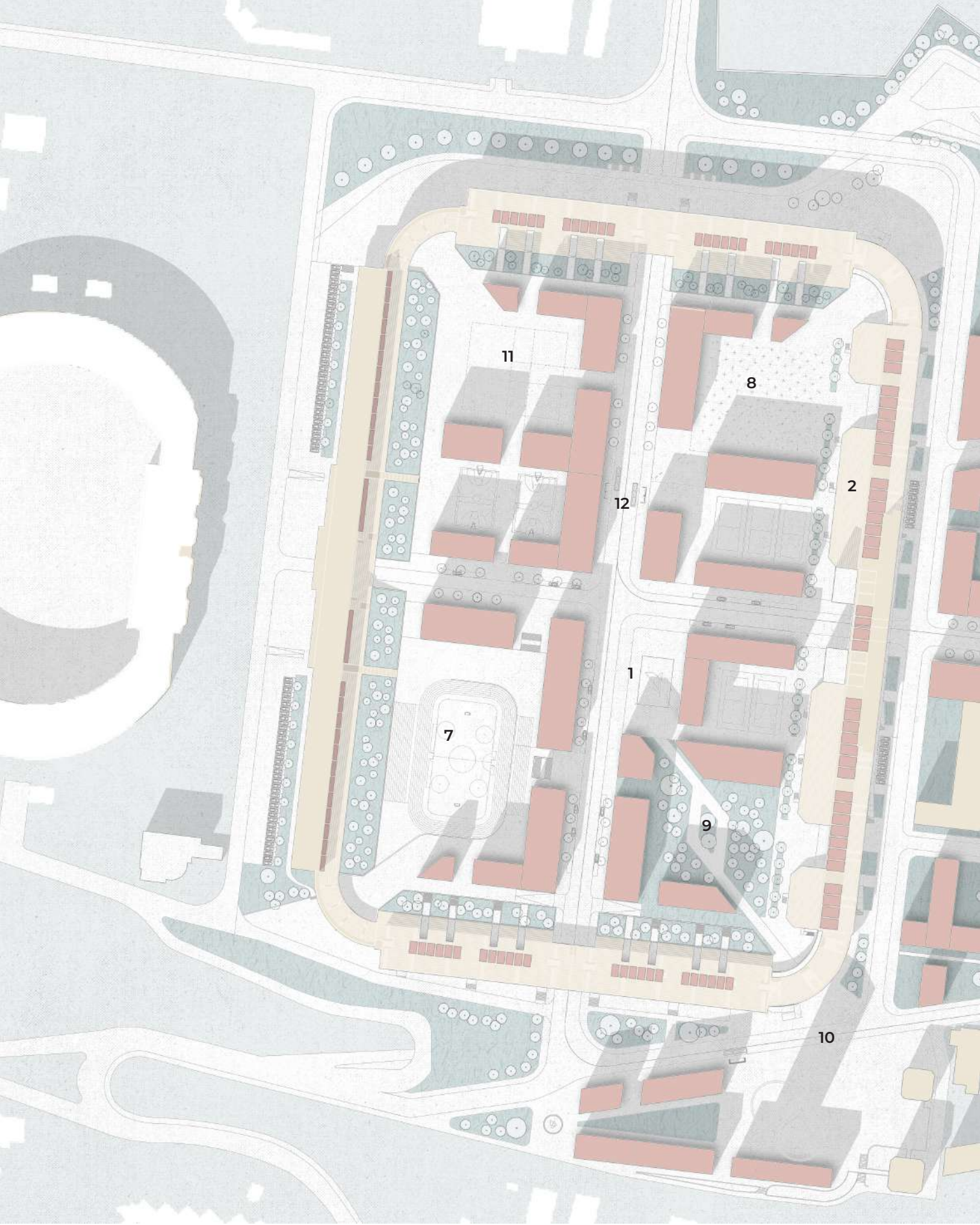
- residential
- residential mixed use
- educational
- super market
- hospitality
- cultural
- sports/recreation
- public library
- hospital
- restaurant

The spaces within the stadium stands are re-purposed as residential (apartments and studios) and other functions such as hospitality, food and beverage outlets, supermarkets and other retails. As the structure follows a regular column grid, it is possible to incorporate light weight prefabricated architectural solutions into the existing structure. Cross laminated timber (CLT) prefabricated modules which are mass produced are inserted into the column grid. Different housing typologies are developed which are suitable for the column grid and the stands which accommodates them.





