

# Architecture Design II

Transit-Oriented Development (TOD)

Paris - France :

Boulevard de la Chapelle

Autumn Semester of 2020

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# Introduction

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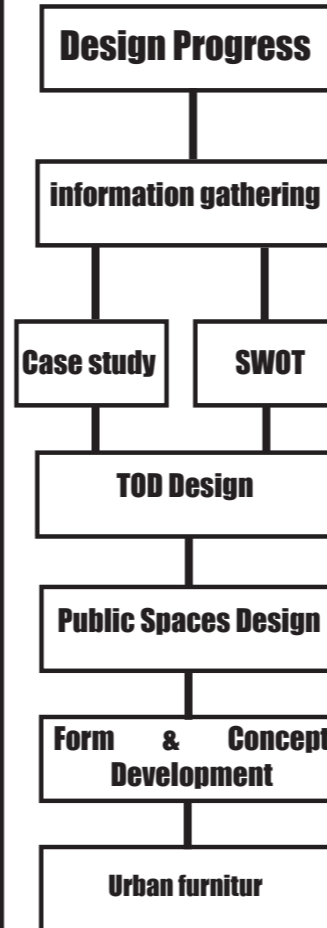
## Architecture Design II :

### Transit-Oriented Development

Our first goal in this project is to solve TOD in this area and create safe and defensible spaces for the public to easily access the public transportation system. also to explore their city without any problems.

Transit-Oriented Development helps make the public transportation system more efficient and improves urban spaces by reducing the volume of vehicle traffic for human presence in the city.

The first step is to identify the area and its strengths, weaknesses, opportunities and threats, The next step is to determine the status of the public transportation system and how accessible it is to the public, Then we will redesign the transportation system, especially the public transportation system, to provide conditions for people to have easy access to different places.



<b>Strengths :</b> <ul style="list-style-type: none"> <li>-Existence of metro line number 2 along the route</li> <li>- Existence of different uses such as residential, commercial, medical</li> <li>- Proximity to the 10th, 18th and 19th arrondissement</li> <li>- Spatial and scenic diversity along the route</li> <li>- Existence of necessary infrastructure such as metro route and bus lines</li> </ul>	<b>Weaknesses :</b> <ul style="list-style-type: none"> <li>- Lack of coordination and integration of vehicle routes</li> <li>- Lack of integration of pedestrian and bicycle paths</li> <li>- Not using all the capacity of the area and leaving parts of the plan unused</li> <li>- Old subway stations</li> <li>- Uncertainty of the bus route and its interruption by the car route</li> <li>-Lack of public spaces</li> <li>- Uncertainty of car parking space</li> <li>-Low width in some areas</li> </ul>
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<b>Opportunities :</b> <ul style="list-style-type: none"> <li>- High ability of the area to create public spaces</li> <li>- Communication with different district and streets</li> <li>- Metro station above ground level that increases the sense of security in the station and the it's neighborhood</li> </ul>	<b>Threats :</b> <ul style="list-style-type: none"> <li>- Possibility of creating unsafe spaces according to the conditions of the area</li> <li>- The huge structure of the subway that has been abandoned in some places and has become a place for the homeless</li> <li>- Existence of groups of young people in need of attention who have announced their presence with graffiti</li> </ul>
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# Site Analysis

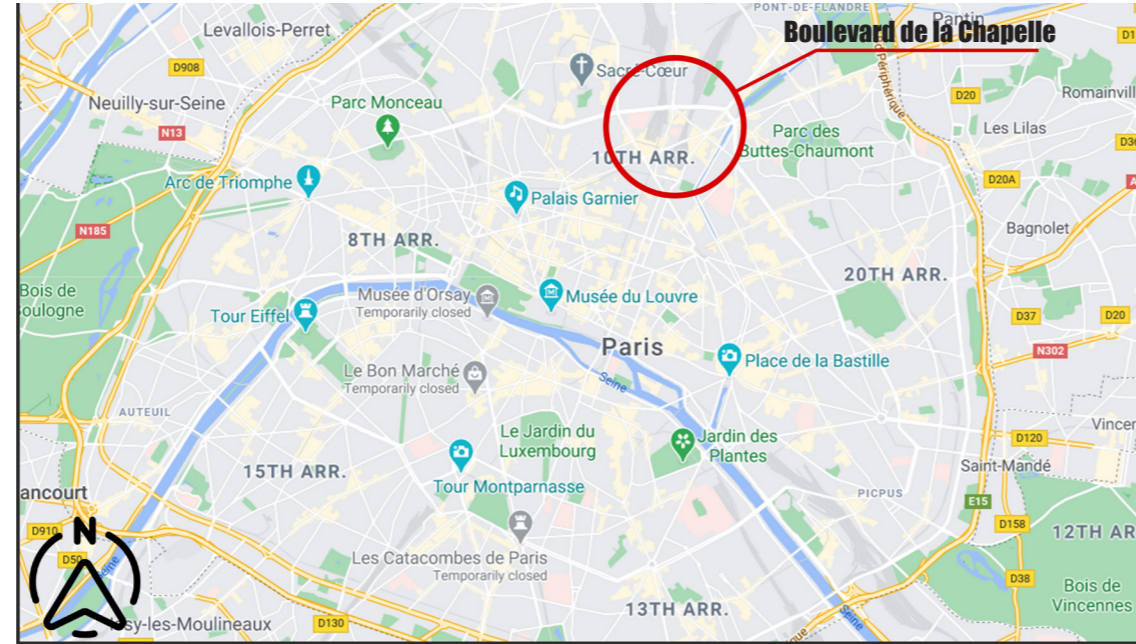
## Site Location :

**Boulevard de la Chapelle, Paris, France**

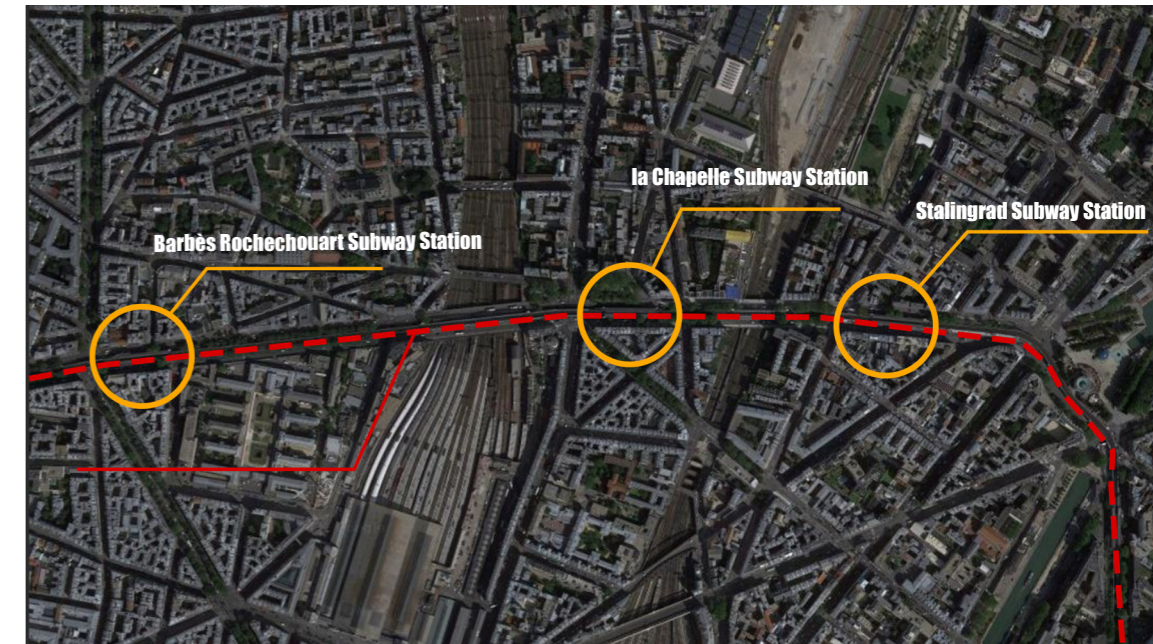
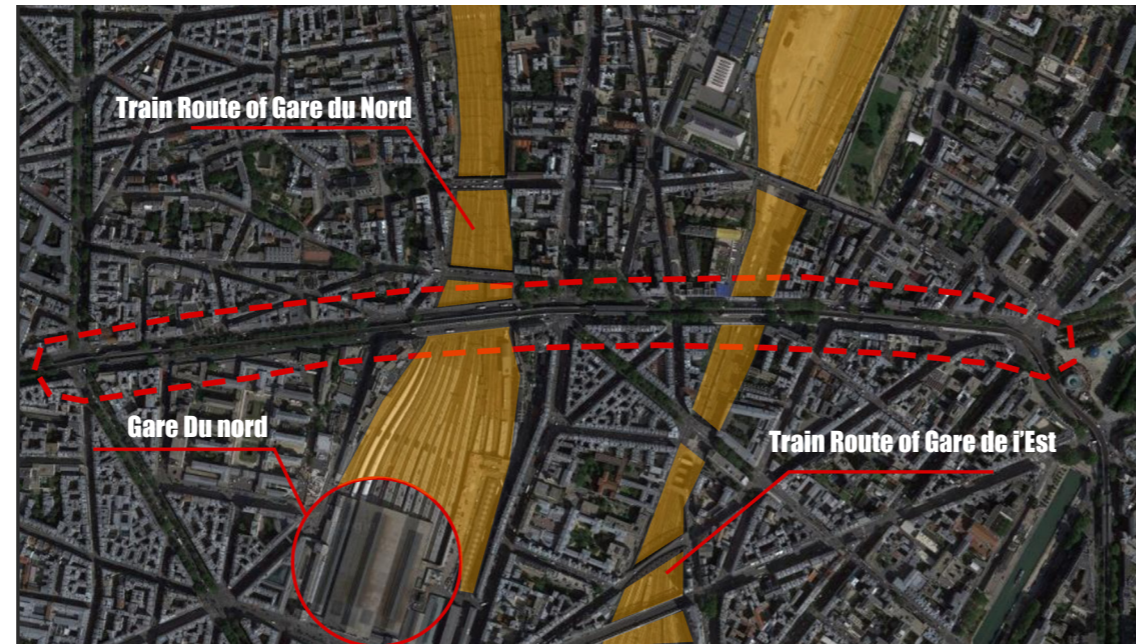
**Boulevard de la Chapelle is the northern border of the 10th arrondissement of Paris, it is also the Southern border of the 18th arrondissement.**

**There are several important points in this area. Train route of Gare Du Nord and Gare de l'Est pass under this boulevard. Also, metro line 2 passes through this Boulevard which is above the ground.**

**They are 3 Subway station in this boulevard: Barbès Rochechouart at west and close to Magenta Street. La Chapelle In the middle of the boulevard and Stalingrad at East**



Paris - France





### Some problems of Area:

- 1- Non-integrated public transport lines ( specially for buses )
- 2- Non-integrated bicycle Line
- 3- Irregular parking space
- 4- Lost Spaces under subway line wich is dangerous for people
- 5- Interruption of the pedestrian path

# TOD

First, the bus stations were located according to their distance from each other.

In this boulevard, the width of the street is different in some places.

For TOD we identified 5 important locations.

