

# 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	Joonas Castrén	
Student number	-	

  

Studio		
Name / Theme	Complex Projects	
Main mentor	Olindo Caso	Architecture
Second mentor	Maruli Heijman	Architecture
Argumentation of choice of the studio	<p>Complex Projects offered a unique opportunity to explore my interest in large-scale architecture through an airport project. Previous studios in which I have enrolled throughout my academic career have been more limited in scope and time, so a year-long graduation studio would allow me to explore such a building type with greater richness.</p> <p>Also, the studio's ethos aligned with my architectural sensibility of rational, functional, and people-centric design. Instead of perceiving architecture as some precious object-making, it is a four-dimensional medium to improve the quality of users' experience. Through Complex Projects, I can study the impact of design decisions at various scales and their impact on the end users.</p>	

  

Graduation project	
Title of the graduation project	Placemaking – City Airport for Milan
Goal	
Location:	Linate – The Metropolitan City of Milan
The posed problem,	<p>Contemporary airports have developed into machine-like spaces that prioritize speed, costs, and security at the expense of the user experience. This has led to a sterile and acontextual building type that induces stress on passengers and fails to engage with its surrounding context.</p> <p>Airports also emit fumes, noise, and induce traffic in their respective neighborhoods. While they provide a significant economic boost to their respective surroundings, they</p>

	<p>generally fail to improve the spatial quality of their sites and serve local stakeholders.</p> <p>Through this project, I will study how the airport could be reimagined as a more open space that serves its locale while respecting all necessary security and function requirements.</p>
research questions and	<p>How can city airports balance efficiency and security with social placemaking to foster a distinct sense of time and place for users?</p> <p>Sub-question:</p> <ul style="list-style-type: none"> <li>- How can core airport operations and security function efficiently, while minimizing disruption to users' experience?</li> <li>- How can pre-security areas, like the meeters &amp; greeters hall become more accessible social places?</li> <li>- How can transparency in the terminal to its site and operations provide users a sense of contextual awareness, i.e. time and place?</li> </ul>
design assignment in which these result.	<p>A city airport in Milan, Italy.</p> <p>The above research question and sub-question provide the framework for a research and design project explored through various scales of design from detailing to site planning. Key aspects include "placemaking," i.e. how to foster rich social interactions through architecture, the flow of users and goods, site planning, and the meeting of aviation industry-specific function requirements.</p> <p>The resulting design assignment seeks an academic reimagination of the airport typology that is yet to be realized due to real-world constraints, intending to push the conventions of what airports can do regarding integrating building, user, and site.</p> <p>The goal of this research is to inform a design assignment for Linate airport that addresses the following issues:</p> <ul style="list-style-type: none"> <li>- At the large city-wide scale the airport will seek to be accessible. This means a "democratized" airport that is open, reachable, and enjoyable for travelers, their families, and community members of all socioeconomic backgrounds.</li> <li>- At the medium scale of Linate's site, it will seek to be contextual by integrating the site, like a reciprocal relationship with the waters of the Lambro River and Idroscalo Lake.</li> <li>- At the smaller scale of the building, the new terminal seeks to be recognizable. A distinct, legible exterior as well as a haptic interior should guide passengers through the building in an intuitive way.</li> </ul> <p>These three aspirations are expected as a prerequisite for placemaking-oriented airport architecture.</p>

## Process

### Method description

The methodology of this research is certainly not a linear step-by-step process. Gathering the necessary knowledge to inform the airport design in Linate requires revisiting earlier sources and research strategies as new paths of curiosity reveal themselves along the process. Regardless, the general methodology of this is founded on the following three phases.

#### *1. Literature review & research question:*

- The “status quo” of airport architecture is established through a literature review that addresses airports from the angles of theory, culture, and architectural history.
- Digital archives from the municipality of Milan and regional government of Lombardy uncover the critical history of Linate, relating to the terminal, site, and its users. This informs what the defining qualities of the site are that should be bolstered in the pursuit of placemaking.
- By gathering literature and archival information about airport architecture broadly and Linate specifically, a relevant research question on site-integrated airports is crafted.