### 7.3 Design Project



11

8

2

12

1

7

9

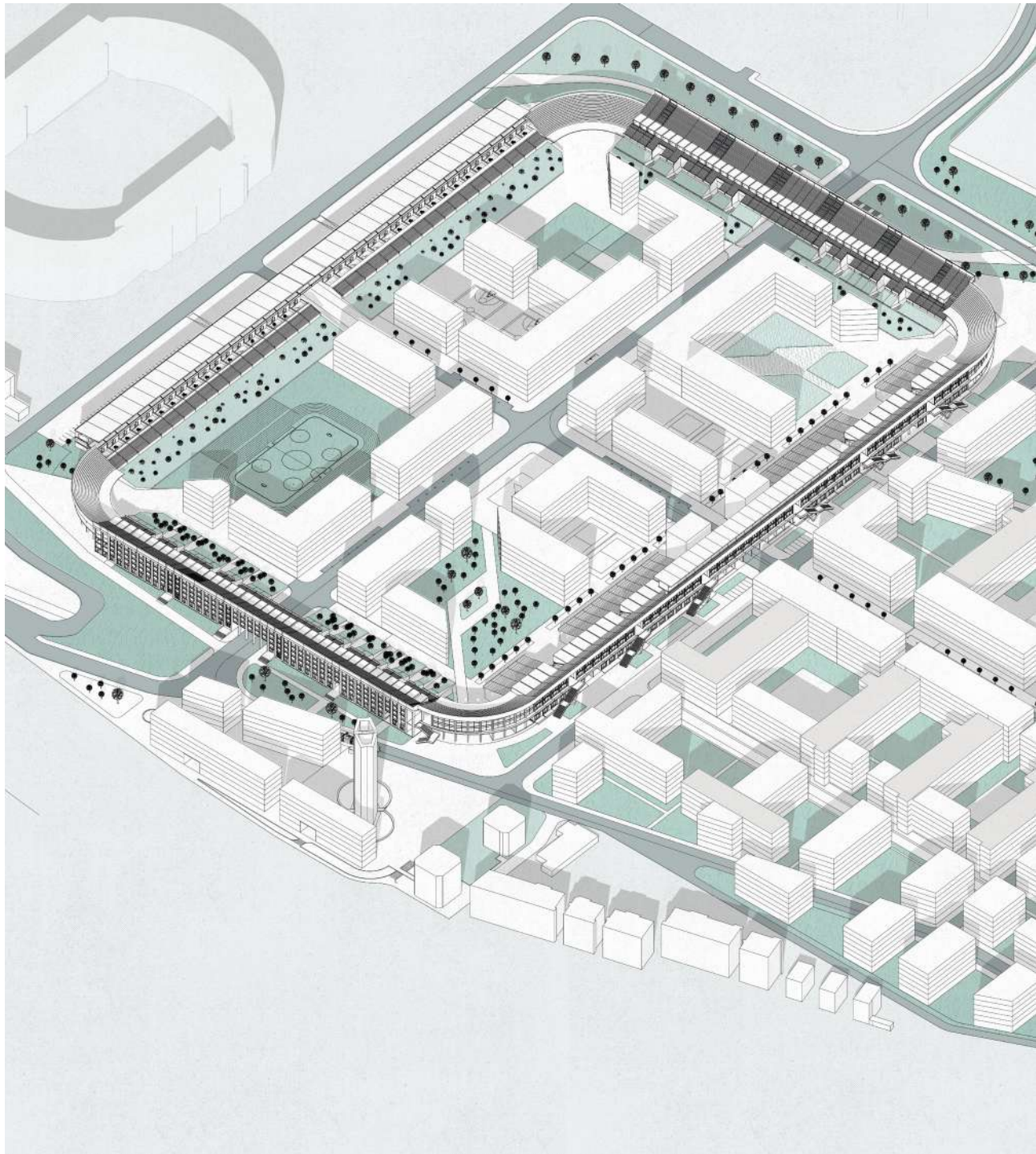
10



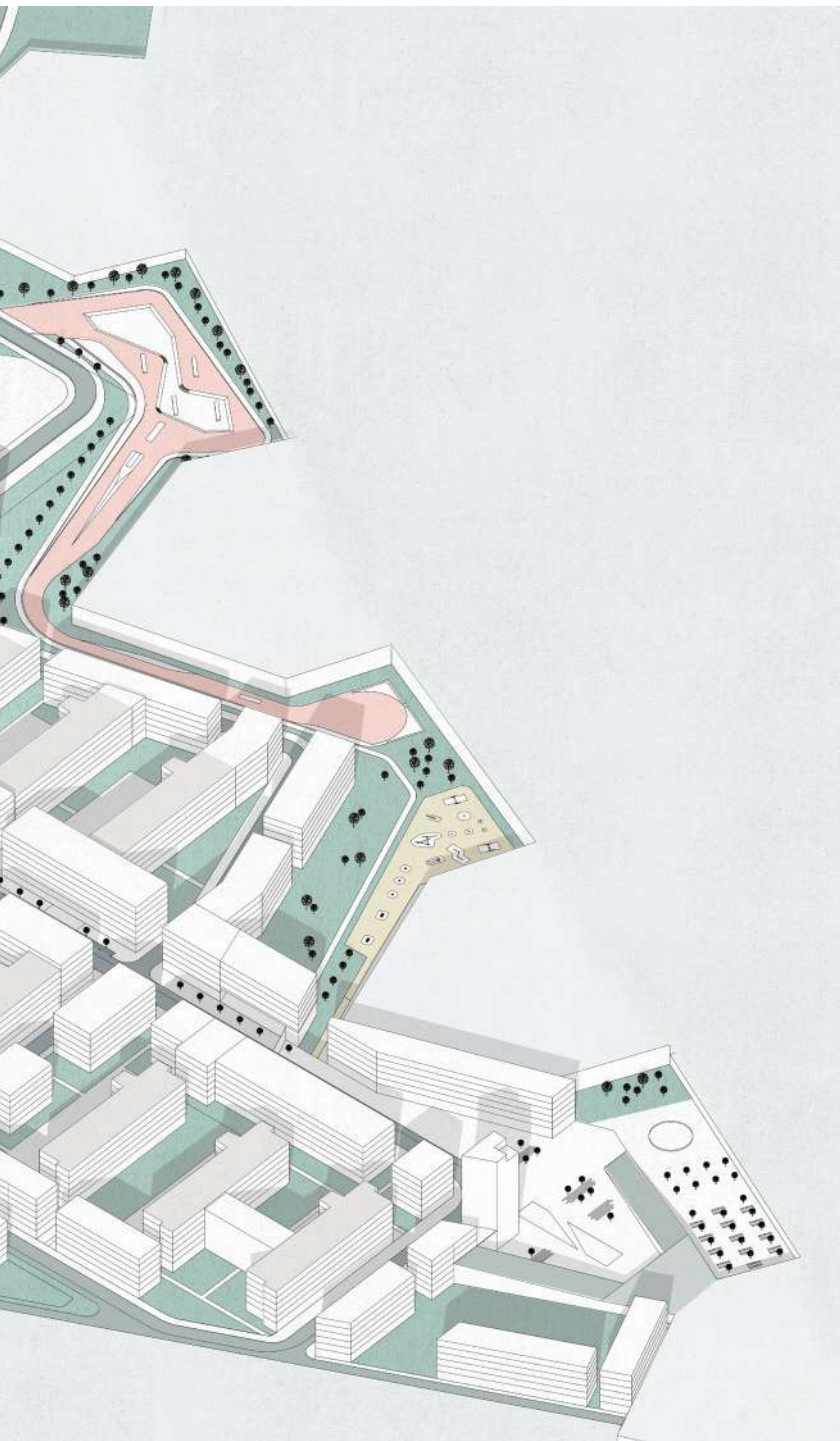
- 1. Inner City Square
- 2. Stadium Stands
- 3. Outer City
- 4. Skate Park
- 5. Kids Park
- 6. East Square
- 7. Hockey Park(Underground)
- 8. Sokol Memoir Park
- 9. Park
- 10. Tower Plaza
- 11. Gaming area(Underground)
- 12. Main Street
- 13. Beer Garden& Restaurant



Site Master plan  
scale 1:2500

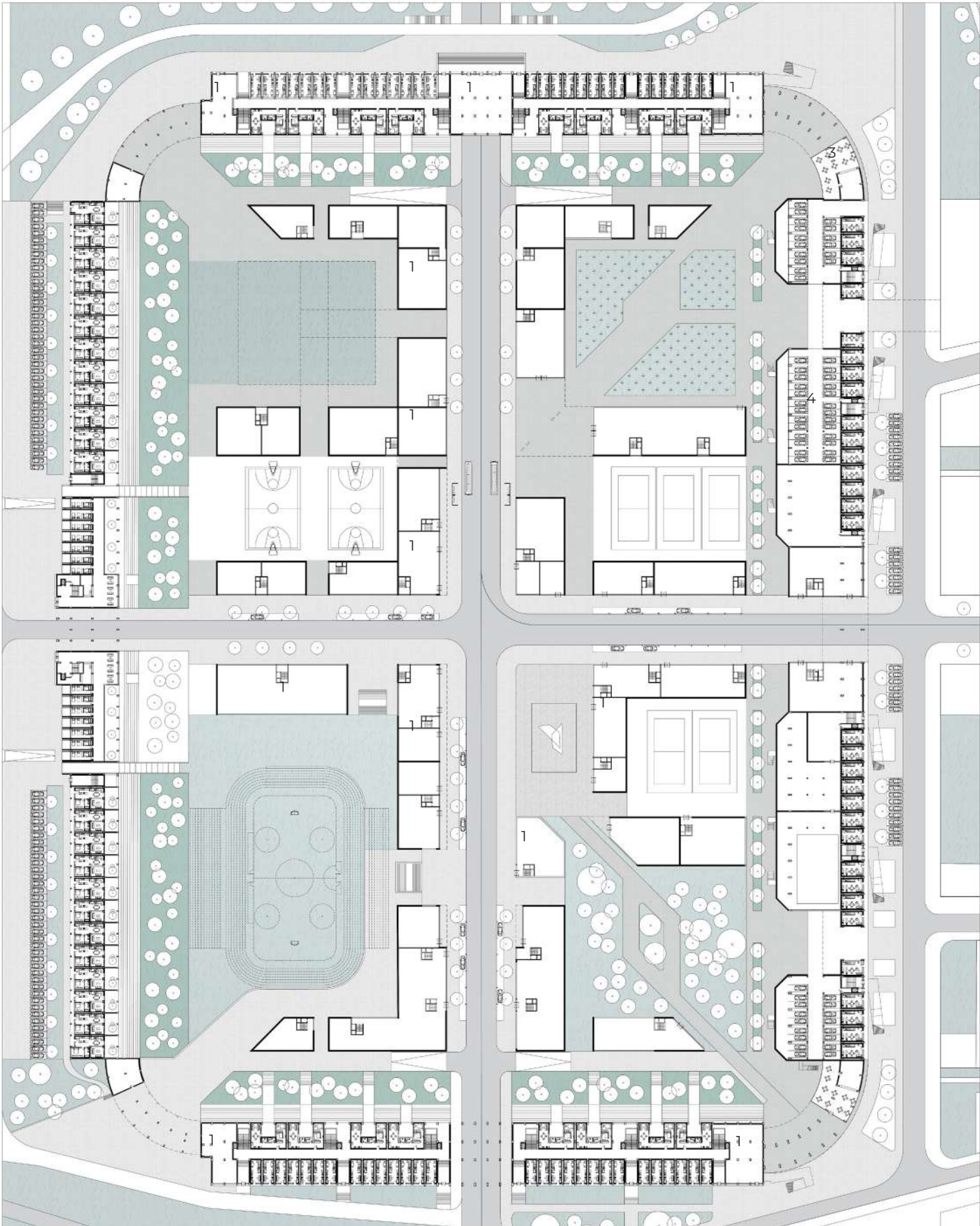






The housing units in the stadium are mostly duplexes ranging from 2 bed units to 3 bed units on the South, East, and North blocks apart from studio units. The West stand accomodates typologies of town houses and hostels.