**A: General Section for TOD**

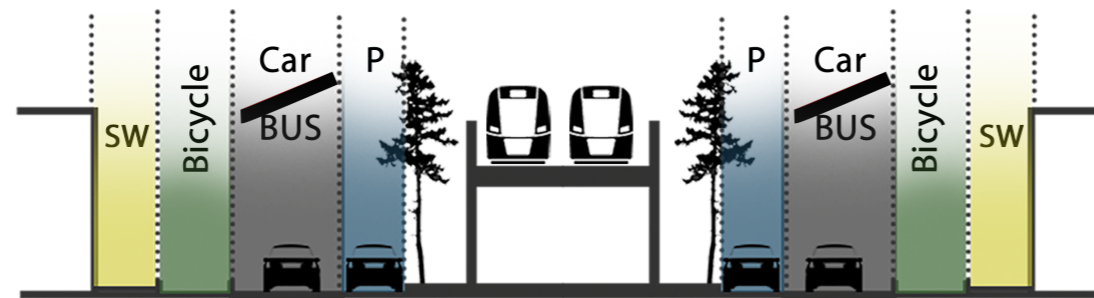
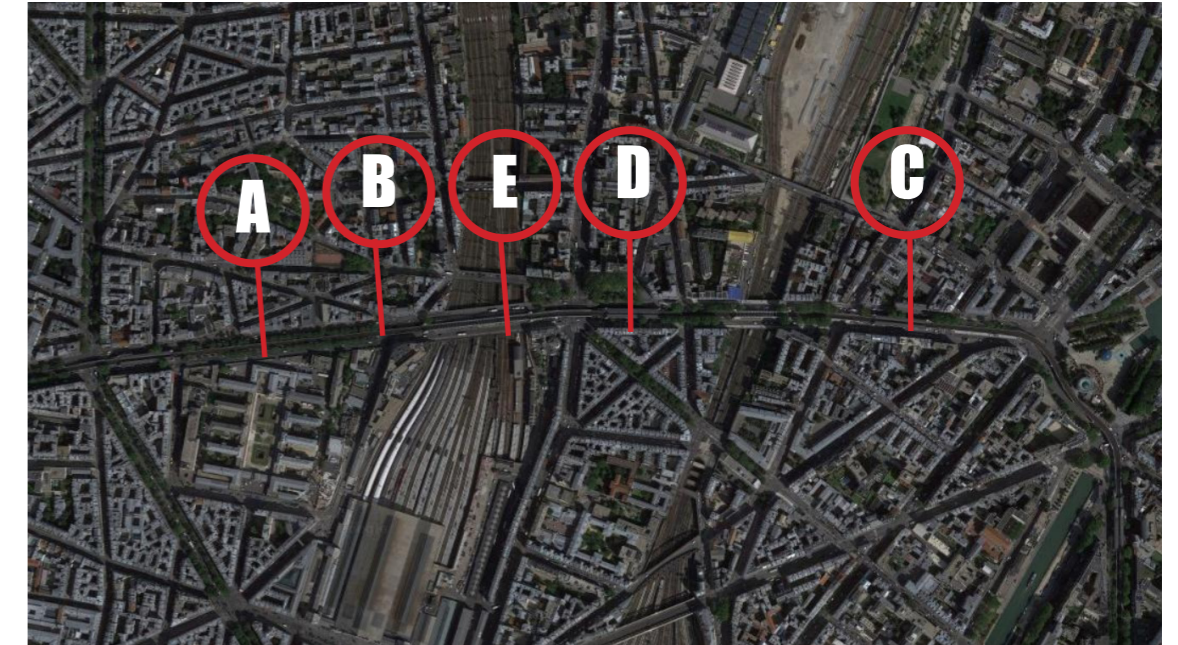
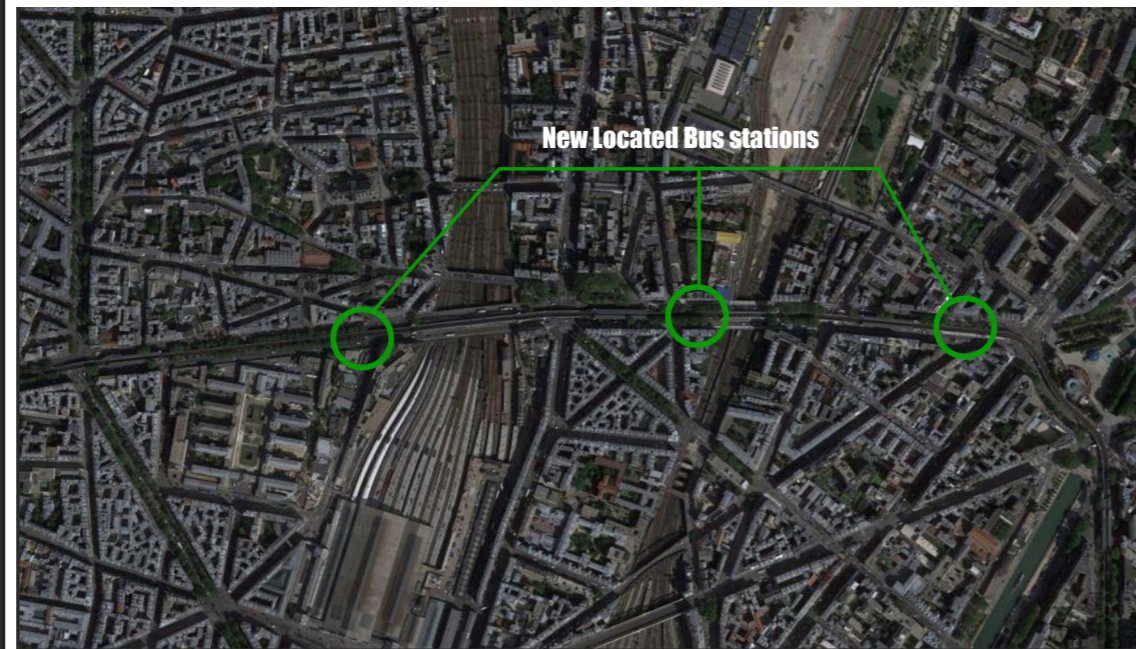
**B: TOD section at Bus stations**

**C: TOD Section at Barbès Rochechouart and Stalingrad Subway Stations**

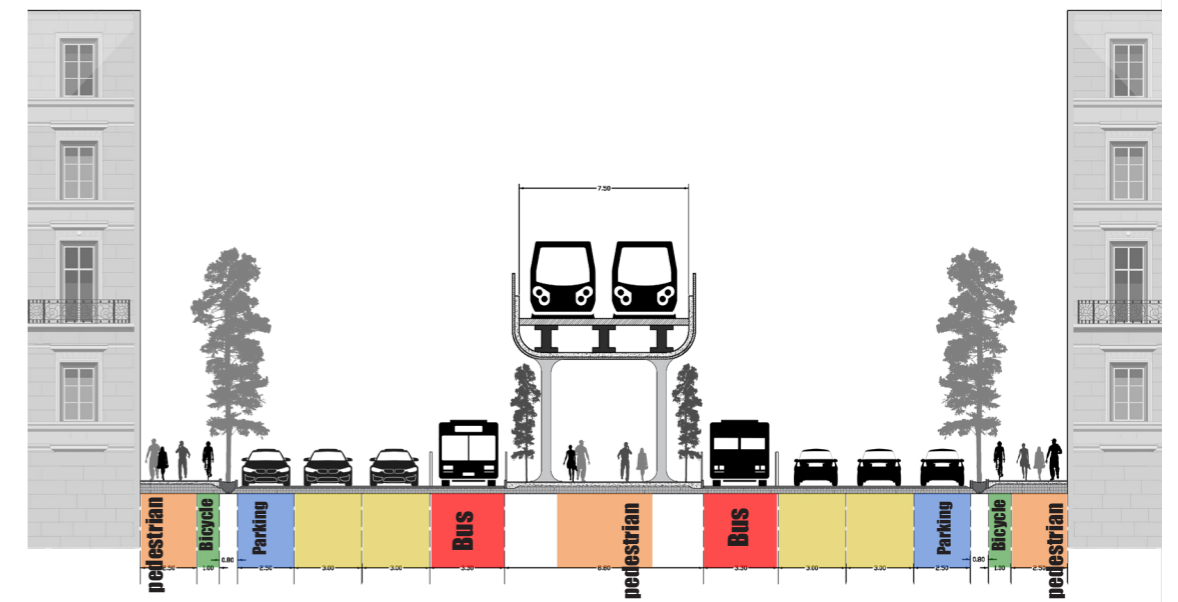
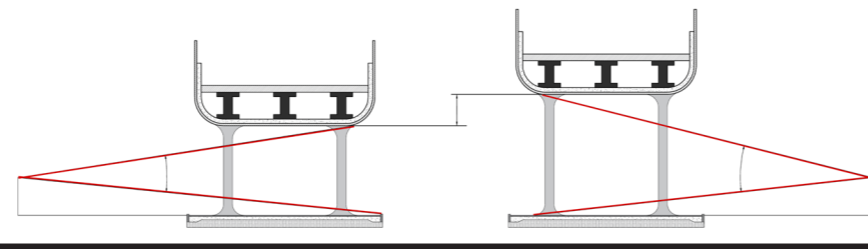
**D: TOD Section at La Chapelle Subway Station**

**E: TOD Section at Designed Plaza ( Will be presented later )**

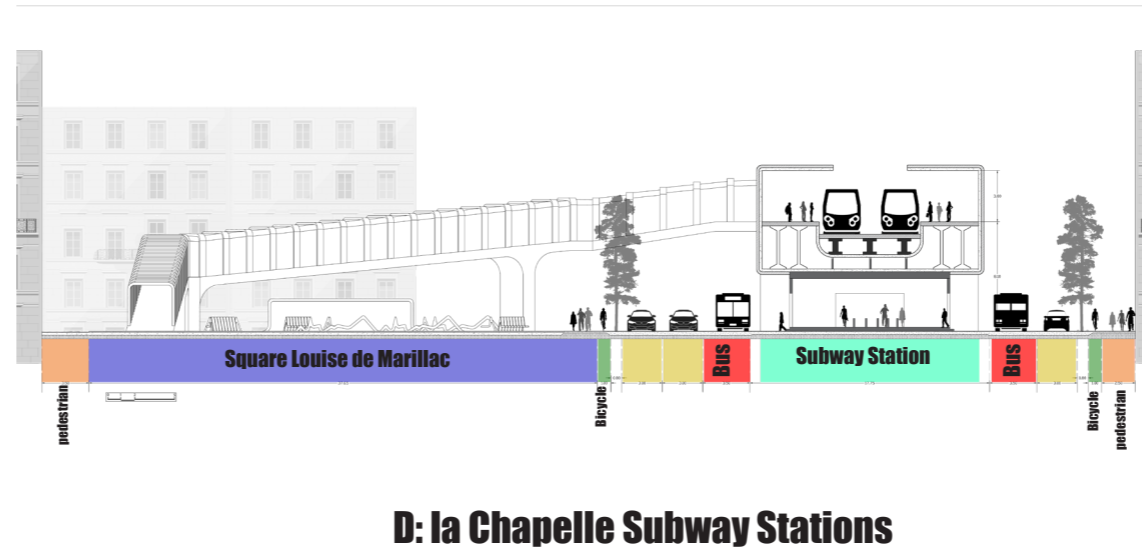
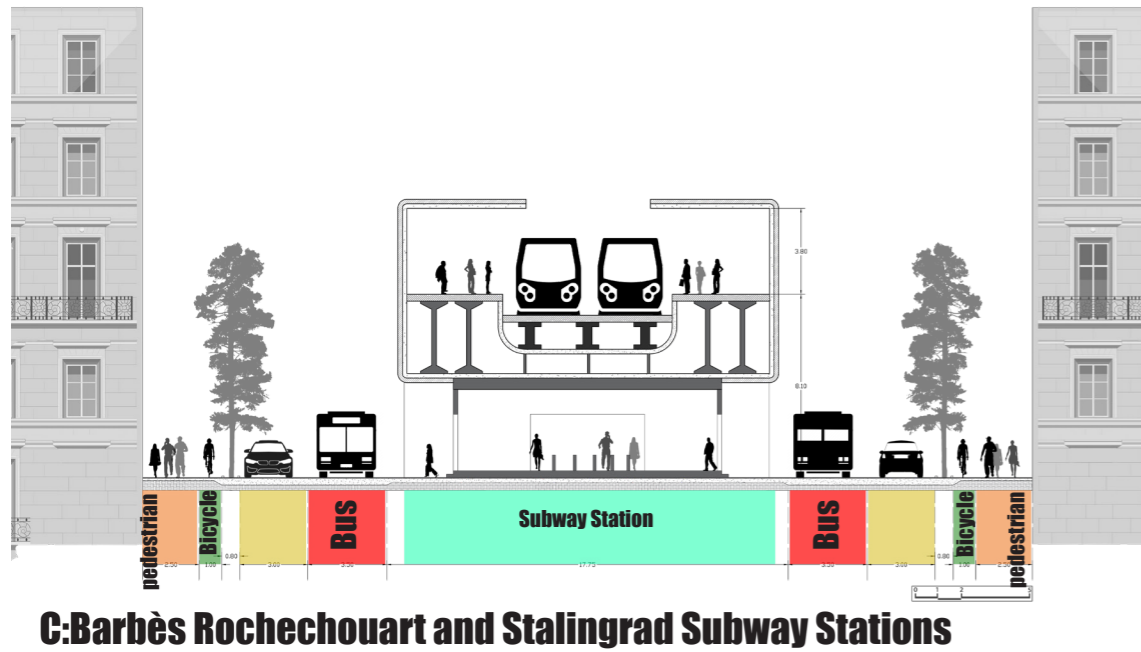
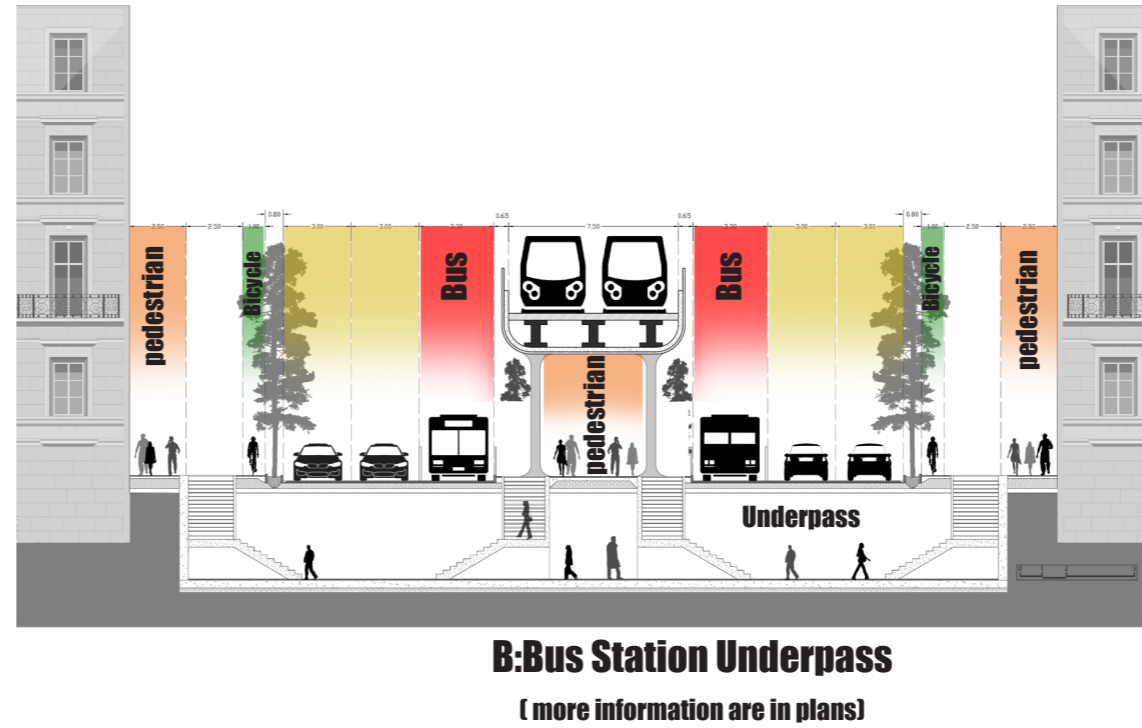
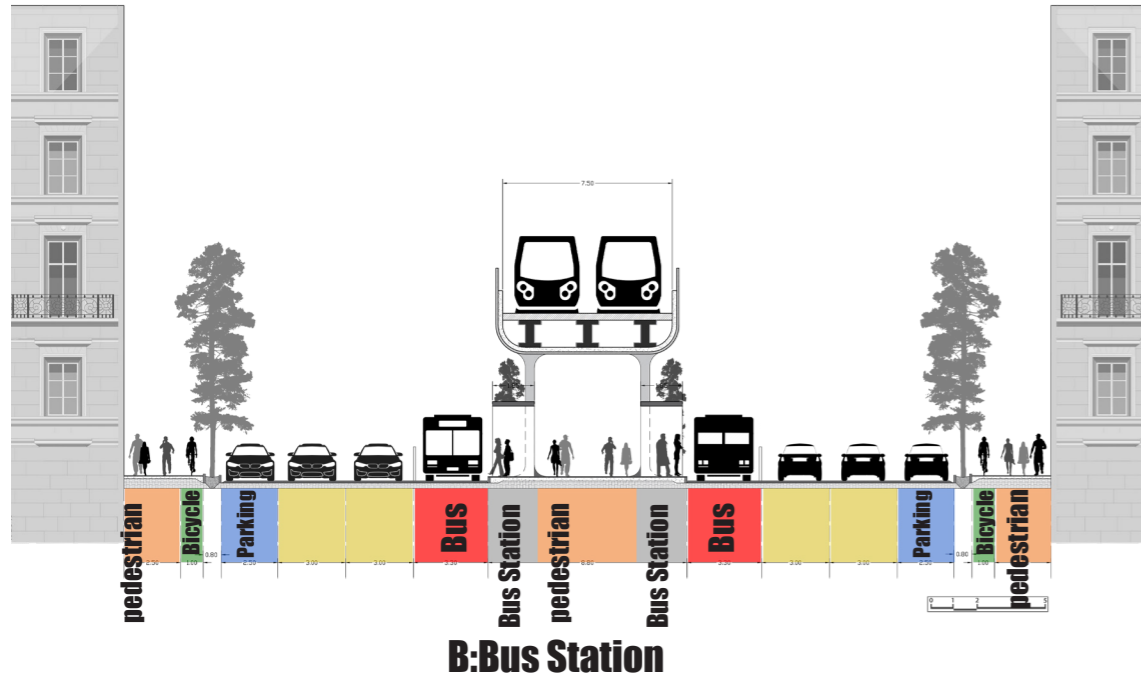
Increasing the height increases the visibility of people compared to the other side of the street. Therefore, in the new design, the height of the subway route has been increased



