

MOBILITY HUB



Mobility Hub

Convergent zone offers better urban connection and urban life

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1. Introduction

Thesis topic and research question

Located in the south of Europe Cultural Capital - Rotterdam, the Feijenoord district has paid more and more attention to its future development. However, the poor urban connection problem of east and west is ignored in the current situation and future plan. In both physical and urban program aspects, the weak connection causes separation between the residential area and riverside area. Further, the urban life quality between local people and tourists does not match each other.

To offer better urban connections and facilitate urban life, the street, as the fundamental infrastructure for circulation and crucial public space for economic & social & cultural activities, becomes one of the most useful spatial tools.

Triggered by the dilemma and idea, the research is trying to answer the question "How can the mobility hub facilitate the east-west connection in Feijenoord area on neighborhood-level by using the idea

of the street? " The project is based on two research aspects: one is the convergent zone as the location where all kinds of flows would easily gather, and another is the street as the main program to arrange the flows and facilitate urban social activities.

Design Brief Analyses

The design brief for the mobility hub is mainly in two aspects. One is the project ambition in the aspect of the programs. Another one is the demarcation from the site.

For the project ambition, the quality of space is defined by making collages. The project in the jungle can be a public space for different types of public events and social activities. Three programs need to be connected in the space where all flows are mixed together.

For the demarcation, the existing buildings and infrastructures offer the flows from different places, and also influence the form and space of the project. The city roads, new stadium, mosque square, train lines and housing tower in the future

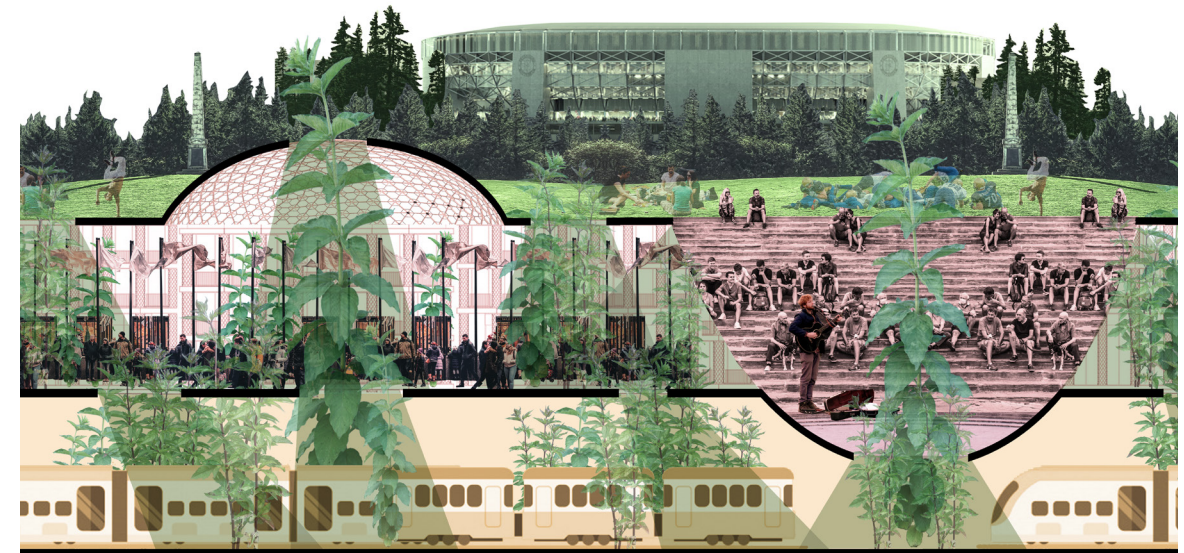


Figure 1 Project Ambition - Mobility Hub

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plan are key elements in the masterplan design of the project. The mobility hub needs to organize the separated elements in an integrated system.

2. Project

Project Introduction

The project is a 96,800m² mobility hub, which is located beside the New Feyenoord Stadium in Rotterdam South. It contains three programs - City Event Street, Train&Metro Station and Landscape Park, which are located layer by layer.

On the detailed design level, City Event Street as the main program arranges and organizes the flows. Further, as the urban space, it facilitates social activities and connects separated areas.

On the roughly designed level, as the connection between Feijenpoort and Rotterdam central & international, Train & Metro Station servers for local people and visitors for Feyenoord Events.

On the master plan level, as the green link, Landscape Park completes the ecological circle and slow traffic axis in the city scale. Further, the park gives the natural elements to the convergent zone and improves the street atmosphere.