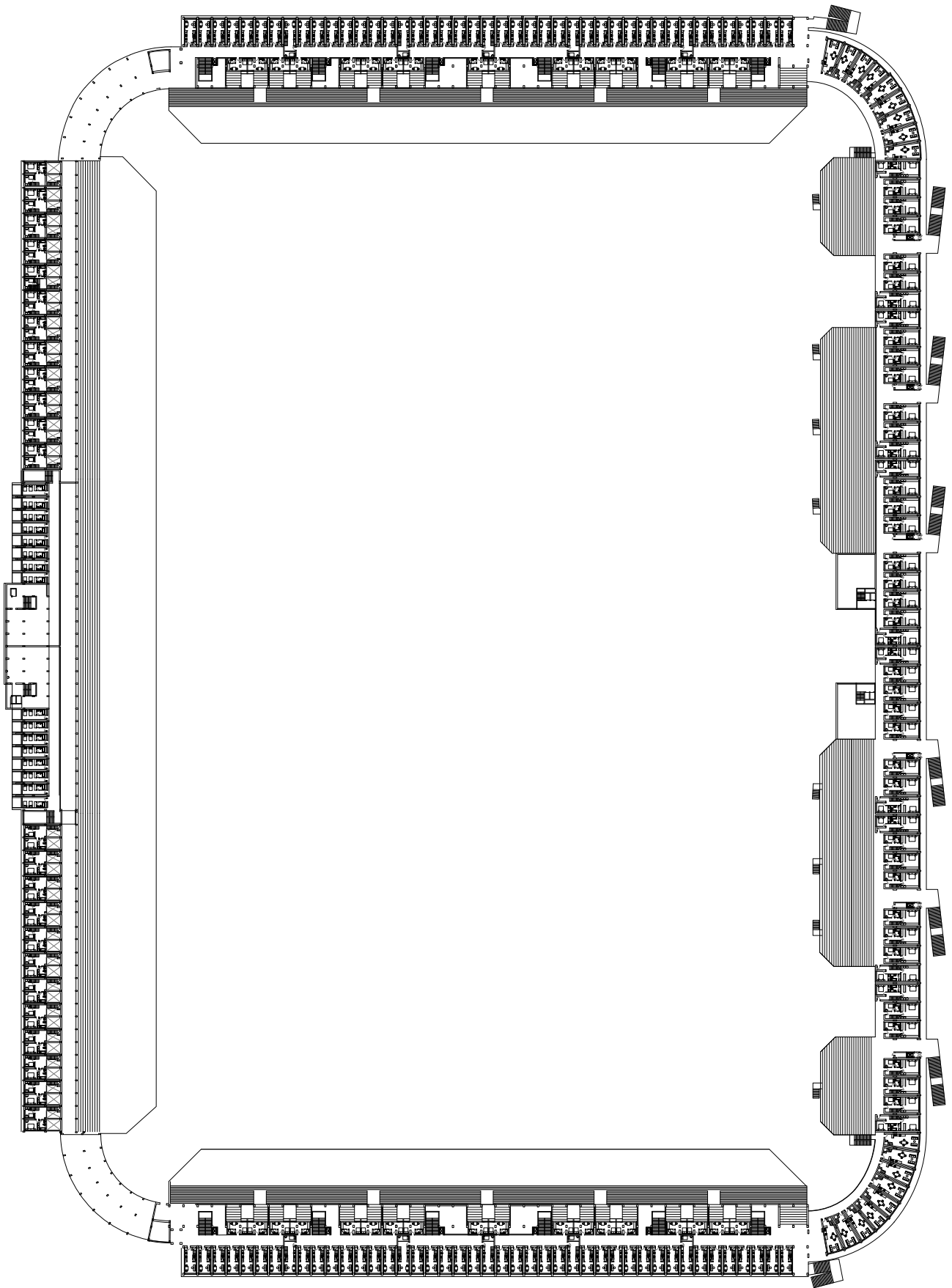
axonometric view



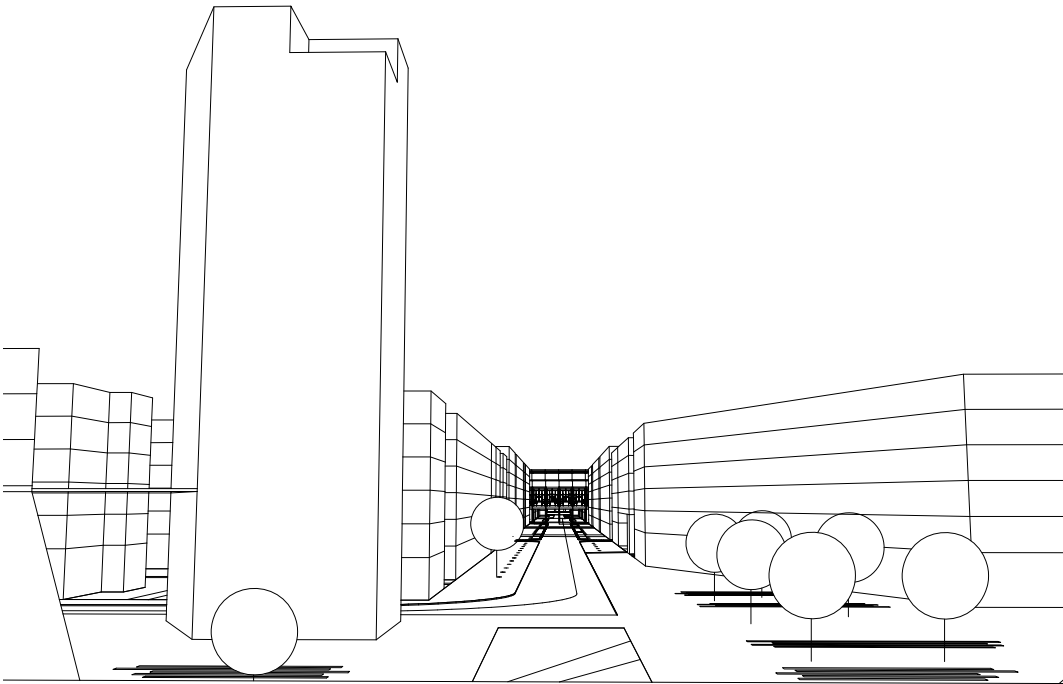
Left Page: Ground Level Plan

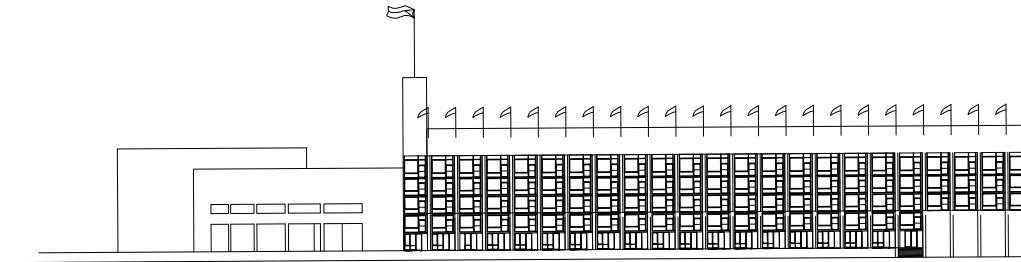
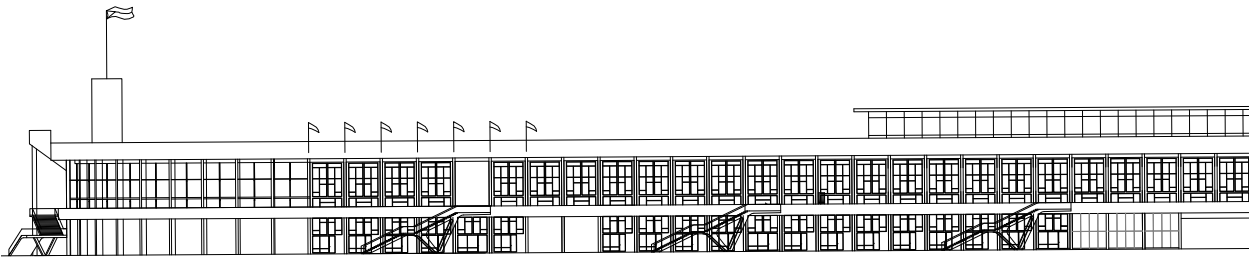
1. Business/Shops
2. Residential
3. Cafe
4. Parking
5. Sokol Park
6. Gaming Arena (Underground)
7. Basketball
8. Gallery
9. Museum
10. Gymnasium
11. SuperMarket
12. Library
13. Hospital
14. Sport science university
15. Ice Hockey rink(Underground)
16. Park
17. Hostel