Current Situation



**A:General TOD Section**



# TOD

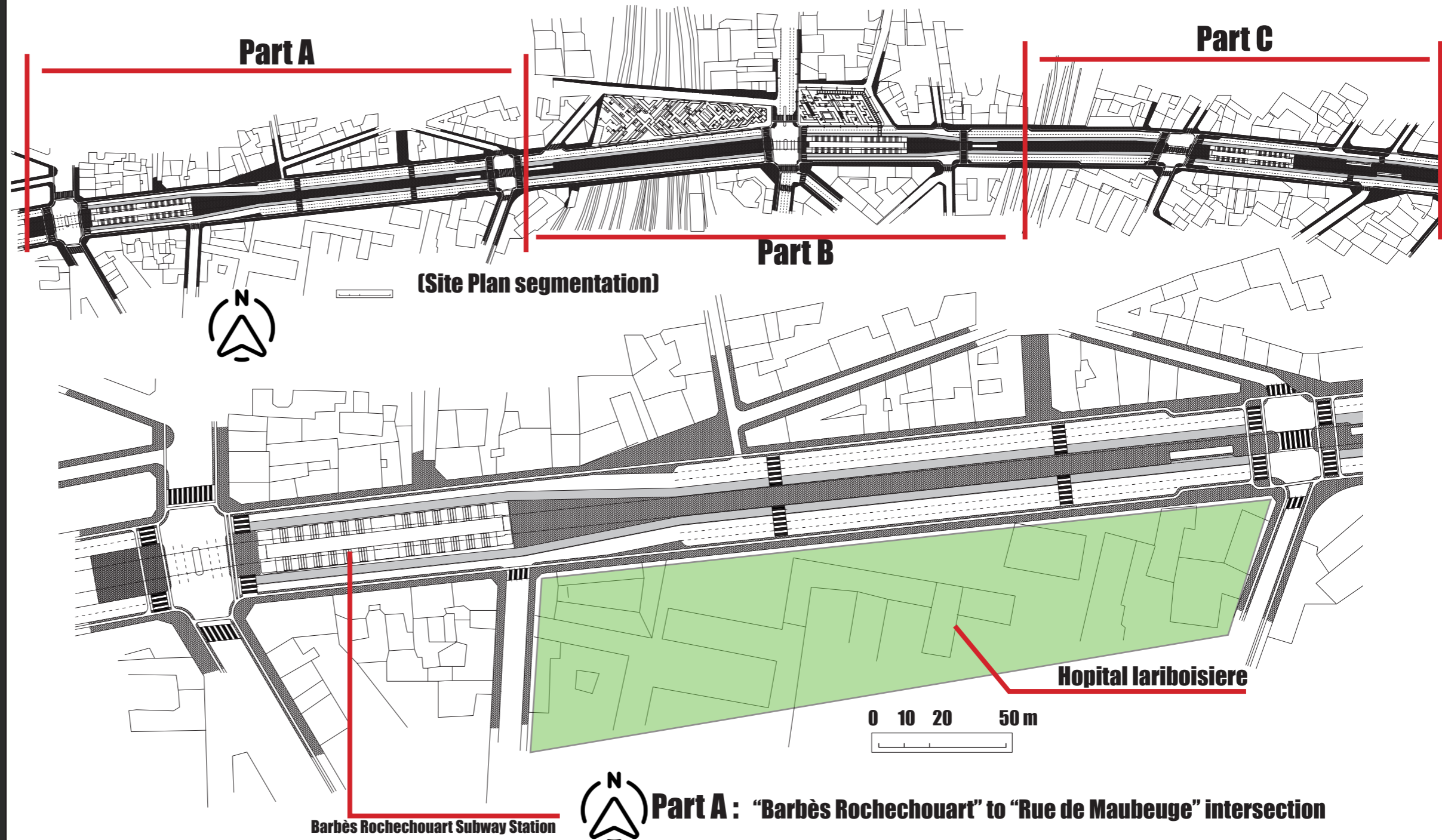
## [ Sections ]

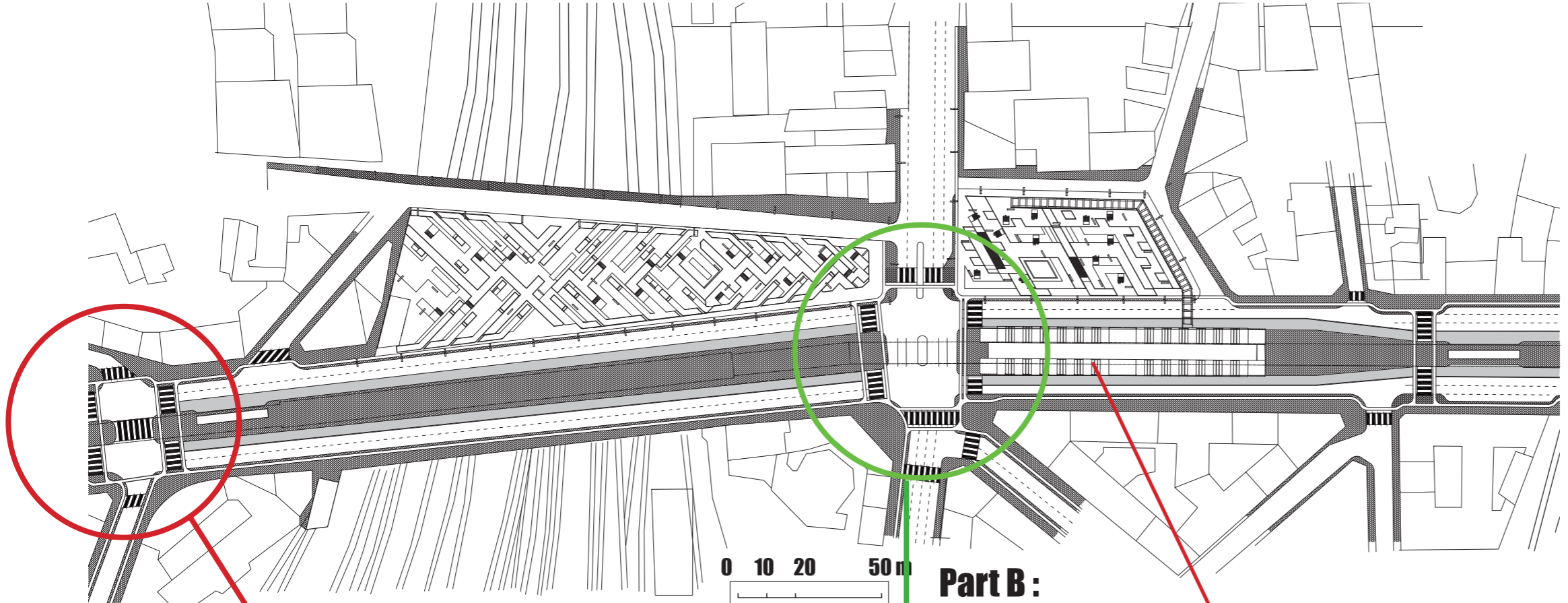
One important tip in this design is that we need to use a special type of buses that can pick up and drop off passengers from both sides because bus stations are in the middle of the Boulevard, this decision was made so that the bus route and parked cars would not collide anywhere.

# Site Plan

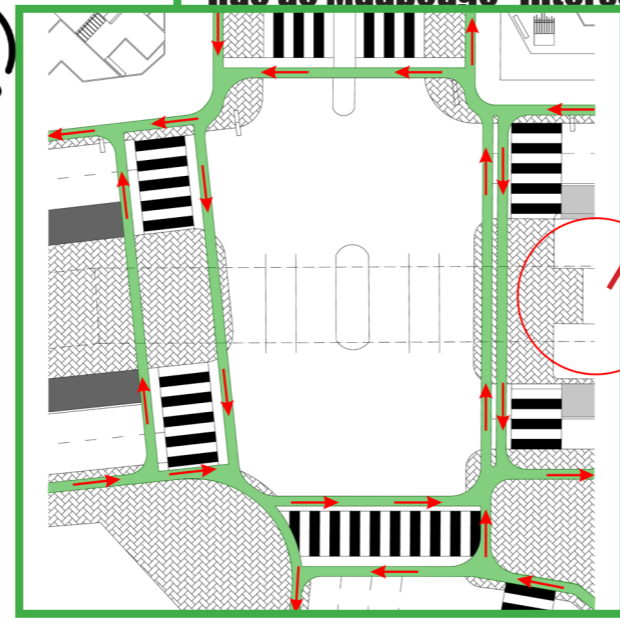
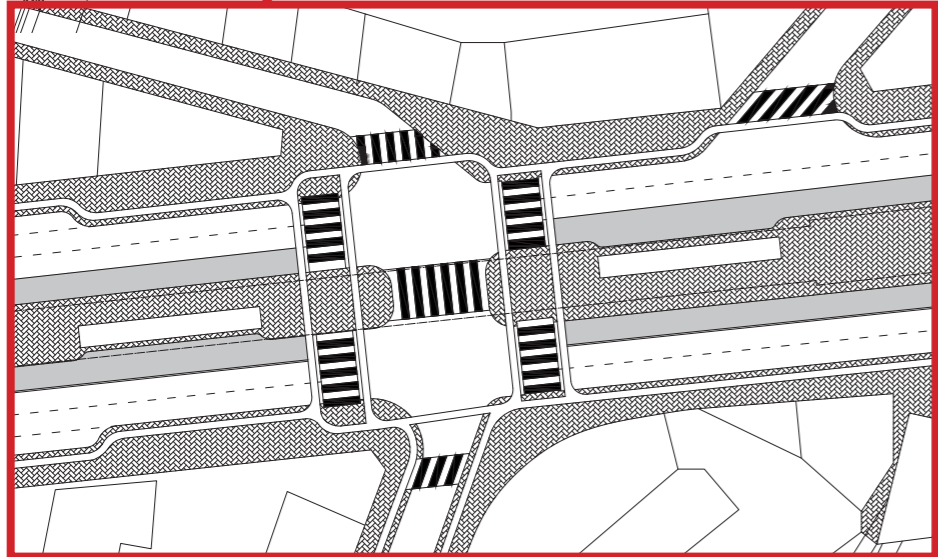
The site Plan is designed bases on TOD Sections and we tried to Connect these different sections properly to each other. The priority is Pedestrians, after that bicycle line and its Integrity.

