

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information		
Name	Xiaotian Liu	
Student number	5568005	

Studio		
Name / Theme	Complex Project Graduation Studio / Berlin	
Main mentor	Henri van Bennekom	Architecture
Second mentor	TBC	TBC
Third mentor	Eline Blom	Architecture
Delegate examiner	Adriaan Geuze	
Argumentation of choice of the studio	Complex projects graduation studio focuses on how to propose a convincing and practical building project in a complicated context. This year its specific topic is exploring the relationship between building and body in Berlin's context. This appeals to me because it offers an opportunity to rethink how the building adapts to the ever-changing social situation and changes in human needs for the building. In addition, the knowledge acquired from the studio, from initial research to the deeper design process, will be quite useful in future professional practice.	

Graduation project	
Title of the graduation project	A multi-modal transfer station in Berlin

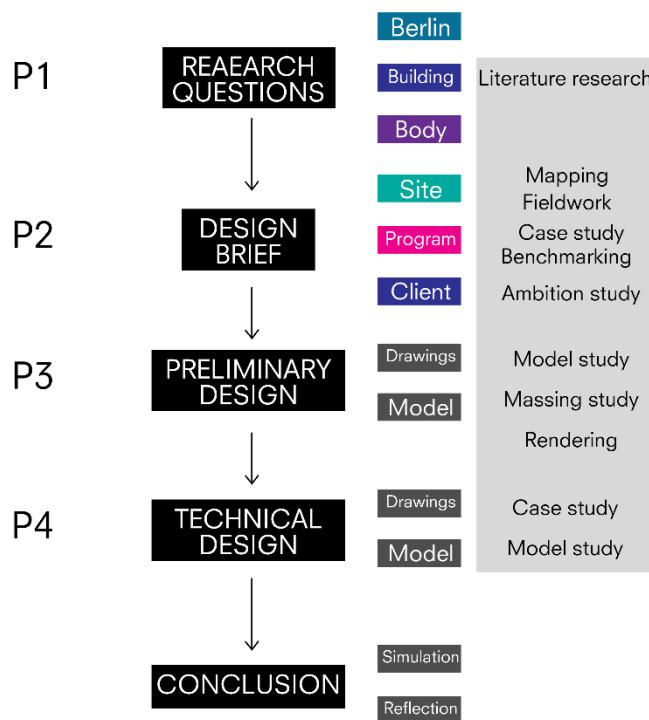
Goal	
Location:	Berlin, Germany
The posed problem,	Berlin has a large and varied public transportation system while the train (S-Bahn), metro(U-Bahn), tram, and bus consist of the main skeleton of the system. However, during the separation time in the last century, the public transport network also was fragmented due to the fight between East and West ideologies. The U-Bahn and trams are still almost exclusive to the west and east area of Berlin respectively now. As

	<p>a consequence, it severely hampers the connection of different modes of transport in Berlin due to poor transfer experiences and terribly connected transport buildings. By introducing the concept of natural way-finding in the transfer station, architectural design can be served as a tool to provide a seamless transfer experience for users in one overarching building.</p>
research questions and	<p>Research Question:</p> <p>How can architectural spaces guide people to find routes at multi-modal transfer hubs in Berlin?</p> <p>Sub-questions:</p> <ol style="list-style-type: none"> <li>1. How do architectural elements impact the perception of users?</li> <li>2. How architectural design can work together with signage to serve way-finding systems in multi-modal stations?</li> <li>3. What the future way-finding system will be like at multi-modal transfer stations?</li> </ol>
design assignment in which these results.	<p>The assignment will result in a design brief and the project proposal for a Multi-modal Transfer Station in Berlin with particular attention to the natural way-finding system by architectural design.</p>
<p>The research questions lead to design strategies that will be utilized in the next design phase. Firstly, the location of the project should be carefully selected. That means it should be a typical train station that operates various means of public transport and with inconvenient transfer routes. Besides, it also needs to be located in an area with a high flow of people and various types of users so that the project can be a generic sample for other stations in Berlin. In terms of building, many architectural elements will be rethought to serve the way-finding system including materialization, form, spatial organization, and construction. An overarching multi-modal station integrated with all these ingredients will provide a solution for the research questions and explore more possibilities for the future evolution of train stations.</p>	

## Process

### Method description

The main output of the whole process is the design brief and final design proposal. For the research part, literature research and case studies are the two main tools for formulating the design brief. Literature related to way-finding systems and train station typologies provides the methods and theoretical basis for further analysis. Case studies are mainly used to research the generic programs of multi-modal train stations and the particular topics related to flows and spatial organization. For the design phase, preliminary design starts with massing studied and then integrated into technical design while the drawings and model are the two main tools to present the project. The conclusion will be drawn in the last phase through simulation and reflection to validate the optimization effect. The more detailed process and methods can be seen in the diagram below.



## Literature and general practical preference

Literature research mainly aims to conduct the research and provide the strategies and basis for the design. Thus, the theoretical framework will be based on the theories of architecture and its intersecting disciplines, including Gestalt psychology, theories of perception and legibility of space, theories of spatial orientation and wayfinding, etc. Besides, typological theory study on multi-modal train stations is

another scope to understand the way-finding mode in multi-modal train stations. In order to gain a generic result, cases will be selected from different countries or regions while the various scales should be covered as well. In general, the literary framework can be summarized around three points as follows:

1. Literature on spatial way-finding and related disciplines (phenomenology, gestalt psychology, and legibility) like *Wayfinding: People, Signs, and Architecture* by Arthur, Paul, and Romedi Passini.
2. Literature on the historical development and related cutting-edge topics of specific building types like *Stations as Nodes: Exploring the Role of Stations in Future Metropolitan Areas from a French and Dutch Perspective* by Triggianese Manuela.
3. Architectural references to inform the good practice of navigation design such as Arnhem Centraal, Berlin Hauptbahnhof, Kyoto station, and so on.

## Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The train station has always played a number of roles in the evolution of cities which can be a city gate, an eye-catching landmark, or an urban cultural hub. This means it always has a huge impact on urban development and the surrounding context. In Berlin's case, the multi-modal train station is a strong response to its complicated context. Besides, inside the train station, the way-finding system is always a core and essential ingredient to satisfying the basic mobility function. As an architecture track student, proposing a convincing narrative and design project with particular attention to natural way-finding tools by architectural design is valuable and relevant. This also reflects my master's program aspiration to enable students to formulate an integrated design solution from comprehensive multi-disciplinary research. In addition, the research topic relates strongly to the studio's topic which arose from three different aspects of Berlin, building, and body.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework?

The conclusion and knowledge gained in the field of multi-modal train stations and natural way-finding can be used in various traffic buildings or other public buildings that need an efficient flow system such as hospitals, schools, or airports. For Berlin, the multi-modal station will be a good example to test if it is able to promote electrical-powered transport and reduce urban congestion. Furthermore, the graduation work also aims to explore how will natural way-finding systems be evolved to work with a more digital navigation systems in the future such as mobile software and automated vehicles. This means that architectural design is supposed to adapt to the ever-changing demands of a digital society.