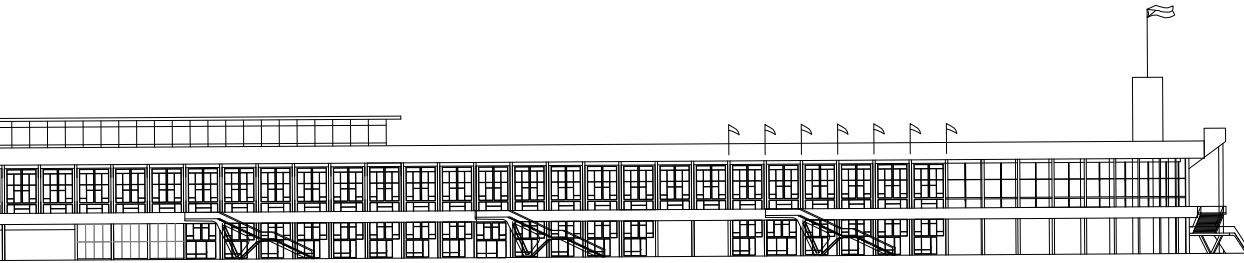




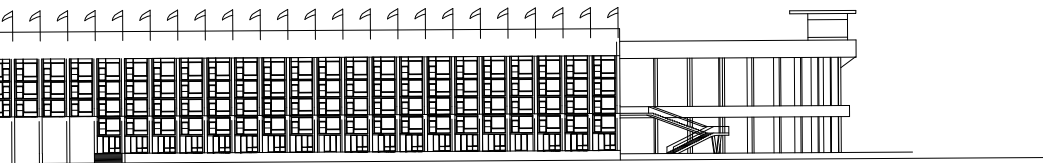
Left Page: Upper Level Plan



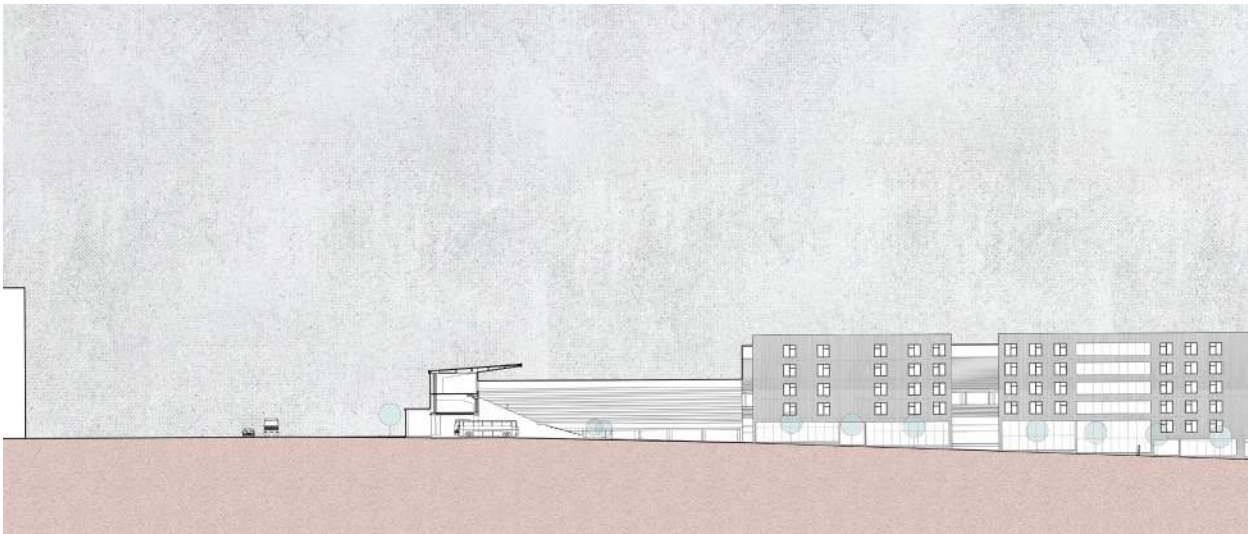
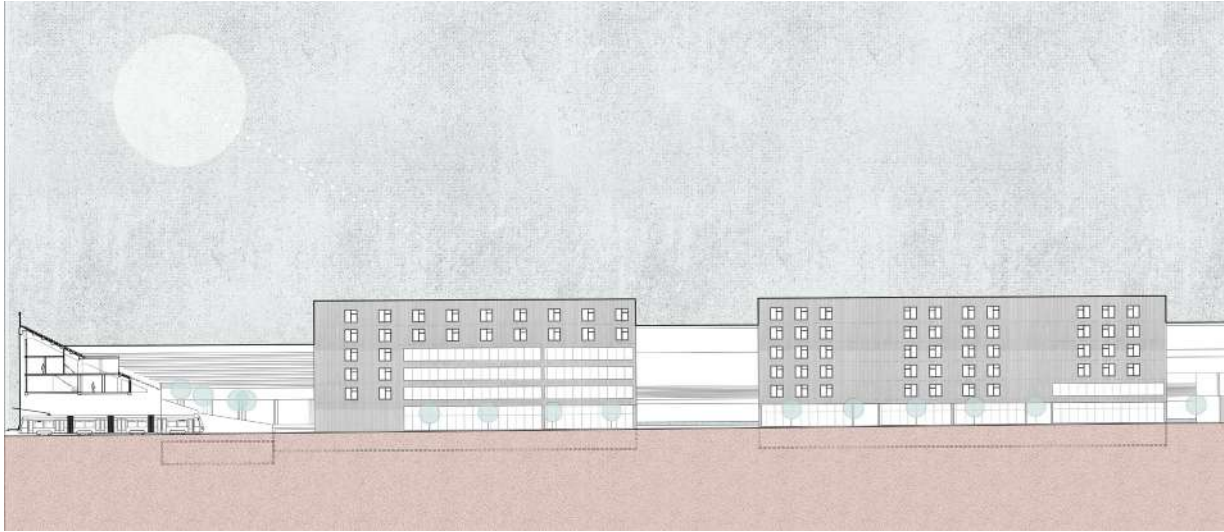




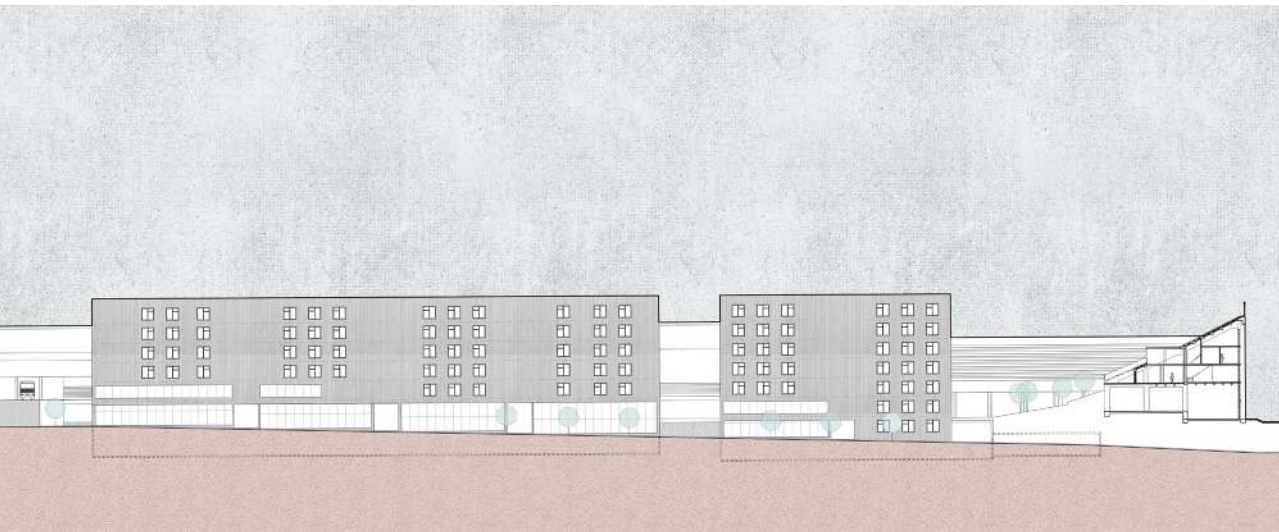
East side elevation  
scale 1:1250



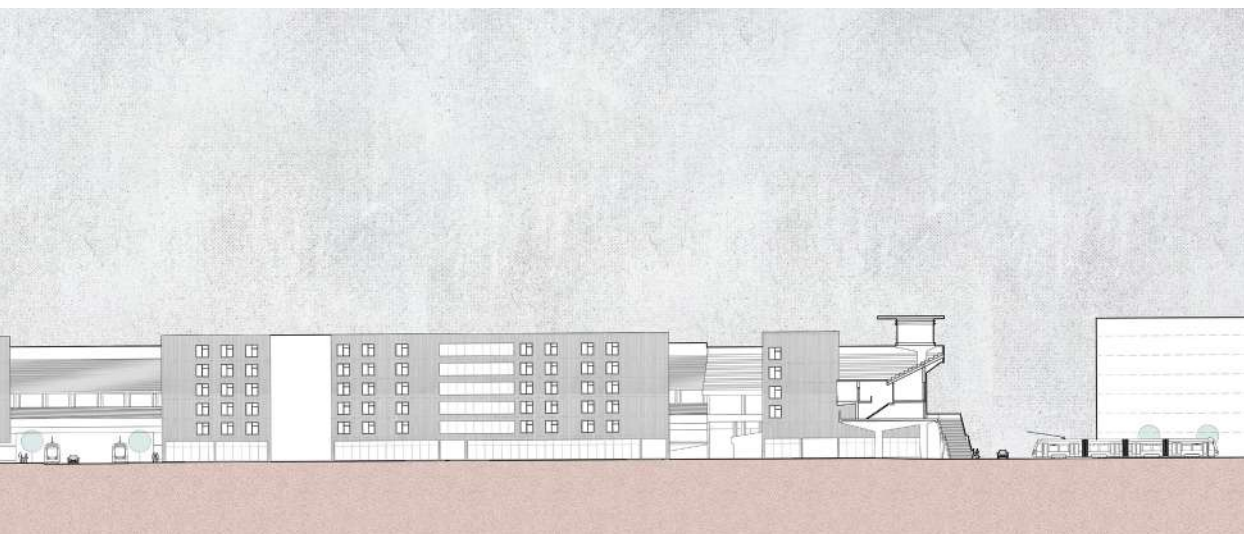
South side elevation  
scale 1:1250



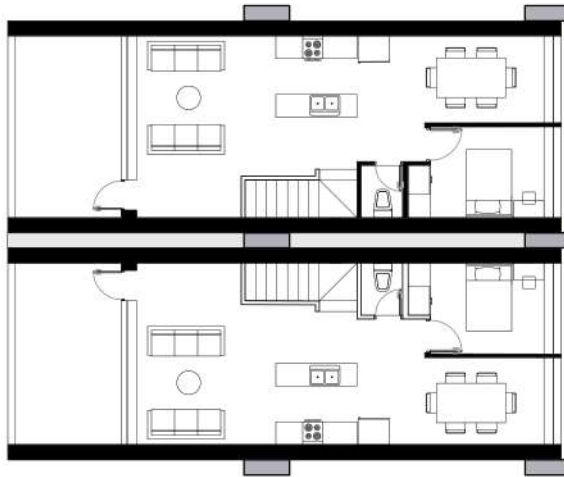




Section along North South axis  
Scale 1:1250



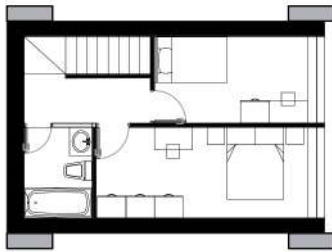
Section along East West axis  
Scale 1:1250