This area has a special capability which is long Space under La Chapelle Subway (Line 2), parts of this space are used as a temporary retail Store and Retailers sell their goods.





**Part B :**  
 “Rue de Maubeuge” intersection to la Chapelle Subway Station



La Chapelle Subway Station

**The bicycle path and direction are designed for greater speed and safety. Efforts have also been made to reduce bicycle interference with pedestrians and vehicles**

**Part B :**

**Part B is where we focus on this project because of its potential for public spaces and its good ability for public transportation.**

**Strengths :**

- 1- Existing public spaces**
- 2- Shopping Stores**
- 3- Residential neighborhood**
- 4- Powerful communication node**

**Threats :**

- 1- Unsecured spaces under bridge**
- 2- High traffic risk**



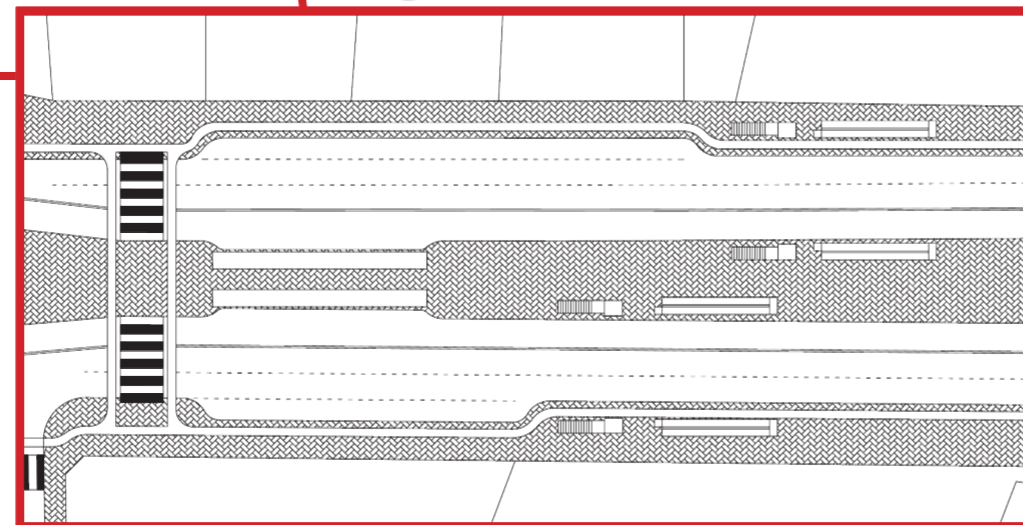
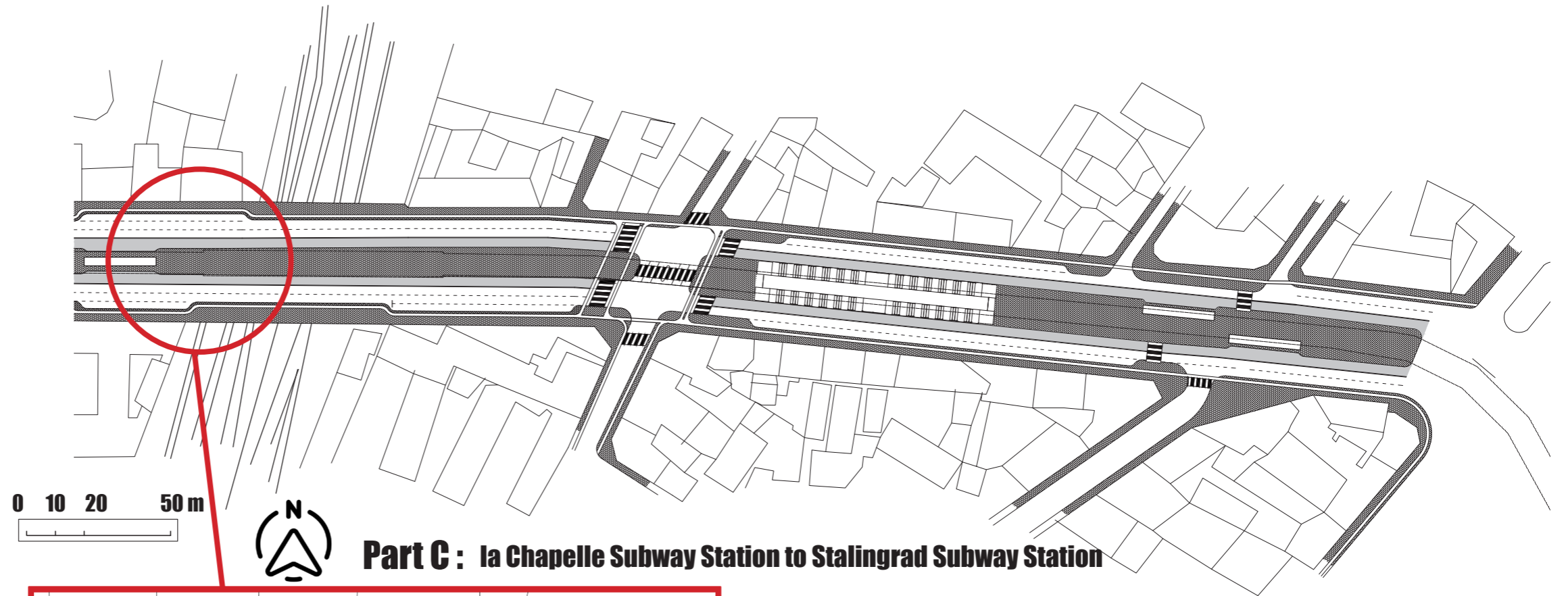
## Part C :

Part C is only Part of Project which is in connection with 3 arrondissement of Paris, 10th. arr at south, 18th. arr at north-west and 19th arrondissement at north-east.

The subway route still continue in border of 10th. arr and 19th. arr after this section.

This part, like Part A, has a Entrance and Exit role for de la Chapelle Boulevard.

Bus stations are in the middle of the boulevard and its a need to have different types of equipment for everyone. as it is near to one of the bridges we have enough space to build an underground pass for those who don't want to cross from the street.

