

# 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	Justin Tjon Kie Sim	
Student number	5719089	
Studio		
Name / Theme	Complex Projects – Bodies & Building Milan	
Main mentor	Benjamin Groothuijse	Architecture
Second mentor	Joost Woertman	Architectural Engineering + Technology
Argumentation of choice of the studio	<p>The world of performance has always fascinated me. During my three years at Theatre Rotterdam, a remarkable concrete structure by Dutch architect Wim Quist, I gained invaluable experience in large-building operations, backstage complexities, audience flow, and theatre construction. This solidified my fascination with complex architectural buildings and the challenges of designing structures such as theatres, towers, and airports.</p> <p>While working at Foster + Partners and Powerhouse Company, I contributed to large projects like airport terminals and skyscrapers. These experiences enhanced my understanding of the intersection between technical complexity and design. However, the opportunity to design an opera house remains a unique wish. Opera houses are exceptional building types, often singular in a city and realized through international competitions by renowned architects. To design a new Teatro alla Scala, where Verdi premiered some of his most celebrated works (Arruga, 1976), represents both an incredible challenge and a dream.</p> <p>The Complex Projects graduation studio provides a framework that aligns deeply with my fascination for the relationship between human proportions and architectural form. Its focus on movement, comfort, experience, safety, and security resonates with my intent to organise and process data to solve complex problems. The studio's emphasis on structured methodologies and engaging with user dynamics perfectly complements my ambition to</p>	

	create a design that bridges historical significance with modern relevance. By combining my fascination for performance spaces with my architectural passion, I am eager to design a building that not only celebrates La Scala's past but also redefines its future, fostering engagement across generations.
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Graduation project	
Title of the graduation project	Scala's Next Act: Redefining Youth Engagement in Milan's Opera Scene
Goal	
Location:	Piazza della Scala, Milan, Italy
the posed problem	<p>Opera faces a pressing challenge: engaging younger generations. While theatre, ballet, and opera have been shown to stimulate meaningful social interaction, psychological engagement, and positive emotions (Vandenbroucke, 2018), their appeal to youth is low. At Teatro alla Scala, 66% of the audience is over the age of 55 (Schmid, 2022), and only 19% of Generation Z express interest in opera, ballet, and theatre (Statista, 2024). Dominique Meyer, La Scala's artistic director, is extremely aware of this trend and is determined to attract younger audiences.</p> <p>Research by the European Union (2022) highlights two major barriers to youth attendance: 50% cite a lack of interest, while 20% find ticket prices too high. Adding to these issues, attention spans are shrinking. According to Pilgrim (2024), the average human attention span has dropped from 12 seconds to 8.25 seconds over the past two decades, with even lower numbers for Generation Z. This contrasts vastly with the traditional opera format, where performances typically last two hours.</p> <p>To ensure its survival and relevance, opera must adapt to the evolving cultural landscape. This requires reimagining not just the performances but the architecture itself, creating spaces that resonate with younger audiences and foster engagement. La Scala must redefine its role from a historic monument to a dynamic cultural hub, capable of meeting the needs and expectations of today's youth while preserving its rich heritage.</p>