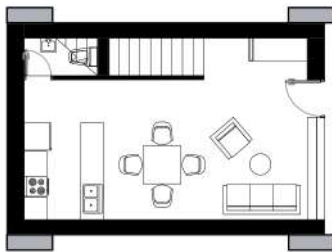
level 4 plan



level 3 plan

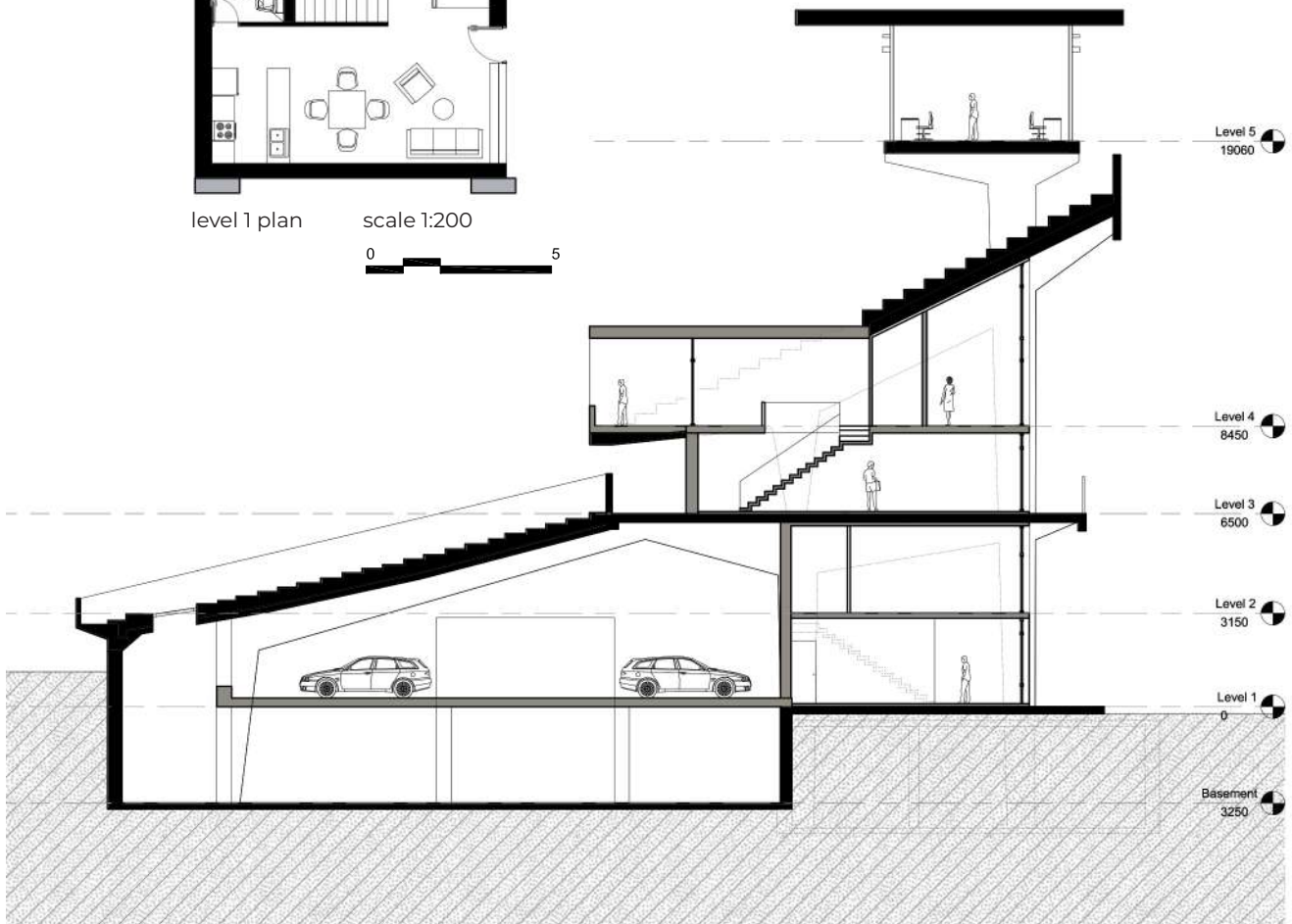


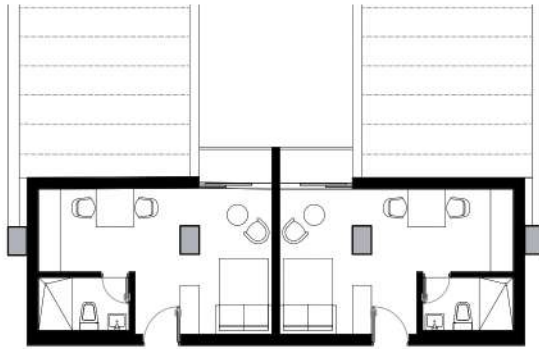
level 2 plan



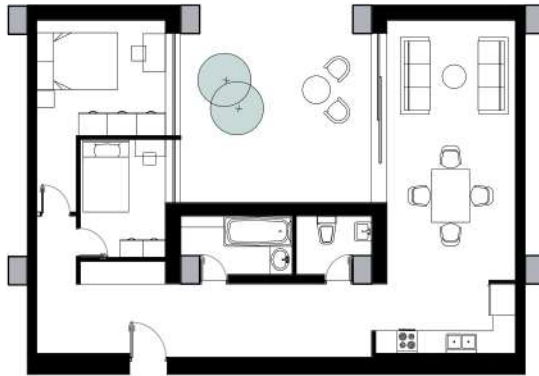
level 1 plan

scale 1:200

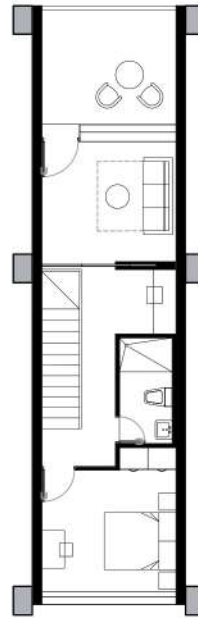




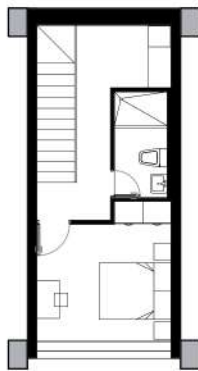
Level 3 Rear plan



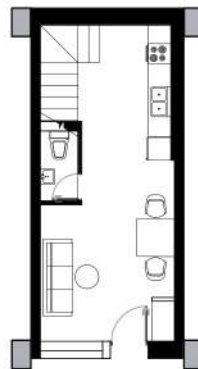
Level 1 Rear plan



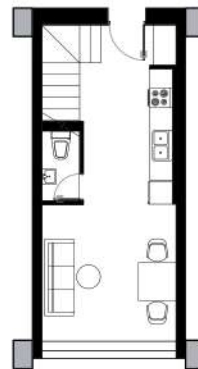
Level 4 plan



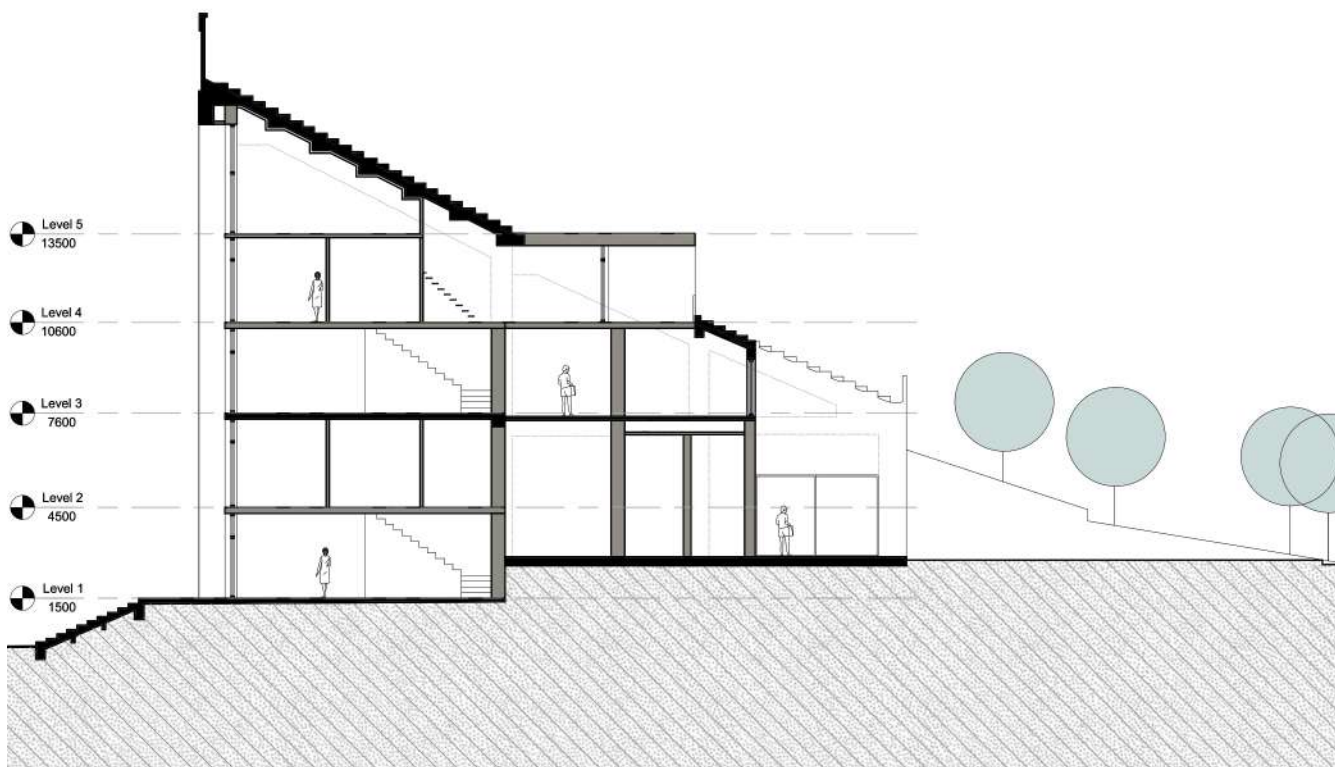
Level 1 plan



Level 2 plan