#### *2. Precedent study:*

- The existing Linate airport serves as the foundation for this research project. By thoroughly understanding the intricacies of its positive qualities and its shortcomings, a more grounded design proposal will be possible. This precedent study is conducted through the lenses of site, program, and client.
- *Site analysis:* GIS data is used to form an understanding of Linate’s site in terms of connectivity, nearby assets, and ecology. This informs what the defining qualities of the site are that should be bolstered in the pursuit of placemaking. This is backed by repeated in-person visits that are well documented through photography, video, and audio.
- *Program analysis:* Benchmarking Linate with other real-world airports of similar size, use, and siting is used. It will provide rules of thumb for the allocation of different programs, what adjacencies must be prioritized, and the implications these have on placemaking. The comparison will be conducted by comparing empirical data such as passenger capacity, terminal dimensions, proximity to the city center, a general breakdown of programs, as well as any notable qualities that act in favor or against passengers’ sense toward their respective time and place.
- *Client analysis:* Publications of SEA, the corporation operating the existing Linate airport provide insight into the key pieces of information to design a realistic airport by providing information on demographics, finances, and operations. Airport planning manuals made available digitally by ICAO, one of the industry’s governing bodies, will be referenced to establish key technical and legislative requirements across the airport. These include spatial requirements for security, apron dimensions, and gate layouts.

#### *3. Conceptual design:*

- Early design explorations will be conducted through analog and digital mediums. A 1:1500 scale model of the site and existing airport will be used to test physical foam massings. Sketching of conceptual sections, plans, and diagrams will be the starting point for more rigorous relation schemes and program massings done to scale via CAD and 3D modeling software.

## Literature and general practical references

"2023 Annual Report | SEA Corporate."

"2023 Sustainability Report | SEA Corporate."

Albalade, Daniel, and Xavier Fageda. "Getting Closer to Your Destination: The Role of Available Surface Connections on the Supply of Low-Cost Carriers in Secondary European Tourist Airports." *Research in Transportation Business & Management*, Decarbonising freight transport: Transitions towards net zero, 48 (June 1, 2023):

Arsuffi, Roberto. "Milano | Linate - La meraviglia del primo Aeroporto Forlanini." *Urbanfile*, May 6, 2016.\_

Augé, Marc. *Non-Places: An Introduction to Supermodernity*. Translated by John Howe. Paperback edition. English-Language edition. Second edition. London: Verso, 2023.

Donkor, Carlien, Agnese Bavuso Marone, and Allegra Aprea. "Unveiling Milan's Navigli and Underground Water Heritage through Integrated Urban (Water) Design." *Blue Papers*

Fuller, Gillian, and Ross Harley. *Aviopolis: A Book about Airports*. Black Dog Pub., 2004.

Gordon, Alastair. *Naked Airport: A Cultural History of the World's Most Revolutionary Structure*. 1st ed. New York: H. Holt, 2004.\_

Koolhaas, Rem, Jennifer Sigler, Hans Werlemann, and Bruce Mau. "The Generic City." In *S M L XL: Second Edition*, Subsequent edition., 1248–64. Monacelli Press, 1997.

Mironov, Lilia. *Airport Aura – A Spatial History of Airport Infrastructure*. vdf Hochschulverlag AG, 2020.\_

Paul Virilio. *Speed and Politics*, 2006.\_

"(PDF) Airports as Urban Narratives, Towards a Cultural History of Global Infrastructures." *ResearchGate*.

"(PDF) Urban Water Management in Milan Metropolitan Area, a Review." *ResearchGate*

Valentini, Andrea. "Scoprendo Milano: il Forlanini, l'aeroporto anfibio." *Cultweek* (blog), July 17, 2017.

## 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)?

- Airport design is directly linked to the Complex Project's overarching topic of "Bodies and Building," and its subtopic of "Places of Flows." Airports epitomize these categories in that they act like a processor that uploads and offloads passengers from planes as efficiently as possible. It is a large-scale, infrastructure-oriented building through which multiple moving bodies (passengers, staff, baggage) circulate. In addition to physical people and goods that flow through this larger building, so do more ephemeral memories, ideas, and social interactions. The airport must accommodate all these elements, making it a complex building type.
- Navigating this complexity is a highly relevant skill for students of the Architecture track following the MSc AUBS programme. Solving the design challenge of an airport requires technical knowledge of the legal and functional constraints of the airport, structural knowledge of how to span and accommodate its internal functions, the history of the site, and social implications of the airport's design on the city.

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

- In a social sense, it will seek to challenge the expectation of airports as generic utilitarian infrastructure, instead offering a vision for a user-centric and hyper site-specific experience. In a professional sense, it will offer an alternative airport model driven by local needs rather than strictly financial interests. In a scientific sense, it will explore how our building inventory can be leveraged to its full potential by

accommodating multiple purposes, thus mitigating the impact of the construction industry on the land.