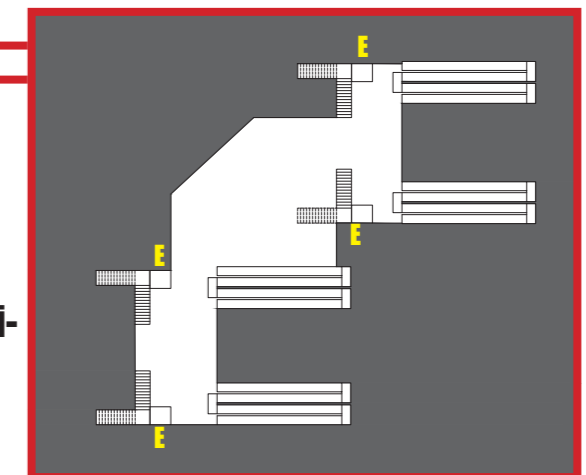


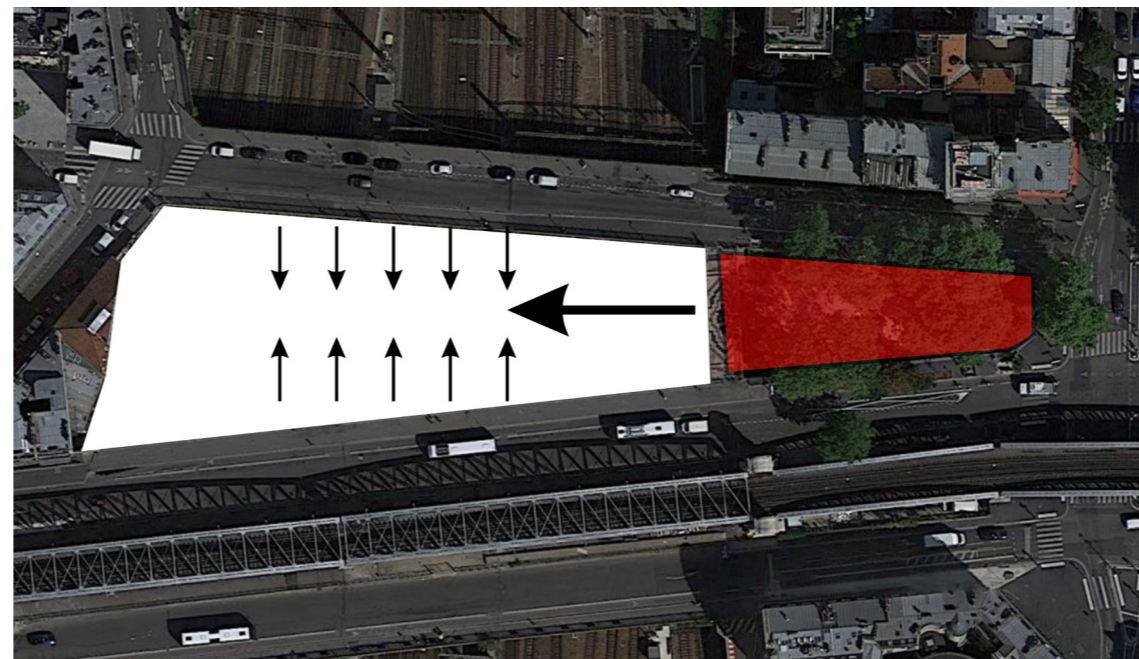
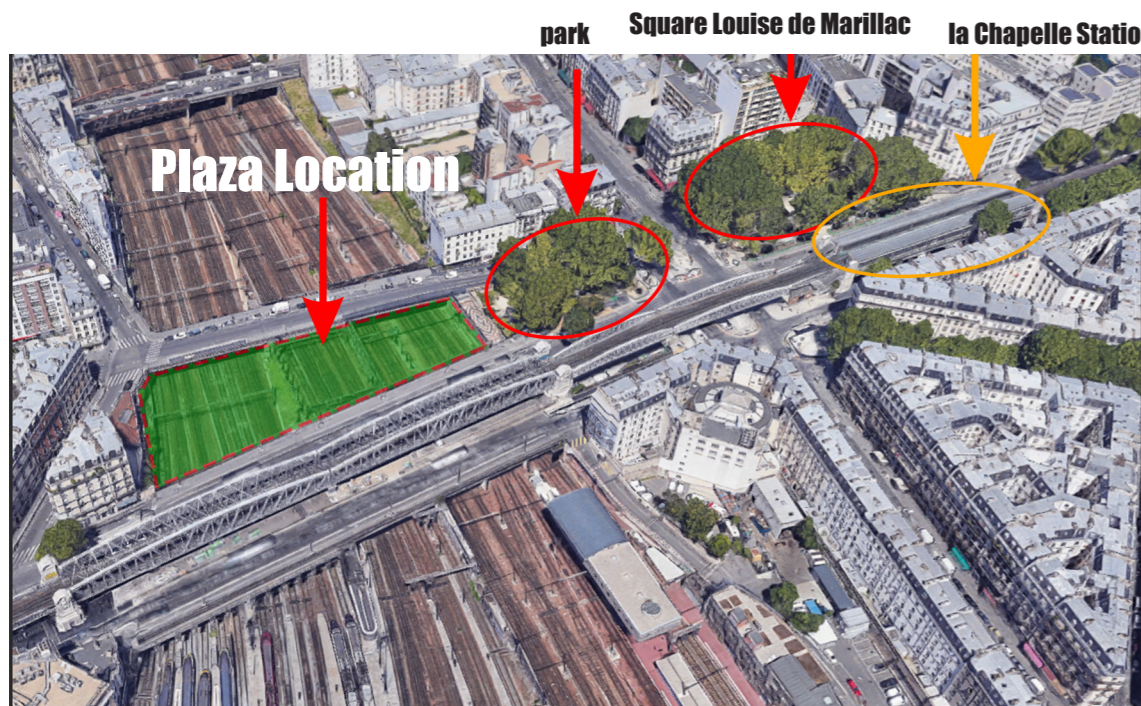
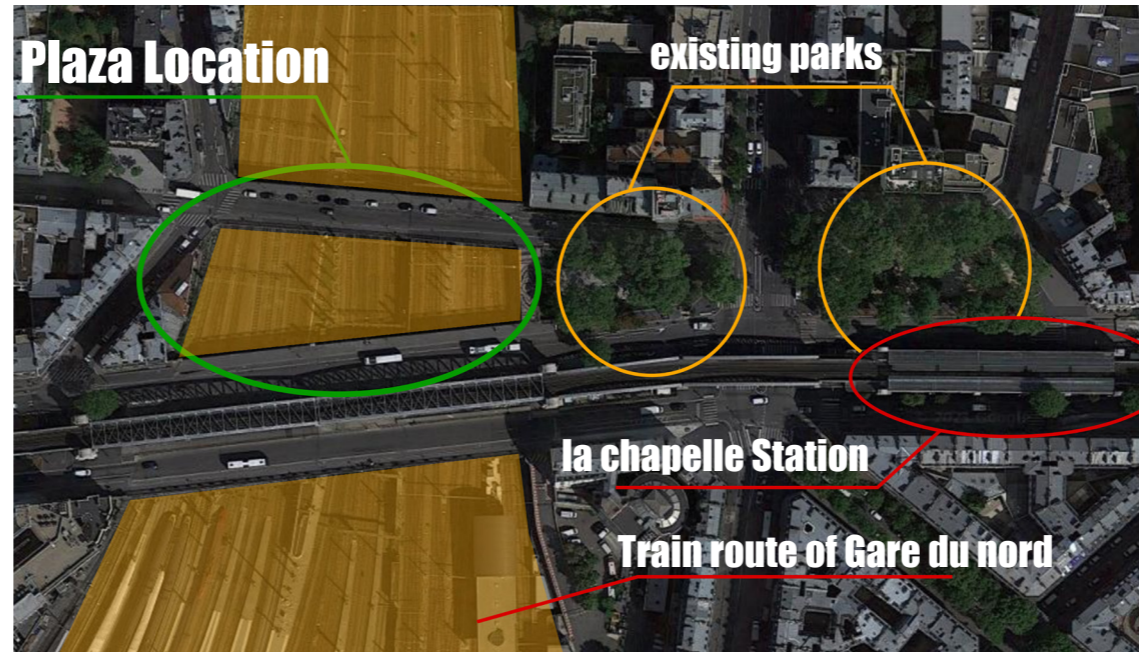
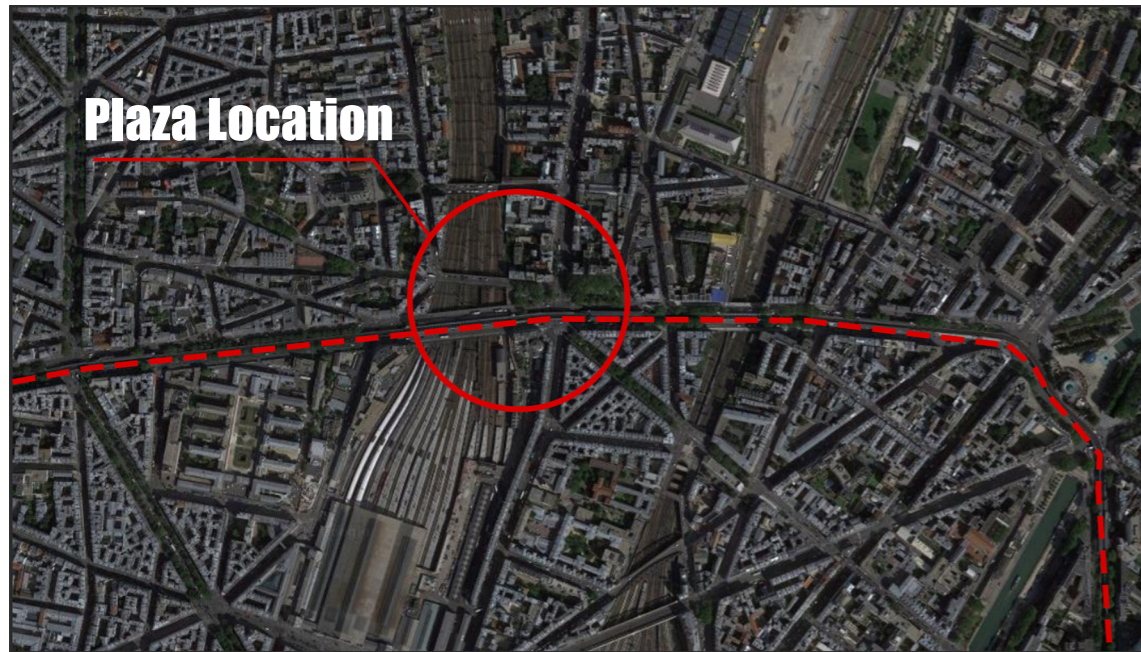
**level -1 :  
-4.5 m**

**4 Elevators (E)**

**4 physically-handi-  
capped ramps**

**4 Stairs**





## Plaza Location

This plaza is located between two bridges that pass above the train route of Gare du Nord, the first bridge has a subway above ground.

This Plaza can work with two other parks on the east side. this plaza is near to residential building which can make it a DEFENSIBLE SPACE.

Also, it is near to LA CHAPELLE subway station that can ensure the presence of people

## Concept

For the First Step, we need to cover the void between two bridges. The next step is to CONNECT the new space to its context and neighbors and bring people to the Plaza.

The Concept required a series of forms to motivate entry.

The first Idea was to design some lines on the ground to guide people into the Plaza.

## Concept Problems:

**BUT** the biggest problem with this plan is that it creates unknown and uncontrollable space under the bridges.

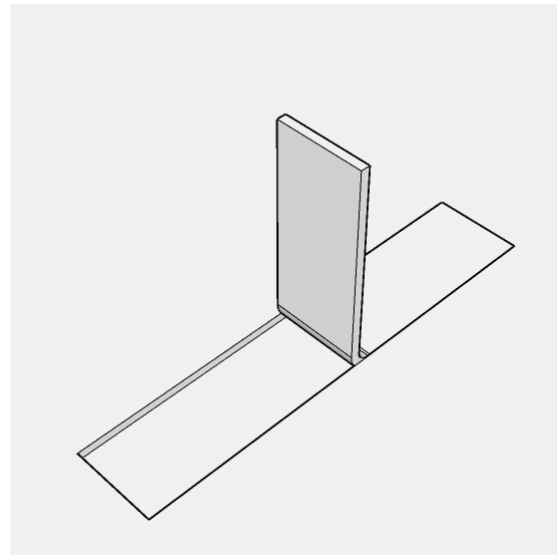
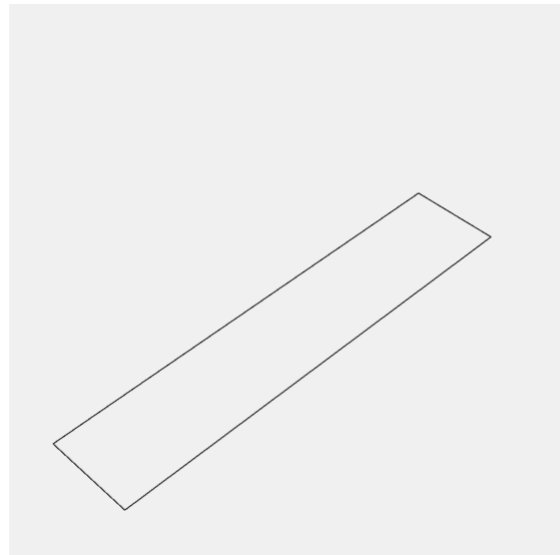
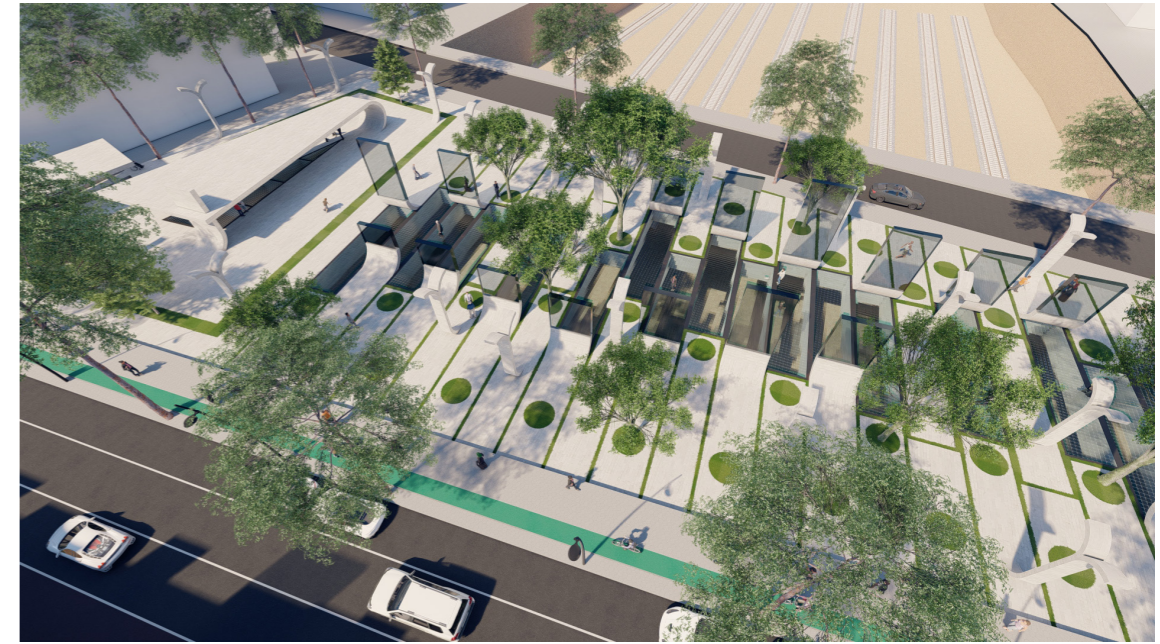
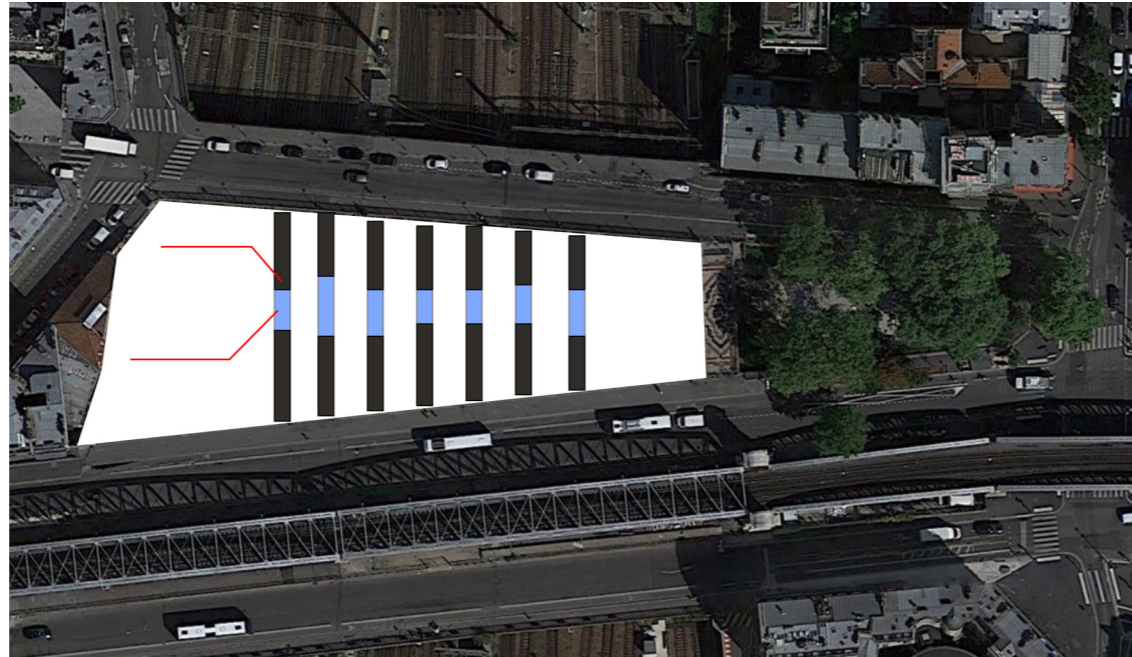
we need a way to **Control** the space under the bridge and make it a **Defensible Space**