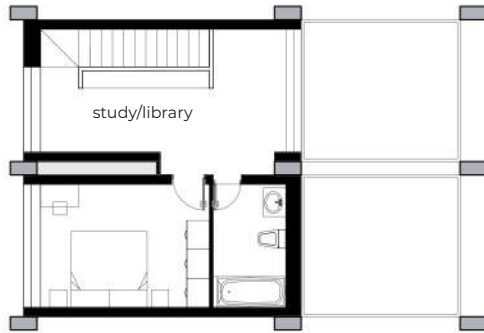
Level 3 plan



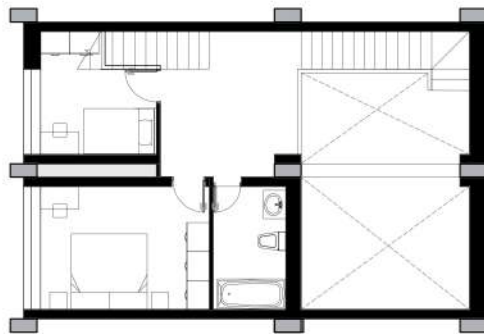
scale 1:250



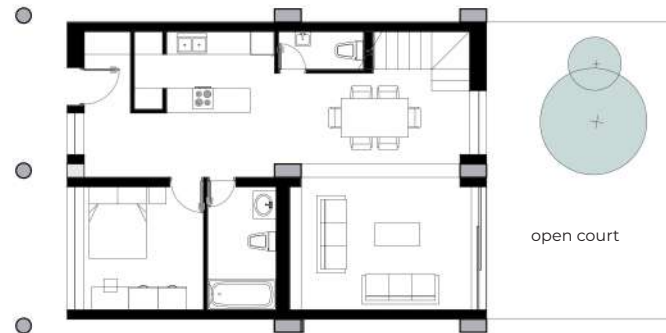
cross section



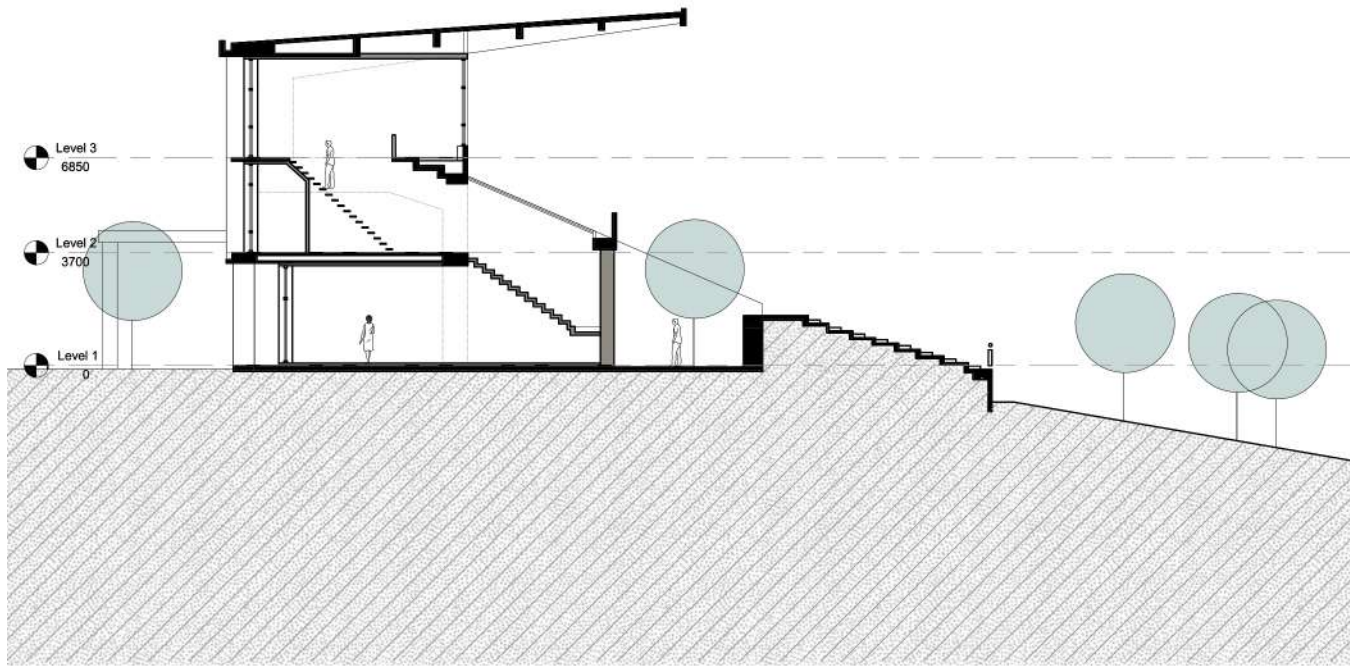
Level 3 plan



Level 2 plan



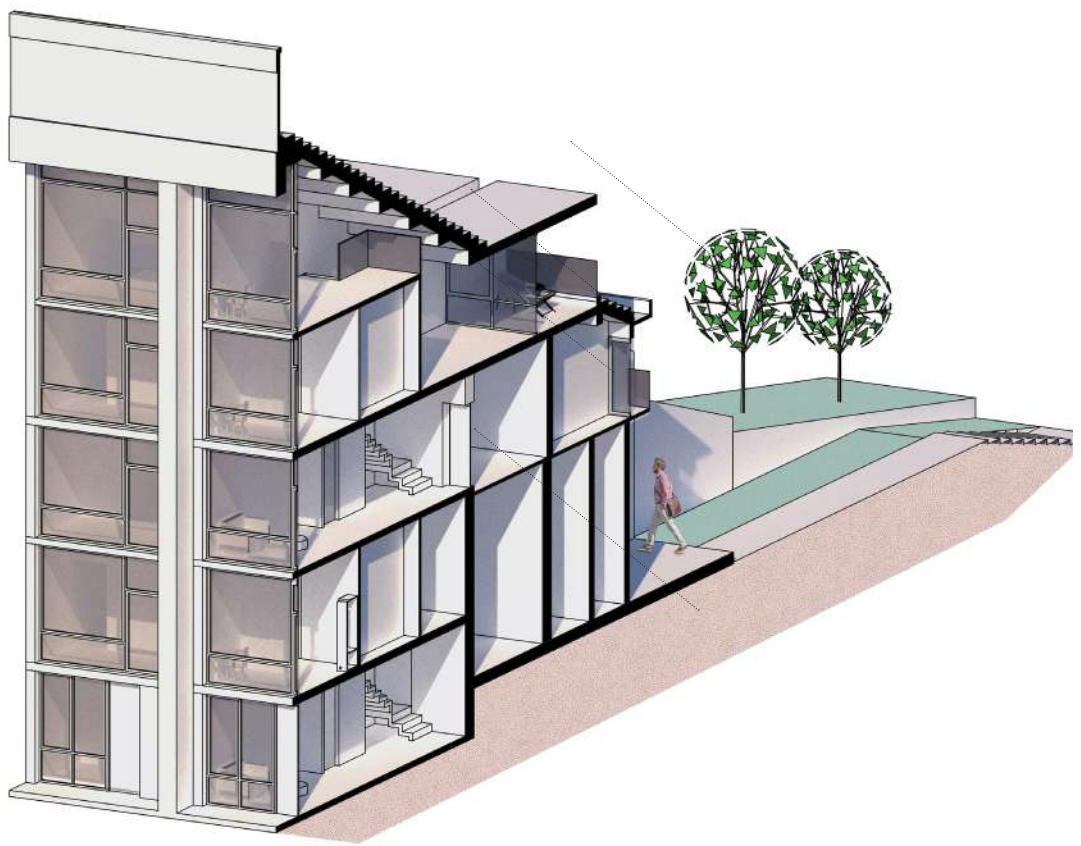
Level 1 plan



scale 1:250



cross section

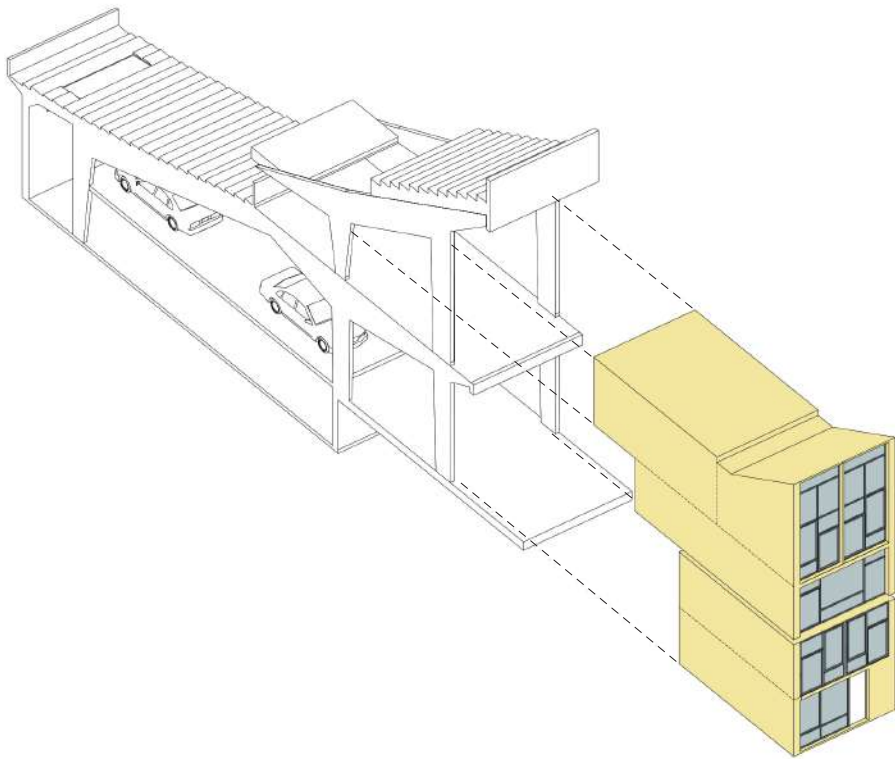


sectional axonometric view-  
typical south stand cluster

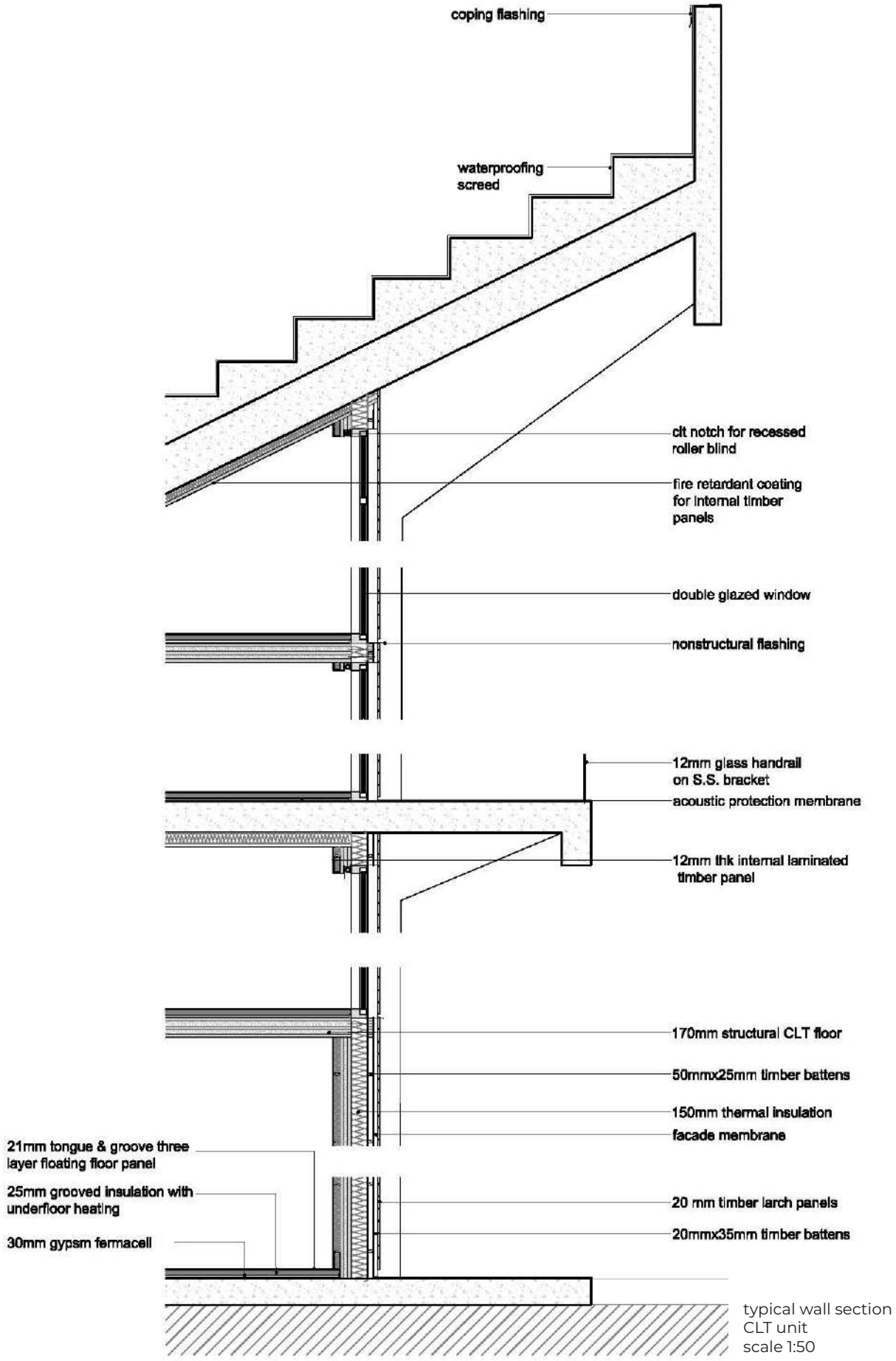




sectional axonometric view-  
typical east stand cluster