research questions	<p>This research explores the broader themes of youth engagement and spatial experiences within an opera house. The primary question guiding this project is:</p> <p>"How can the design of an opera house stimulate interest among younger generations?"</p>
design assignment	<p>The design assignment involves creating a new opera house on the site of Teatro alla Scala in the centre of Milan, designed to attract younger audiences while honouring its iconic identity. The new opera house will feature a seating capacity of 2,000 and establish a strong connection with the broader public through the Piazza della Scala. Transforming it into a space for public performances and cultural interaction. This redesign will solidify La Scala's identity as a cultural landmark to support Milan's year-round cultural calendar and align with the ambitions of its stakeholders. The project seeks to blend innovative architectural solutions with a focus on youth attraction, inclusivity, and accessibility, ensuring its relevance for future generations.</p> <p>Total building program: 25,000 m<sup>2</sup> (GFA)</p> <p>Foyer 2,000 m<sup>2</sup></p> <p>House 1,500 m<sup>2</sup></p> <p>Stage 3,000 m<sup>2</sup></p> <p>Restaurant 500 m<sup>2</sup></p> <p>Museum 700 m<sup>2</sup></p> <p>Workshop Area 1,000 m<sup>2</sup></p> <p>Rehearsal Rooms 3,000 m<sup>2</sup></p> <p>Dressing Rooms 1,500 m<sup>2</sup></p> <p>Offices 2,100 m<sup>2</sup></p> <p>Circulation 3,000 m<sup>2</sup></p> <p>Technical Rooms 3,000 m<sup>2</sup></p> <p>Others 3,700 m<sup>2</sup></p> <p>The client, the Comune di Milano, will lead the initiative alongside long-standing investors and new collaborators:</p>

	<ul style="list-style-type: none"> <li>• <b>Comune di Milano</b> As the primary client, the municipality aims to reinforce Milan's global reputation as a cultural capital by reimagining La Scala as a space that embraces inclusivity, innovation, and accessibility.</li> <li>• <b>Intesa Sanpaolo, Rolex, BMW</b> These long-term investors share a vision of La Scala as a venue that represents timeless elegance. They aim to support future generations and solidify La Scala's position as a cultural leader.</li> <li>• <b>Kartell</b> As a new partner, Kartell's ambition is to integrate innovative design solutions that resonate with younger audiences. Their involvement reflects a focus on redefining spaces with timeless materials, furniture and spatial elements that attract youth.</li> </ul>
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## Process

### Method description

The primary approach involves creating a detailed design brief for a new opera house at the historic site of Teatro alla Scala in Milan. This document outlines the design process for MSc4 and focuses on three topics: site, program, and client. Each topic employs specific research methods tailored to address the complexities of designing a contemporary opera house that resonates with future generations.

#### Site

The site is analysed to uncover its historical significance and potential for integration with its urban context. The 6,000 square meter plot at Piazza della Scala, which has undergone significant changes throughout time, requires a deep understanding of its physical and social evolution. Historical mapping and urban analysis through data collection at multiple scales will provide insights into the site's relationship with adjacent landmarks such as Piazza del Duomo and the Galleria Vittorio Emanuele II. The area will be further analysed at different scales using GIS (Geographical Information System). Pedestrian flow studies will guide the redesign of the square to prioritize accessibility and expand the pedestrian zone while respecting the 27-meter facade height constraint established by the surrounding palazzos. By integrating these findings, the site will become a seamless extension of the public cultural hub envisioned for the new opera house.

## Program

The program is informed by an approach that includes benchmarking, case studies, and user-centric design. Benchmarking involves comparing spatial configurations, capacities, and programmatic divisions of leading performance venues, such as opera houses, concert halls, and performing arts centres. This analysis identifies trends and best practices that can be adapted to the unique needs of La Scala. Additionally, three case studies are examined to refine the hall's organizational principles and relation to the city. Through the collective group research on cultural events in Milan, the building will provide flexible areas to host ongoing events. Unlike many other opera houses and despite the meaning of La Scala's name (the stairs), the building does not feature any prominent staircases. This is one of the architectural elements that will be central to the new design: "theatrically emphasizing the movement of people by orienting them and providing a sense of rhythm" (DOGMA, 2019). The focus of the program is on engaging and attracting younger audiences; this will be done by reimagining the performances, breaking the fourth wall, incorporating spaces for experimental performances, fostering collaboration among artists, and providing flexible spaces through comparative research to contribute to Milan's year-round cultural calendar.

## Client

The client, represented by the Comune di Milano and key investors, drives the project's ambitions and financial framework. A structured process of collection, comparison, and evaluation is used to choose and align the interests of stakeholders such as Intesa Sanpaolo, Rolex, BMW, and Kartell. The Comune di Milano aims to position the opera house as a cultural landmark that balances heritage and innovation. Intesa Sanpaolo and Rolex emphasize tradition and elegance, while BMW and Kartell contribute perspectives on modernity and design innovation. The client and partners were all selected through their common commitment to future generations. Multiple financial models were selected, including public funding from Creative Europe and Italy's Ministry of Culture, together with private investment and program adaptation, ensuring a realistic approach to realising the project.