## Solving the problem:

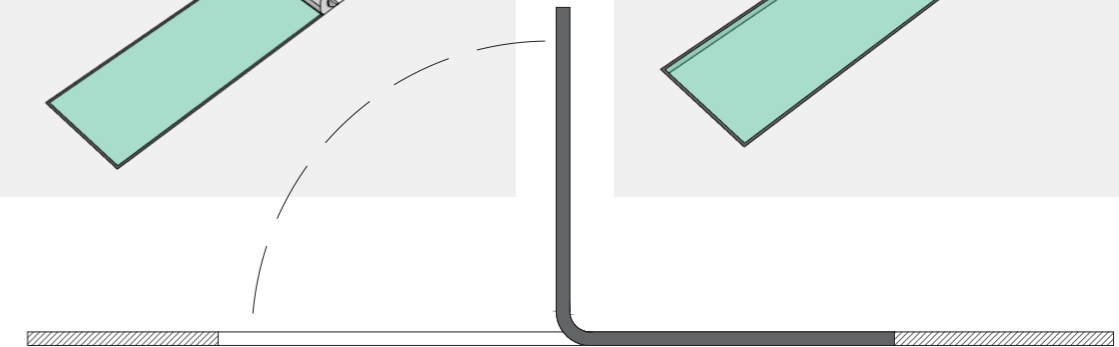
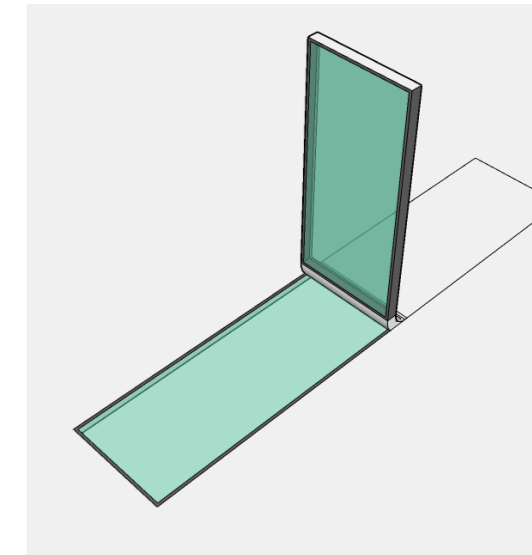
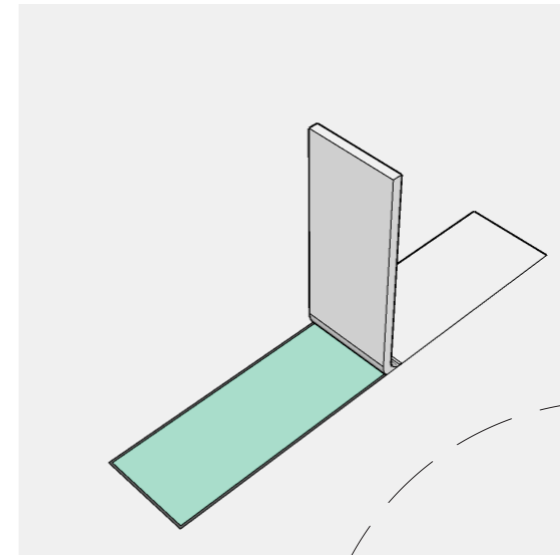
A layer of **Ground** separates as a shell and moves upwards. It provides an area that is empty of ground. This area can cover by strong glass and this mode provides monitoring under the bridge by people who are in **Plaza**.

These long plates are somewhat reminiscent of the train tracks that run beneath it.

To prevent obstruction of vision, the raised plates themselves are made of glass that does not block the viewer's horizon

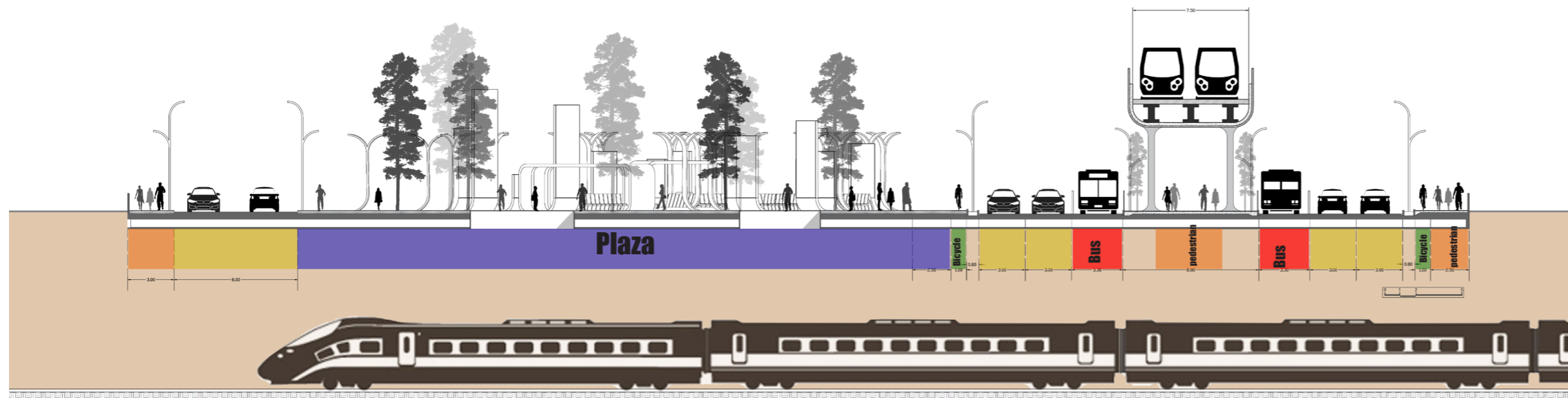
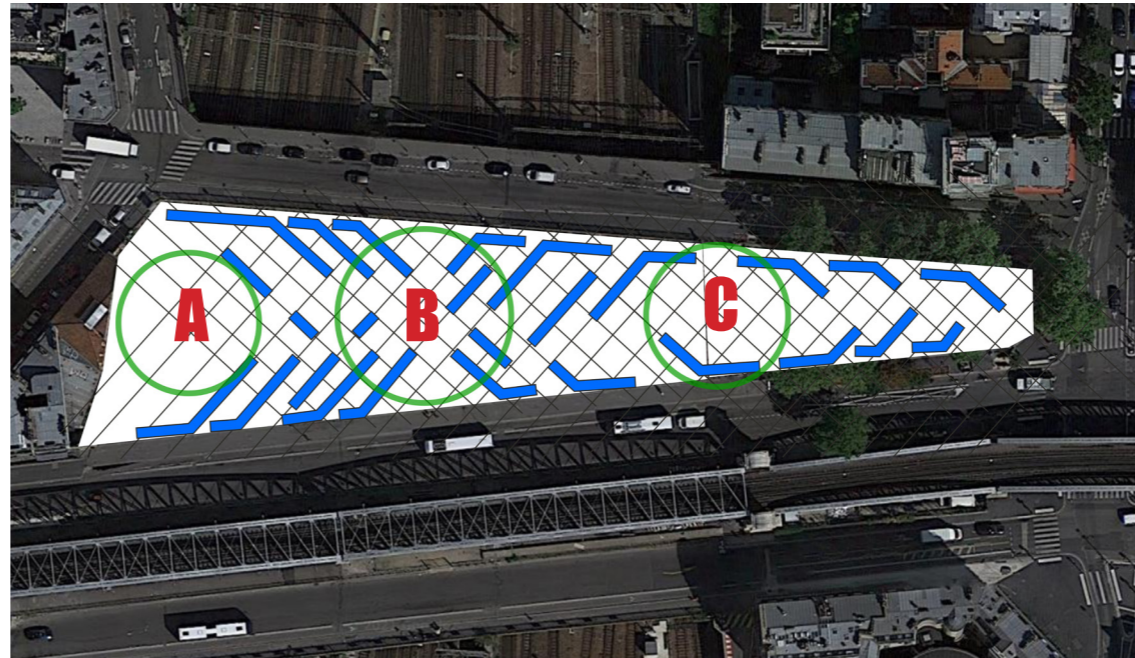


**Development of Concept**





**Diagonal grids**



## Concept Development

The next step is to develop the design to make it more appropriate. For this purpose, a network of diagonal lines was designed which was used as a guideline.

Then Three important place marked to provide three functions:

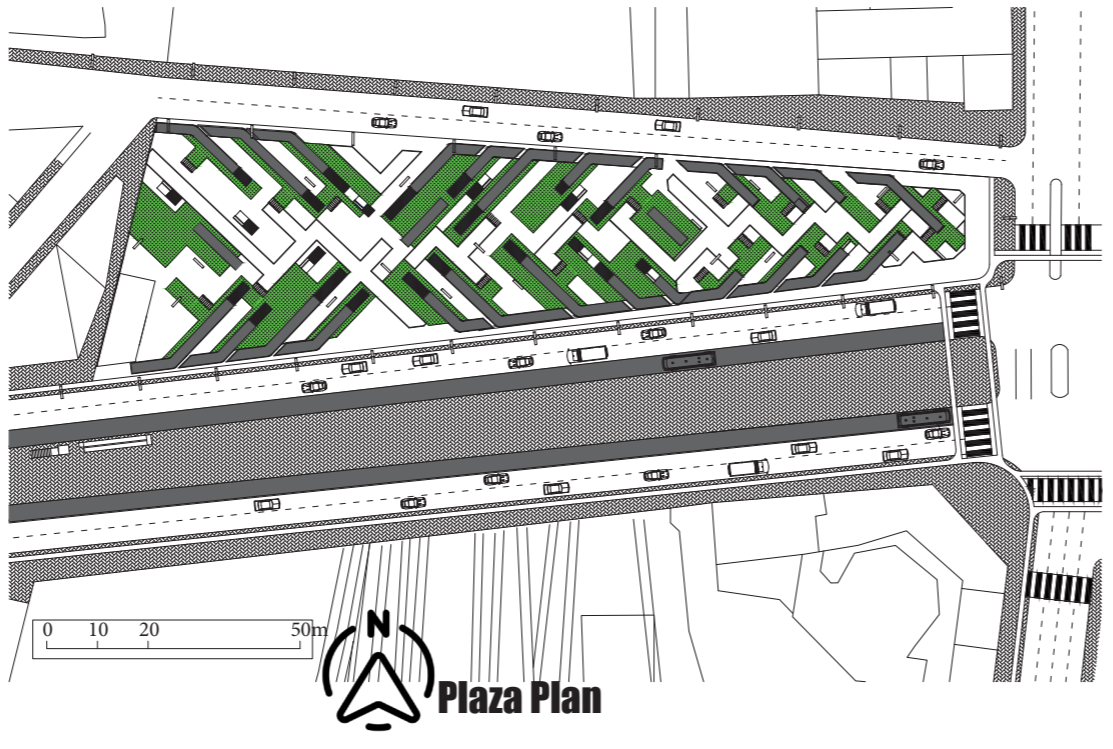
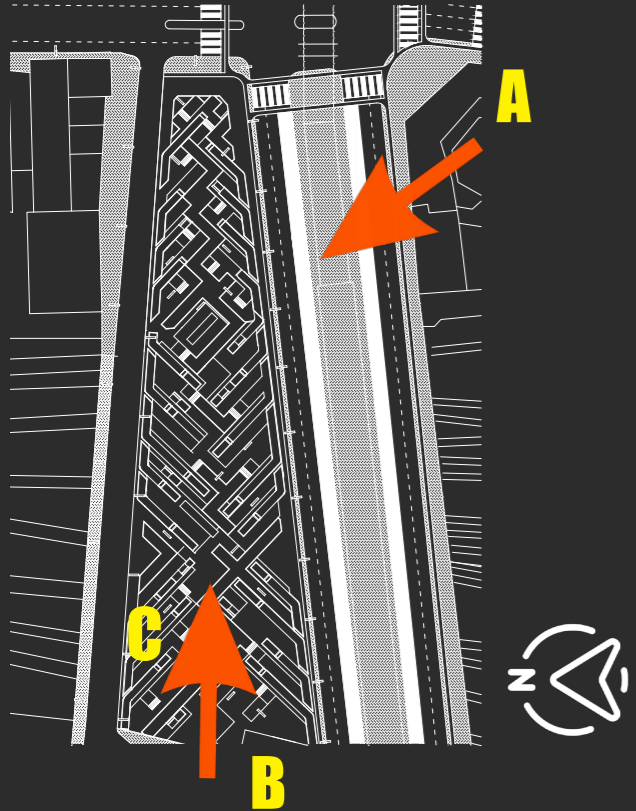
**A: Children's playground:** it can be controlled from residential building around