Different from other transportation hubs within the concrete jungle, the Mobility Hub is in the real jungle which is one part of the landscape park program. And the project tries to blur the boundary of the three programs by redefining the ground floor and outdoor public spaces. **(Figure 1&2&3)**



Figure 2 Program Ambition - Landscape Park & Event Street & Train and Metro Station

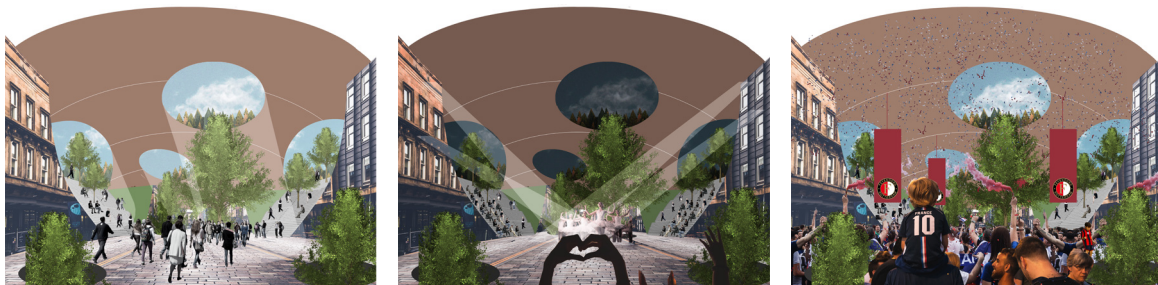


Figure 3 Space Ambition - Event Street

Program Concept

Layered programs in Mobility Hub organize different flows. And several joint spaces among programs exchange the flows and enrich the spatial experience. Moreover, the joint spaces that mix all programs and flows redefine the ground floor and blur the program boundary **(Figure 4)**.

Site Concept

To connect the east and west of Feijenpoort area, the passage is created under the "highway" bridge. The entrance and transition hall, the most important spaces, is located in the center. From the passage center to the new stadium, the street connects the local daily life with the landmark.

As a part of the landscape park, the roof area has three entrances for people from

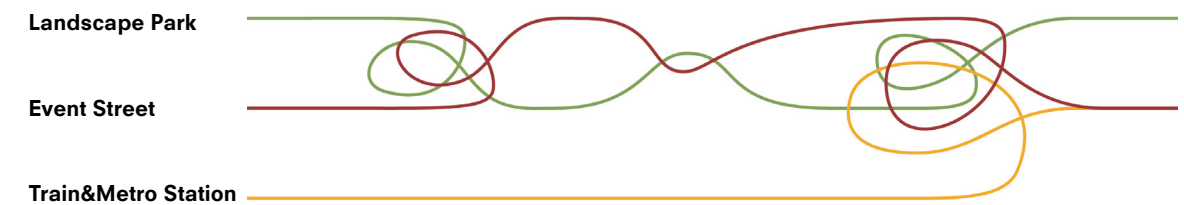


Figure 4 Program Concept

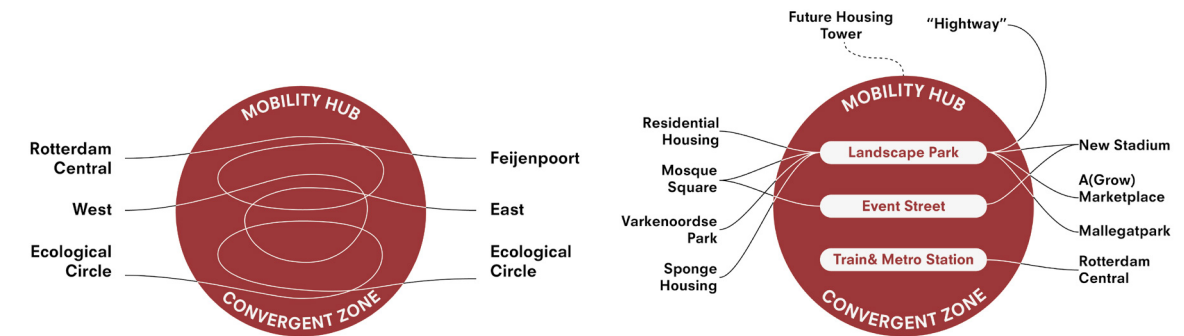


Figure 5 Site Concept

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the stadium and highway to the mobility hub.

The mobility hub also offers more possibilities for future development including the housing towers and other potential programs **(Figure 5)**.

Overall Concept

The T-shape Event Street connects the west, east and New stadium by offering public spaces in the jungle for public events and social activities.

The roof links the flows from the stadium and highway and also defines the function and atmosphere of the space below.

The joint space that mixes all flows and programs blurs the spatial boundary and creates an unobstructed free-flowing open space.

Program Organization

The mobility hub consists of three programs: Landscape Park, Event Street and Train&Metro stations. It creates two different ground levels: one is the landscape park on the roof as the ground level for the stadium stage and city road bridge; another is the street as the ground level of main social public space.

The street, as the transition level, arranges and leads most of the flows for the whole project. The north part of the T-shape street is the entrance and transition hall for stations. It creates the rhythmic covered-open spatial sequence to offer the station operational facilities and east-west connections. The longitudinal part of the street connects the entrance hall and the new stadium with retail and restaurant programs. The openings on the roof offer natural light for greenery and visual & physical connections with the stadium.