Insertion of prefab-CLT units



coping flashing

waterproofing screed

cilt notch for recessed roller blind

fire retardant coating for internal timber panels

double glazed window

nonstructural flashing

12mm glass handrail on S.S. bracket

acoustic protection membrane

12mm thk internal laminated timber panel

170mm structural CLT floor

50mmx25mm timber battens

150mm thermal insulation

facade membrane

21mm tongue & groove three layer floating floor panel

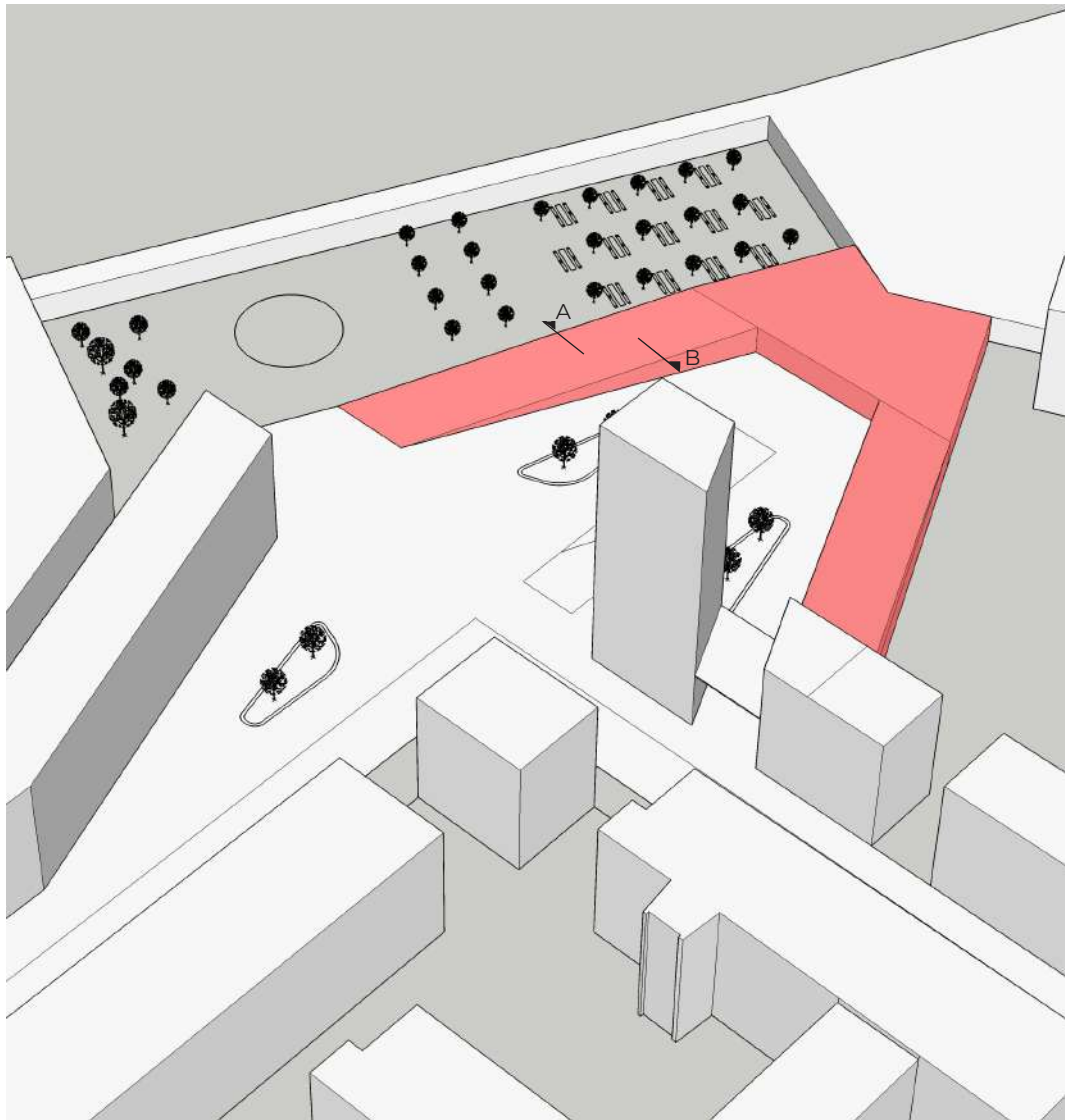
25mm grooved insulation with underfloor heating