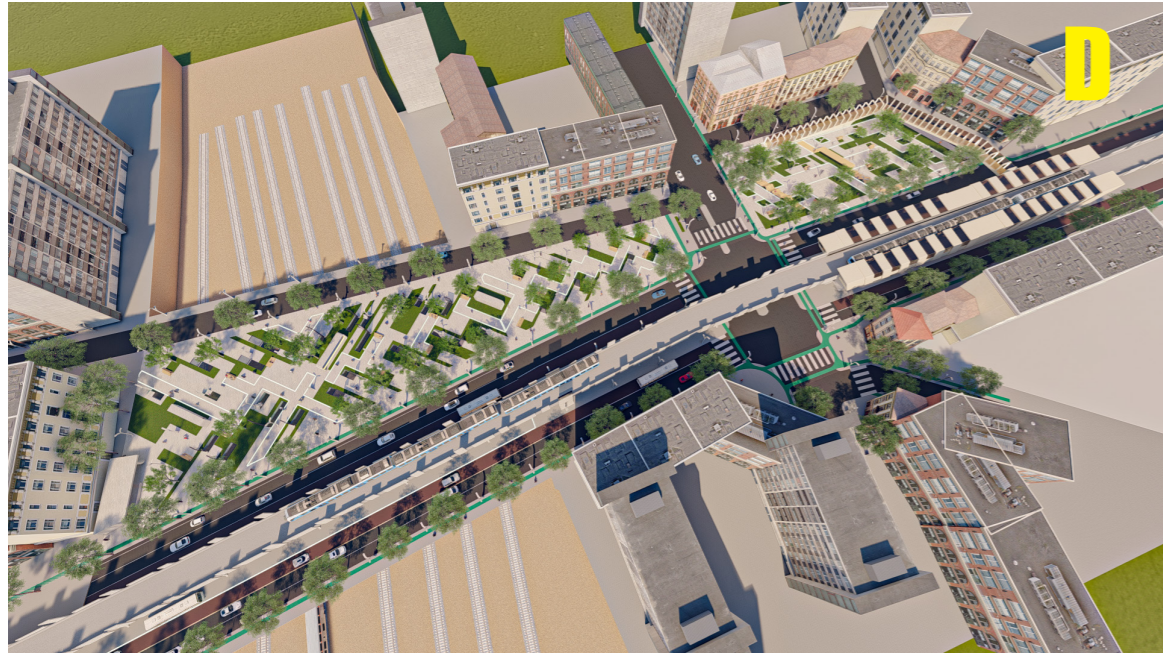
**B: Multi-Function Public Space:** Which can accommodate street artists or social activities

**C: book Cafe:** A space to relax during the day under the shade of trees and perhaps read a book

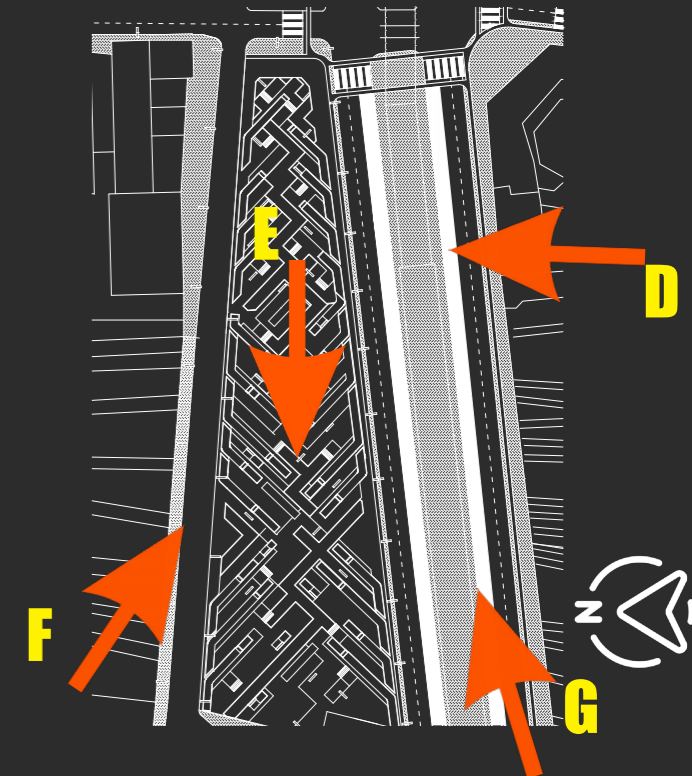
As this space is an annex to the two bridges, there is no space for car parking to maintain safety.

The guide network shaped the uprising shells and the floor. Green areas and floor lighting follow the guide grid. Folding shells define the spaces required for the intended uses. Plaza benches and lampposts have also followed the concept of shells upraised from the ground. (on the last page you can see them in a table)





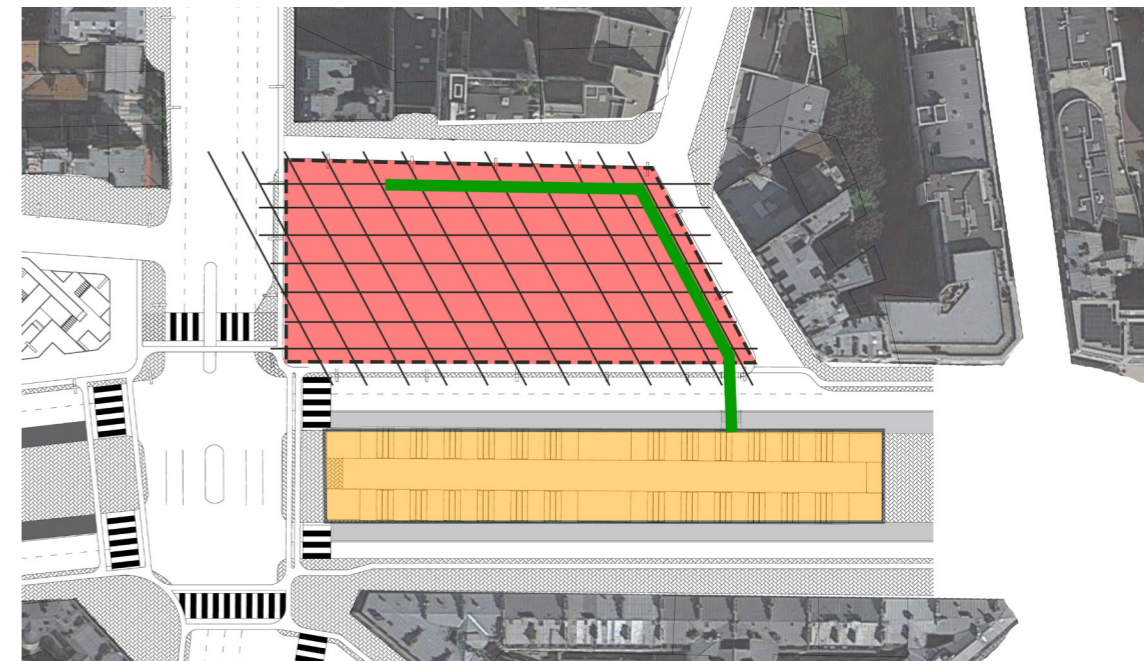
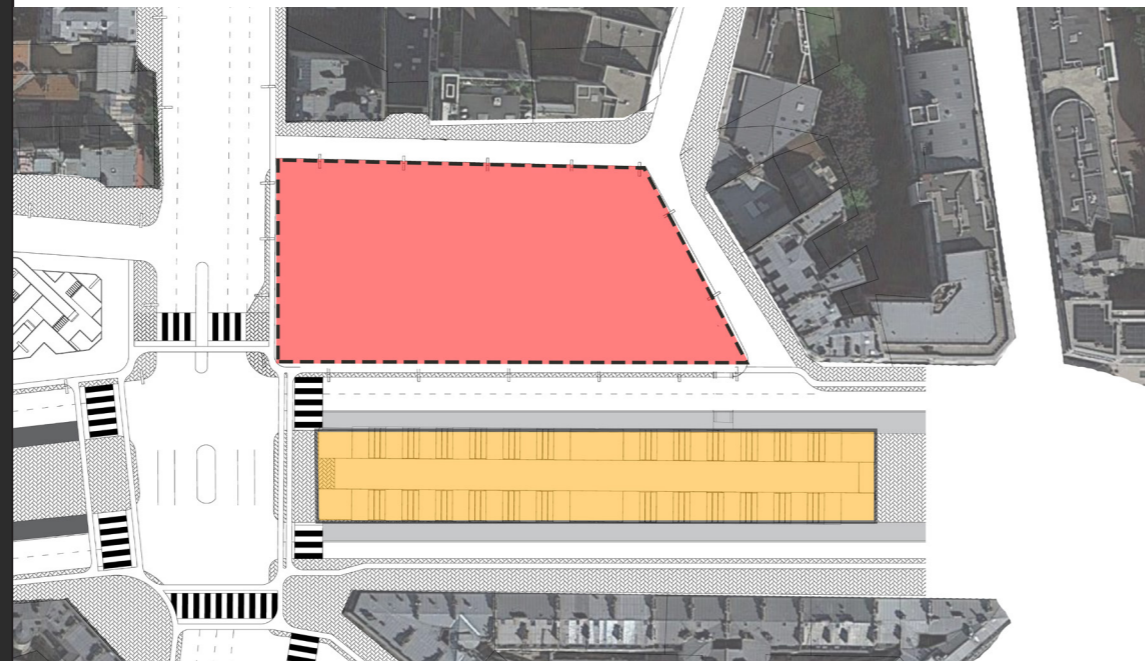
Since the grid lines are diagonal, it is possible to see people from different angles from different spaces, and sitting on different benches offers different angles of view. Vertical glass panels can also be used to install temporary works by artists and temporary street exhibitions.



# Second Plaza :

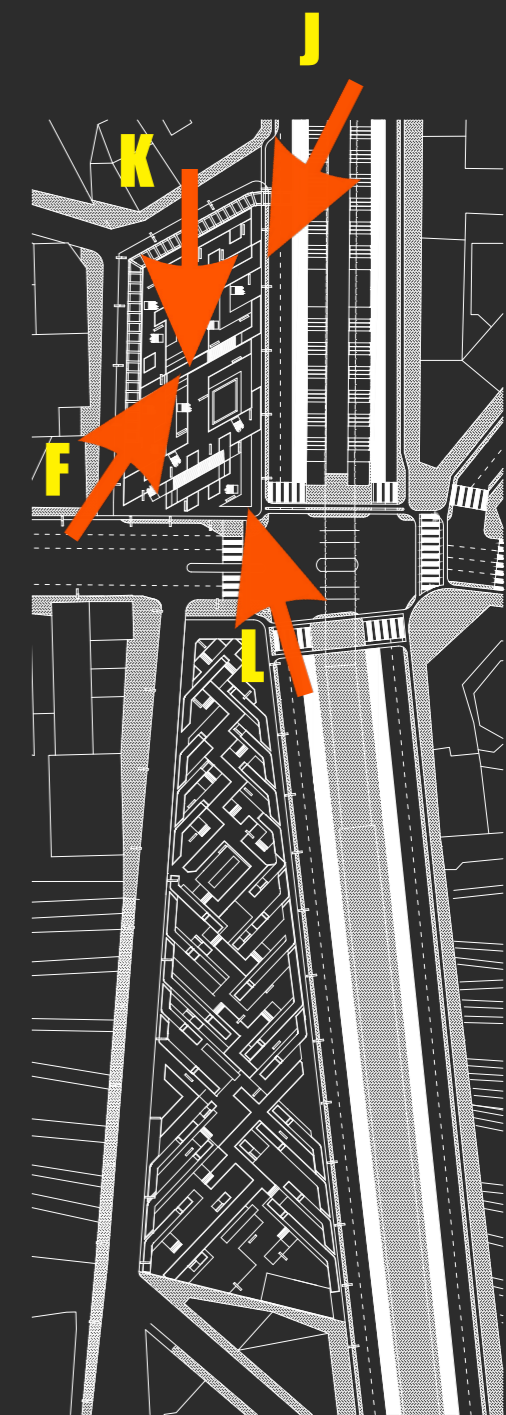
## Square Louise de Marillac

This park is an old place in this neighborhood. In order to provide a ramp for Dalashapel station for emergencies, a ramp moves from the border of this park and reaches the station. To avoid creating an unsafe space in this ramp, this ramp has been turned into a ramp-gallery and other people can use it too.

