

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	Roos Broeksma
Student number	5828651

Studio		
Name / Theme	Complex projects graduation studio	
Main mentor	Benjamin Groothuijse	Architecture
Second mentor	J.A.A. (Joost) Woertman	Architectural Engineering + Technology
Third mentor	Maria Finagina	Architecture
Delegate	J. Schönwälder	Architectural Engineering + Technology
Argumentation of choice of the studio	<p>The interest of public buildings has always been there for me since this is a place where a lot of people gather and it should make all these people feel welcome. In the complex graduation studio one of the themes is bodies and buildings and I find this theme interesting because public buildings are often very big and can feel un-human. Within this studio the topic is to design 'one of' Milan that explores the relation with the users. This is something that I wanted to investigate. At the same time this studio lets people pick their own research topic freely, which was perfect since I want to do research into symbiotic architecture.</p>	

Graduation project	
Title of the graduation project	Simbiosi architettura natura (a symbiosis between architecture and nature)
Goal	
Location:	Viale Pasubio, 5, 20154 Milano MI, Italië
The posed problem,	<p>Milan is the second biggest city in Italy and is known for design, fashion, art, economy, food, architecture and more. The city has approximately 3 million residents. Not only the residents use the city, but annually about 8.5 million people visit Milan (Road genius, 2024). This number is expected to grow even</p>

	<p>more in the upcoming years. The crowdedness together with the city mostly existing out of hardened materials leads to a lot of pollution (Girardi, 2019). In February 2024 Milan briefly was the third polluted city in the world (Giuffrida, 2024). At the same time Milan is heating up with 41% of the city being covered in 'heat islands' (Telespazio, 2020). This all can lead to serious health problems, Giuffrida (2024) states the following: "Poor air quality was linked to 50,303 premature deaths in Italy in 2020, according to the EEA. Most were in Milan, but Cremona in Lombardy was the Italian province with the highest proportion of deaths – between 150 and 200 per 100,000 residents – attributed to PM 2.5".</p> <p>Milan is growing and pollution, heat and health problems are increasing. Green can solve these problems and so more urban nature is needed in the city of Milan.</p>
<p>research questions and</p>	<p>"How can a symbiosis between a building and greenery be designed for Fondazione Feltrinelli, Microsoft office, and the Ministry of Culture in Milan to enhance environmental sustainability and user experience in office and library spaces?"</p>
<p>design assignment in which these result.</p>	<p>The project assignment is about designing a library, office and museum for Fondazione Feltrinelli, Microsoft office and the Ministry of culture Milan in Milan. This thesis investigates how architecture and greenery can work together to enhance the environment and the user experience.</p> <p>The project starts with a research where the research question: "How can a symbiosis between a building and greenery be designed for Fondazione Feltrinelli, Microsoft office, and the Ministry of Culture in Milan to enhance environmental sustainability and user</p>

	<p>experience in office and library spaces?" will be answered.</p> <p>Simultaneously research into the program, site and clients will be broadened so that these together with the answer to the research question and the output of the lens research will serve as framework for the design.</p> <p>The design assignment will focus on developing an architectural design that integrates the research framework. The goal is to design a library, office, and museum building that fits within the location and meets the clients' needs, while promoting greenery and it's positive influences by using the researched topic.</p>
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Process

Method description

A lens analysis

During the first quarter of the graduation studio a lens study will be conducted by a group of 8 students in order to gain information about Milan, in this case about the culture. The different students will each look upon what culture means for their building types and look at the overlapping themes. These themes are researched then. Following this one conclusion will be drawn and upon this conclusion a group strategy will be chosen.

Program analysis

The drawings of HerzogdeMeuron (of the existing buildings) are used to analyze the existing building to gather insights into the program & the relations between the functions.

Literature study

To gather information about the influence of greenery on cognitive performance, well-being mostly scientific papers will be used. To locate these papers Google Scholar will be used as well as ResearchGate, ScienceDirect and the library of TU Delft. Through the library of TU Delft books will be searched.

The books "Nature by design" by Stephen R. Kellert and "Building urban nature" by Jacques Vink, Piet Vollaard and Niels de Zwarte form an important base for the research and will be conducted for insights about the why and how of nature inclusive design.

Site Analysis

Between the 18th and 24th of November 2024 there will be a trip to Milan. This is meant to give insights and understanding the site and culture of Milan and the surroundings of the appointed location, but also to visit the existing building to get a grip on the program. Other than that, there will be mapping done of the site to gain information about the surroundings, and ways of entrance. Desk research will be done to gather information about the neighborhood.

Client analysis

Desk research will be done to get to know more about the clients and their wishes. Additionally, interviews will be conducted to get insights into the wishes of the clients for the design of the building.

Case study

Different case studies will be done in order to take inspiration and learn from others about how to combine greenery and architecture, and also to see how different green elements can be technically designed. The Kengo Kuma office of the future, Joint research centre by Mecanoo, the Shared Education Building by OXO architects, the Primary School For Sciences And Biodiversity by Chartier Dalix Architectes and Vo Trong Nghia Architects 'Urban farming office' will be used for the case study.

Literature and general practical references

Bibliography

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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)?

Biophilic design makes buildings feel more human scale. This specifically is relevant to the bodies and building studio of Complex designing a 'one of' building that is of a big scale and explores the relation between users and buildings. It bridges the gap between architecture and the human scale.

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

Cities are heating up, polluting and becoming urban heat islands. This all can lead to serious health problems, Giuffrida (2024) states the following: "Poor air quality was linked to 50,303 premature deaths in Italy in 2020, according to the EEA. Most were in Milan, but Cremona in Lombardy was the Italian province with the highest proportion of deaths – between 150 and 200 per 100,000 residents – attributed to PM 2.5". Greenery can be a solution to these problems since it can clean the air and help reduce heat and so more urban nature is needed in the city of Milan. In this case the research is projected onto the city of Milan, but essentially the research can be applicable onto other case studies and help the architectural world become more biophilic and therefore restore balance between man (made) and nature in the built environment.