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), 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	**Hongrui Lai**
Student number	5558115

Studio		
Name / Theme	Complex Projects / Bodies & Building	
Main mentor	Hrvoje Smidihen	Research & Design
Second mentor	TBC	TBC
Third mentor	Maruli Heijman	Research & Design
Argumentation of choice of the studio	The Complex Studio offers the opportunity to explore the design of large public buildings. And Berlin's unique "poor but sexy" character along with its unique history is attractive.	

Graduation project	
Title of the graduation project	School of Computer Science, Google University
Goal	
Location:	Treptower Park, Berlin, Germany
The posed problem,	Outside the campus, with the process of suburbanization of the post-war campus, the separation between universities and cities has become a new problem. Students are locked on an isolated island and completely separated from society. As Perry said in his book, a prison can be a university, and a university can also be a prison. It is not enough for universities to produce doctors, lawyers, and elites. We must encourage them to participate in current events (2015). Within the university, great changes have taken place in the way of teaching and learning. The role of a teacher is no longer fixed but played flexibly by anyone. And learning is increasingly not a single effort, but a shared cooperative experience (Taylor 2019). The democratization of traditional teaching space to promote dialogue, and more importantly, the rise of social learning space on the entire campus, have appropriately proved this.

	With the impact of online universities such as the Open University and online university, more radical educational reformers began to question: Do we need a physical campus? Of course, this may be a false proposition. Because people always want a better experience. Especially for universities, although there are many conservative tendencies in teaching methods. But, in the past few centuries, universities have been among the most loyal investors of architects. The eagerness of university administrators for the ideal educational space and the enthusiasm of architects to change the world dovetailed, creating one radical learning utopia after another. However, this does not mean that the impact of informatization can be ignored. It poses a new problem to architects to some extent: how to create a better learning environment to attract students to use it instead of immersing in the convenience trap brought by virtual teaching.
research questions and	With the help of information technology, people can not only store the massive knowledge formed over thousands of years in various network databases but also present the process of knowledge production in different spaces at the same time. Everyone can get rid of the role of a simple knowledge receiver and participate in the process of creating knowledge. At this time, education will present a new ecology that can be learned everywhere and all the time. The physical boundaries of peer communication, work, and learning become blurred or even disappear completely, and the fluidity of educational space arises at a historic moment. It can be seen from recent experience that the traditional model of space and ownership (space owned by colleges and departments) is changing to a more diversified and flexible shared space to cope with the increase of cooperative and peer-to-peer learning (Taylor 2019). This allows the expansion and contraction of the department and provides more interaction and chance opportunities through shared space. Success depends not only on the type of space provided but also on how to connect different types of space through circulation and create interaction activities. Then, under such a trend, how does the circulation play a role in creating the fluidity of university buildings for a better learning experience?
design assignment in which these result.	Based on the above problems and research, the design points to a program dominated by the lobby and

	circulation. The lobby and circulation provide fluidity for the future education space: they not only connect each specific learning space and service space but also become the place where social activities take place. Taking it as the starting point and leading means not only that its spatial form will be given priority, but also that its proportion will be the largest.

Process

Method description

The research will be carried out from two dimensions: human and architecture. The human dimension refers to customers and users. This part is mainly conducted through interviews and online surveys. The dimension of architecture refers to the university as an architectural type. This part will analyze university architecture from the four dimensions associated with the university: city, campus, architecture, and classroom.

The relationship between the two adjacent scales leads to different aspects of research. For example, the relationship between the city and the campus will show the location, distribution, and scale of the university campus in the city. By arranging the 62 collected cases in chronological order, we can get the trend of location, scale, and building density of university campuses from the Middle Ages, through the Renaissance, the Enlightenment, and even after World War II to modern times. This part of the research will also be accompanied by the collation of changes in the number of college students. To demonstrate the connection between the number of students and the expansion of the university campus. The analysis of the relationship between the campus and buildings points to the architectural layout, building density, and floor area ratio of the university campus. The analysis of the relationship between the building and the classroom points to the proportion of the functions and the flow inside the building.

3.1 SITE

Through taking photos, observing, experiencing, and recording the traffic status, landscape characteristics, terrain characteristics, and activities of surrounding people, we try to find the problems and contradictions in the site. Finally, through interviews with site users and surrounding residents, their feelings, the atmosphere of public space, and the role of buildings in the site are recorded. Finally, data integration is carried out based on the theme, and the obtained data is refined and sorted through the process of visualization.

3.2 PROGRAM

For the program, the case study will be the main research method. It will help the development of the program from two aspects. On the one hand, through the comparison of typical university buildings in different periods, we can understand the development trend of university buildings in terms of scale, flow, and functional

layout from the perspective of the development process. On the other hand, the analysis, simplification, and extraction of the excellent university building cases in the past decade from the perspective of scale, flow, and functional layout will generate a paradigm as the benchmark of the proposal.

Due to the complexity of the internal functions of educational buildings, the boundaries between some functions are not obvious. Therefore, to compare different cases more intuitively, the functions are divided into three different attributes: teaching & learning, lobby & circulation, and support. To explore the flexibility of teaching and learning space, it is further divided into special and flexible. Through such division, we can more intuitively analyze the basic mode and development trend of function proportion in university buildings.

3.3 CLIENT

Client research mainly uses two data sources for information collection. First of all, try to understand customers' expectations and special needs for education space by interviewing Google's internal employees or architects who have participated in Google campus projects. Second, it used web-based databases and software to investigate Google's organizational structure and employee training methods. And by analyzing the existing seven Google campuses, we can judge the future development goals and ambitions of Google in the field of education.

Literature and general practical preference

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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 studio focuses on studying the future of nine different types of public buildings at different scales in the context of informatization and big data era. The project can be regarded as one of the branches, focusing on the type of educational building. As a group, the future vision and strategy of Berlin are shared. But specific to the scale of architecture, personal research theme plays a major role.

This project tries to explore how to improve the experience of future education space from the perspective of architecture. To complete it, designers need to have the ability to deal with complex problems to deal with the site, client, and program, which is one of the necessary qualities of Master of Architecture.

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

The project attempts to explore how the future education space can enhance the experience of learning through architectural design to ensure competitiveness under the impact of online education.

Different from the limitations of online education virtual education, which is difficult to provide strong interactive social opportunities, it creates communication opportunities by strengthening the fluidity of architectural space. Since the concept of flowing space was put forward, it has been widely used in museums and galleries, which have the nature of sightseeing flow. For the current trend that education space pays more attention to social interaction and communication, a flowing education building is likely to be the right answer to improve the learning experience.