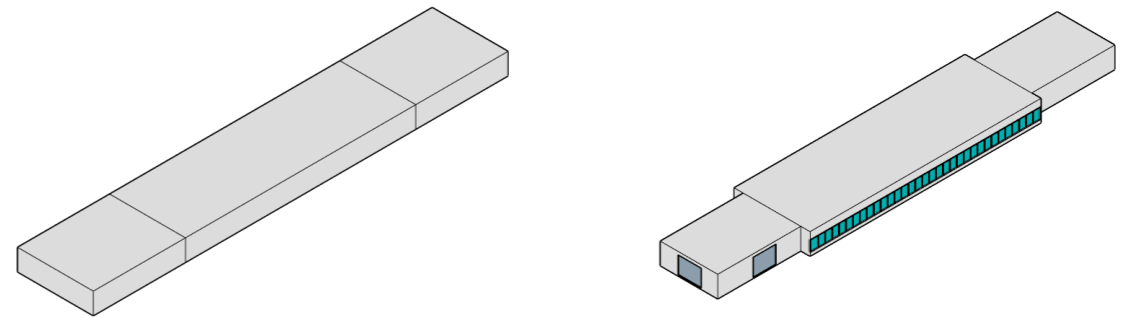
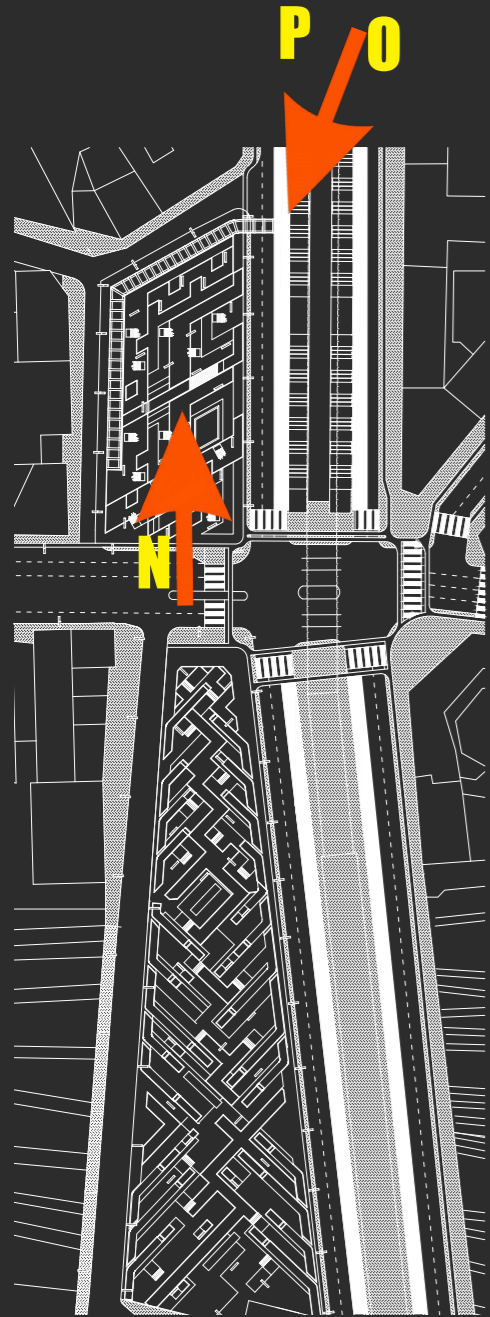




**The space under the ramp will be especially bright so as not to create a dark and dangerous space.**





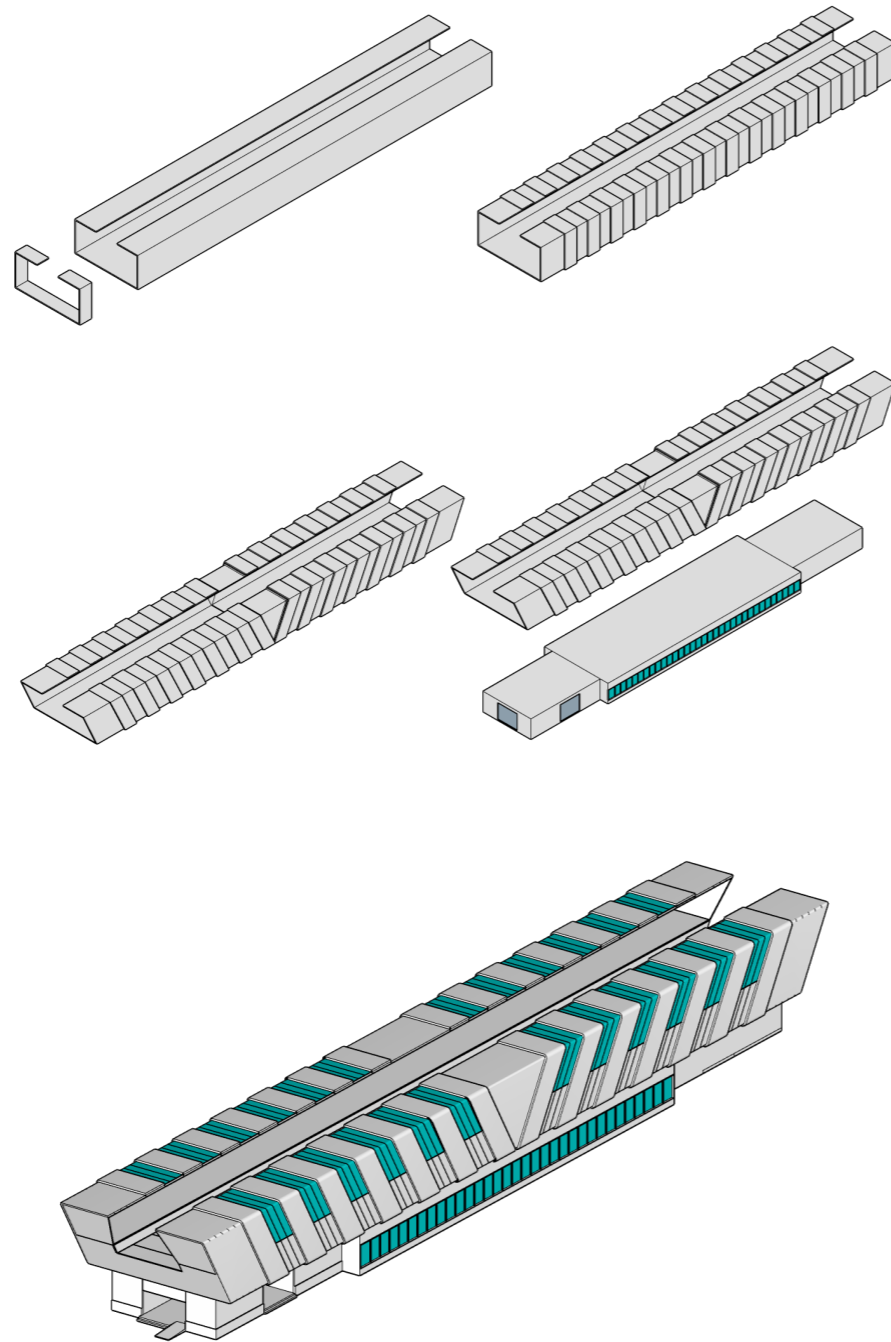


**The design of the subway station consists of 2 parts, first level which is the entrance and exit, and the second level that is used to take the subway.**  
**The first level is opposite to the current situation and it is a closed space that has no uncontrollable space.**  
**Part of its form is to show the entrance of the station a little behind.**

## Subway Station form

The form of this building is based on repetitive shells. shells that, by repeating, provide the possibility of light in the space between them.

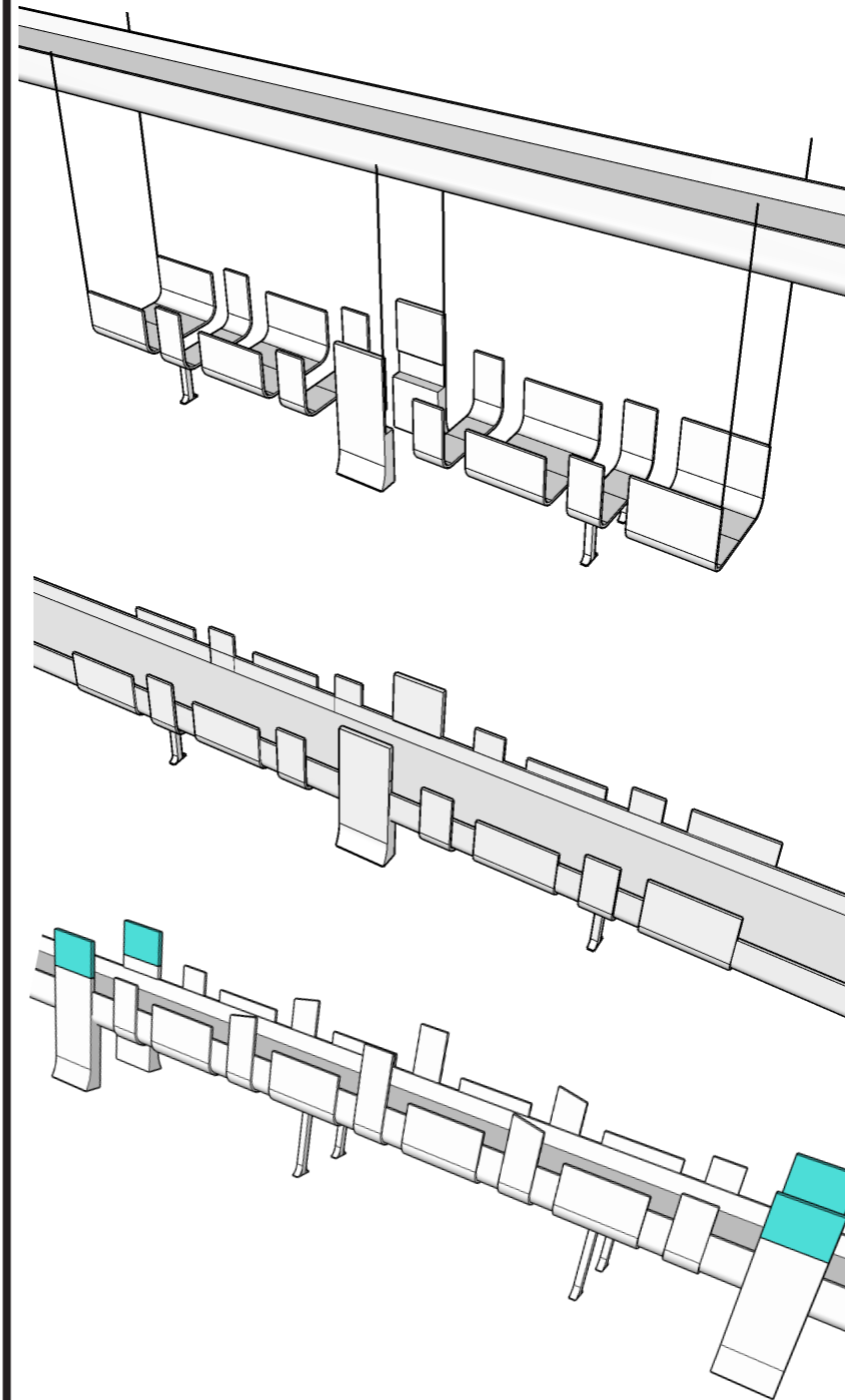
In the end, combining the two forms on top of each other creates the main form of the building



## Train route Form

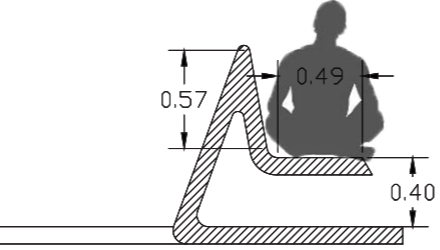
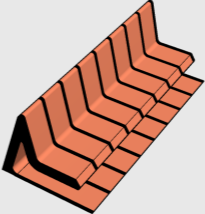
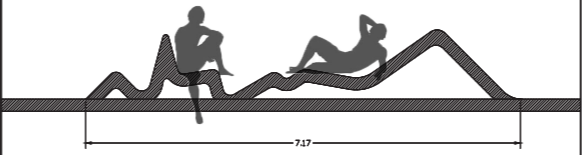
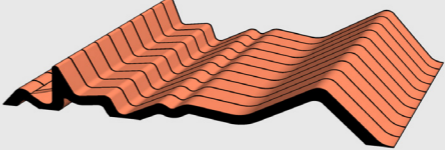
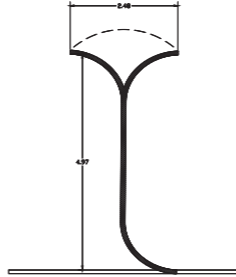
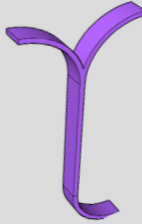
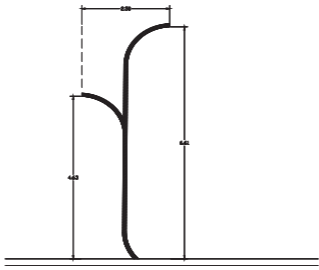
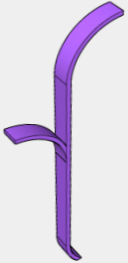
The subway route is based on two types of columns, the first type which is seen as huge columns at the beginning and end of the bridges, and the second type which are repeated along the route in large numbers.

Along the route, to create formal coordination and diversity of vision along the route, as well as for subway passengers, shells with different dimensions and heights have been repeated along the route with an especial rhythm.



## Urban furniture table

Special benches are designed so that people can sit or relax in different positions. This design is based on angles that are suitable for the human body. For example, the 135 angles are designed for lying down. The materials of choice are based on common materials in Europe, such as European oak or teak wood for outdoor spaces.

Function	View	3D	Materials
Sit			<p><b>Teak/ European Oak + Iron Structure</b></p>
sit / lie down			<p><b>Teak/ European Oak + Iron Structure</b></p>
Lighting			<p><b>White brick / Honed Travertine (Similar to the floor)</b></p>
Lighting			<p><b>White brick / Honed Travertine (Similar to the floor)</b></p>

**Thank you**