To arrange flows on different levels, the vertical-connect unit is created as the space joint. There are two vertical transportation units. One is in the middle of the entrance hall to allow people to enter the station program directly from the stadium. Another is located in the middle of the longitudinal street as the space knot that connects the street, stadium garage and stadium stage. Besides, three extra huge roof openings define the street and restaurant space below. Moreover, the jungle elements strengthen it by creating a natural and relaxing atmosphere.

The landscape park is on the roof connecting with the stadium stage and the city road bridge. The greenery elements spread into other programs as the guide for people to transfer **(Figure 9)**.

Structure

Two different stacked axes cause structural problems. The strategy would use several main columns to support both street level and roof level. And sub-columns work together to support the street level.

Materialization

The concrete would be the main structure and material in the project. Instead of gray and dark concrete, much brighter colors would be used to help with building a more relaxing atmosphere for social activities. The wood and beige tiles can be used as the secondary material for public furniture and ground **(Figure 15)**.

3. Relationship between research and design

The development of the architecture project is a loop of research and design, instead of a unidirectional process. The research helps us understand the background of the project and gives us a position for the assignment. And the design is the verification and continuity of research.

My research is separated into two parts. One is based on the site analysis, which allows me to find the core problem of the group site: disconnection. By researching the future plan, the functional and geographical intersection point of the current situation and future development is found for the project location. Another is inspired by the studio topic: migration of ideas. The research of the street offers the initial idea about the project program

and concept.

My design tries to combine two research parts into one mobility hub project. On the one hand, the design solves a lot of problems from the site restriction including the structure, relationship with new stadium & city road bridge & residential area. On the other hand, the street crates the main character of the space in the mobility hub – suitable human-scale space in the jungle for urban social activities.

In the process of design, the research continues and offers a lot of evidence to defend my idea. For example, the unfriendly situation of the city road bridge and the huge amount of visitors to the new stadium enrich the function of the landscape park on the roof. It serves as the buffer zone for people from both sides and leads people to the program of the street.

4. The relationship between your graduation topic and studio topic

The topic of Complex Projects in 2020 fall is migration of ideas, which encourages students to find how the idea can be transformed and evolved in social, cultural, economical areas.

To respond to it, our group, Feijenpoort, tries to research that how we can use different migration of ideas to transform the Feijenoord district into the gateway (poort in Dutch) to Rotterdam South.

The mobility hub project is based on the migration of street. By analyzing the historical, spatial and social topics of the street, the project gains inspiration for programs and spatial concepts.

5. Research method and approach chosen by the student in relation to the graduation studio

The graduation studio aims to use the migration of ideas as a trigger to understanding Rotterdam City and context in different aspects. Each group has one circle site area with its research topic. Everyone also develops migration topics and research topics to support their own project and group strategy. Four groups together create a database of research and a platform for sharing ideas by the weekly newsletter.

The main research methods of the mobility hub project are context-led study and typology study. The context-led study mainly focuses on how to solve the urban disconnection both in the current situation and future plan. The typology has three steps. First, collect the street social-spatial theory of praxeology and semiology. Second, use the typology to find out the relationship between space and social activities. Third, create some certain spatial modes of the street that can facilitate the social activities in the Feijenoord area.

By individual research, the mobility hub supports and improves the Feijenpoort area as the gateway of Rotterdam south to achieve the group ambition.

6. Relationship between the graduation project and the wider social, professional and scientific relevance

As the Rotterdam city municipal pays more attention to the future development of Rotterdam South, the mismatch

problems emerge gradually between the international city ambition and social life quality of local people. The government tries to make the riverside of Feijenpoort area an international sports area cooperating with the huge soccer event. While the poor connection of east and west become the handicap of local people getting the benefit from the municipal future plan.

The mobility hub project tries to solve the urban and social problems in Feijenoord by exploring the social-spatial theory of praxeology and semiology. The urban disconnection is not only the spatial problem but also the social, political and cultural problem in the global background. Through the study of urban, political, social theory on the global scale, the project discovers the street as the spatial tool to tackle the specific situation in the Feijenoord area.

7. Ethical issues and dilemmas you may have encountered during graduation

The main ethical issue for the mobility hub project exists between visitors and local people. The project aims to create the street space for different kinds of users including international visitors for soccer events and local people. The atmosphere of the street is crucial to daily social activities and big events. The solution is to introduce the natural elements in the hub. On one hand, the greenery is the continuity of local parks, Mallegatpark and Varkenoordse Park. On the other hand, the human scale of the retail buildings on two sides of the street offers space for people to stay and to have social activities.

For the project itself, the main dilemmas come from the complexity of the project site. Two different axes of the new stadium and city road bridge take a huge challenge of loading structure system. In the meaning time, three different programs need to be connected spacially within different patterns in different axes. Further, different users create different flow patterns. The street needs to organize all the flows and create an atmosphere for people to stay. The dilemma exists in mobility efficiency and creating space to stay.

Therefore the design process tries a lot of possibilities to check which structure and street program pattern is the most suitable way to solve all the problems and create the best atmosphere.