30mm gypsum ferracell

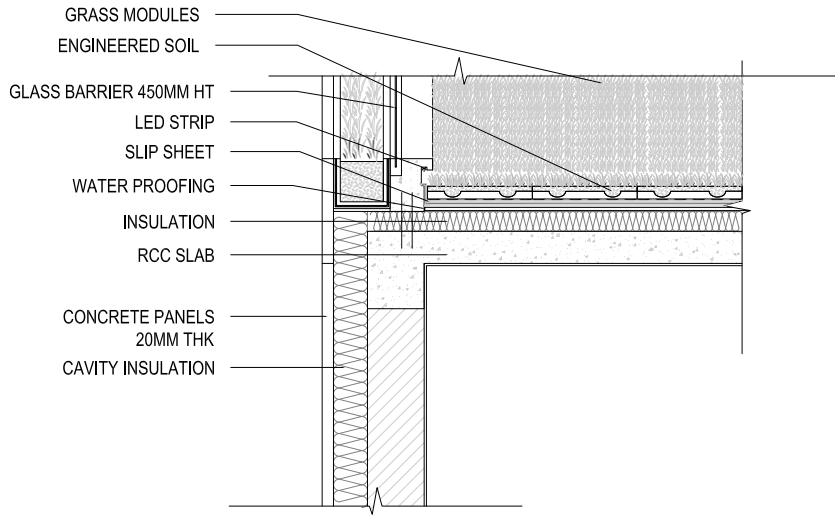
20 mm timber larch panels

20mmx35mm timber battens

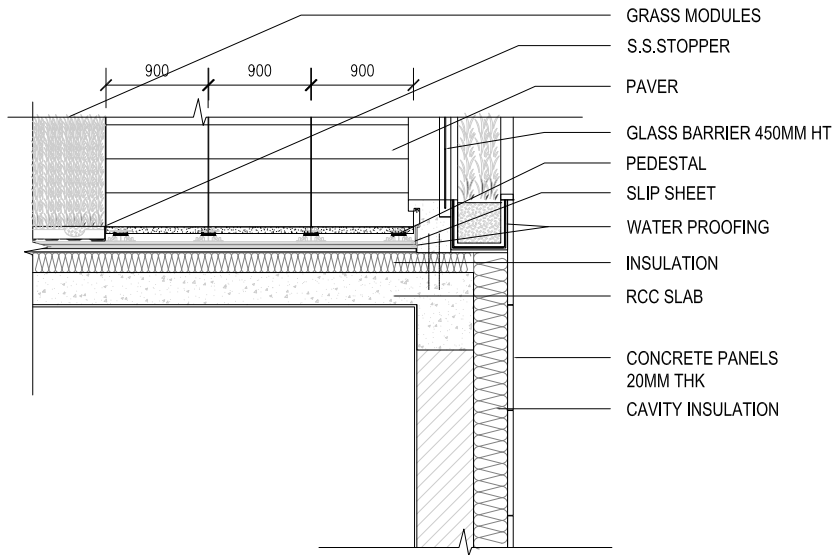
typical wall section  
CLT unit  
scale 1:50



The square on the east is seemingly a culmination of the east-west axis. However it is not so. The square is bound by a cultural building (art gallery) along with a restaurant and a beer garden. The restaurant building has a sloped green roof accessible from the square. The roof is seamlessly integrated on to the old Baroque wall, thereby allowing the visitors to pass through, to and from the Petrin gardens. A viewing tower is also associated with this building which provides breath taking view to the city.



Detail A



Detail B

## 7.4 Technical Report

Project: Structuring Porosity

Type: Master Plan and Adaptive reuse- Architectural intervention

Region: Strahov Stadium and surroundings, Petrin Hill, Prague 6

Development area: 336,578 sq.m

The project is divided into three;

1. The Inner City Quarter
2. The Stadium
3. The Outer City Quarter

### 1. The Inner City Quarter

This is the interior of the stadium. It is made accessible to public transport by a main access lane from Vanickova to Pod Stadiony cutting through the stadium from a lower level. Thus it brings the possibility of developing the interior of the stadium for alternative functions than sports training in the future, while maintaining the character of the stadium intact.

The Inner City quarter consists of mixed used buildings and several facilities associate with sports and recreation activities including hockey rink, gaming arena, sports goods shops, sports science university, hospital, gallery and museum and other shops for daily provisions. The ground level is reserved for letable business /commercial functions where as the upper stories are majorly residential.

The commercial functions are mostly along the North South axis and the East West axis which act as the high streets of the neighbourhood. Both these streets further penetrates to the Outer City Quarter through the Stadium.

### 2. The Stadium

The Stadium is the Genius Loci of the region. The giant degenerated cannot be loaded with heavy construction. Thus Stadium is made inhabitable by integrating prefab CLT( Cross Laminated timber) which are lightweight and can be mass produced offsite. This could be slotted in between the column grid. The regular grid structure of the stadium enables this possibility. In addition to the above mentioned advantage, CLT is a less carbon footprint product and thus is sustainable and eco-friendly . The cross lamination makes CLTs structurally stable and this can be used as structural floors and walls . These could be mounted with any finish.

In the residential units of the stadium, CLT is used as walls as well as floors. Inorder to make it fire resistant, the surfaces are coated with fire retardant varnish.

Another advantage of this method of construction is that repair or replacement is easier and fast with minimal damage to the stadium structure. Thus CLT is a convenient material to be used in the stadium block .

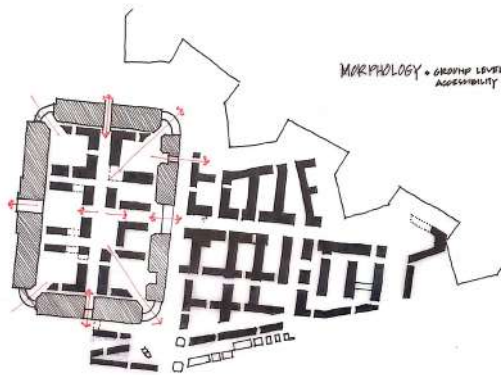
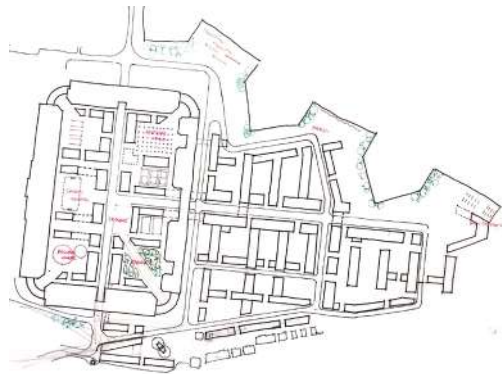
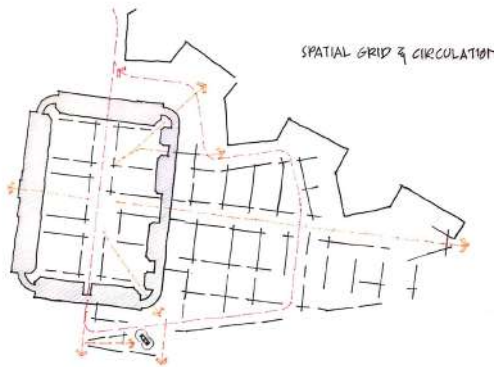
The facade recessed in and is fully glazed windows which allows to maintain the character of the stadium structure.

### 3. The Outer City Quarter

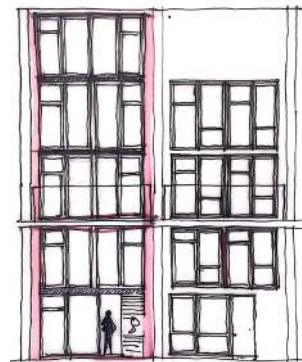
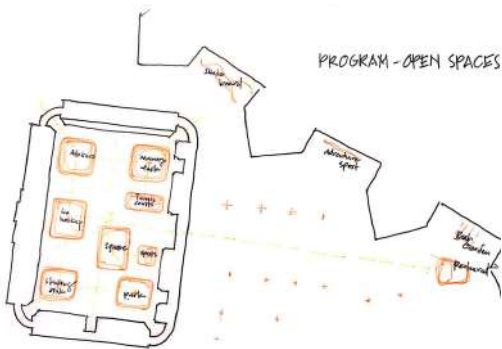
In the outer city quarter on the east, the structure of the existing student residence buildings are retained and the region is densified with more residential blocks. The blocks are developed such that a porous character is maintained thus allowing free movement across the open spaces.

This area is mainly accessed by the East West street from the Inner City quarter. The public transport is brought to this part of the neighbourhood thus providing the eastern part of the area better connectivity. both for the residents and the visitors.

The east west street culminates in a square bounded by a cultural building with multi-purpose space and a restaurant associated with a beer garden next to the Old City-wall. The area close to the Old Citywall is activated by installing skate park, childrens park. This becomes the transition point for the visitors to the Petrin Gardens and the monastery down the hill. The presently disconnected cyclist route is taken along the city wall looping it back to the in-line skating and biking trail of the Ladronka Park in the west.



## 7.5 Development Stages







physical model of the development

## 8.0 Conclusion

Densification is the need of the hour for the Strahov region. Being in close vicinity to the city, the region has immense potential for development as there is high demand for housing in the city. However developing just housing neighbourhood is not the right solution for the area. Being partially isolated due to the topographic location and accessibility, area calls for a mixed development for it needs to be self sustainable. As the current activities in the area is mostly related to sports and recreation, integrating them into the design is a viable solution which would give mutual benefits.

The massive stadium gives a perception of block allowing no passage. In order to utilise the internal area of stadium the decision was taken to pierce through the block thus making it porous and allowing a holistic development of region. The porosity is maintained while creating the urban grid. The porous master plan allows interconnected courtyards spaces between blocks.

Allowing a city to grow in the stadium and to spread out to the surroundings give a source of income to the city. It thus provides funds for stopping the stadium from further decay and for maintenance.





**SHERIN SUNNY VARIKKATT**

08 02 1988

Kerala, India

arsherin@gmail.com

Bachelor in Architecture, University of Kerala

Masters Student, Architectural Institute in Prague

Signature