## Literature and general practical references

Arruga, L. (1976). *La Scala*. Praeger Publishers New York.

Blanc, A. (1996). *Stairs, steps, and ramps*. Butterworth-Heinemann.

Dogma. (2020). *Platforms: Architecture and the use of the ground*.  
[https://editor.e-flux-systems.com/files/287876\\_e-flux-architecture-platforms-architecture-and-the-use-of-the-ground.pdf](https://editor.e-flux-systems.com/files/287876_e-flux-architecture-platforms-architecture-and-the-use-of-the-ground.pdf)

Gossett, P. (2007). *Divas and scholars: Performing Italian opera*. Choice Reviews Online, 44(11), 44–6153.  
<https://doi.org/10.5860/choice.44-6153>

Grey, T. (2018). *An unlikely youth revolution at the Paris Opera*. The New York Times.  
<https://www.nytimes.com/2018/02/19/arts/music/paris-opera-young-audiences.html>

Hammond, M. (2006). *Performing Architecture: Opera Houses, Theatres, and Concert Halls for the Twenty-First Century*. Merrell Publishers Limited.

Le Corbusier. (1954). *The Modulor: A Harmonious Measure to the Human Scale Universally Applicable to Architecture and Mechanics*. Harvard University Press.

Murray, P. (1969). *The architecture of the Italian Renaissance*. Schocken Books.

Pilgrim, K. M. (2024). *The Power of Micro-Moments: Seizing Gen Z's Limited Attention for Maximum Impact*. Blavity Inc.  
<https://blavityinc.com/the-power-of-micro-moments-seizing-gen-zs-limited-attention-for-maximum-impact/>

Publications Office of the European Union. (2022). *Study 'The situation of theatres in the EU Member States' : final report*. Publications Office of the EU.  
<https://op.europa.eu/en/publication-detail/-/publication/f0f11efd-eb8e-11ec-a534-01aa75ed71a1/language-en>

Schmid, R. (2022). *La Scala woos a younger audience*. The New York Times.  
<https://www.nytimes.com/2022/06/08/arts/music/la-scala-younger-audience.html>

Statista Consumer Insights. (2024). *Target audience: Theater, ballet & opera goers in Italy*. Statista.  
<https://www-statista-com.tudelft.idm.oclc.org/study/123338/target-audience-theater-ballet-and-opera-goers-in-italy/>

Vandenbroucke, R. J., Meeks, S., *How Theatre Encourages Well-being – and Can Engage a Wider Audience*.

Vitruvius. (1914). *Ten Books on Architecture*. Harvard University Press.

## Reflection

1. The "Bodies & Building" studio focuses on the intricate relationship between architecture and its users, particularly how spaces can be designed to enhance interaction, movement, and experience. This theme aligns closely with the graduation topic, which involves designing a new opera house on Teatro alla Scala's site to serve as an inclusive cultural stage for the next generation. The surrounding buildings at Piazza della Scala, characterized by classical proportions and symmetry, echo Leonardo da Vinci's statement that "without symmetry and proportion there can be no principles in the design" (1940). This connection between symmetry, proportion, and design principles ties directly to the studio's emphasis on measurements. Movement, comfort, experience, safety, and security are all vital aspects of the opera house redesign that will be further explored throughout the project.

The graduation topic focuses on how architecture can attract younger audiences by reimagining performance spaces, improving user experience, and supporting Milan's cultural landscape. Human-scale considerations will be central to the design, enhancing comfort and engagement for performers, staff and visitors, while integrating classical design principles ensures harmony with the historical context of the Piazza. This balance of architectural innovation and legacy preservation embodies the "Bodies & Building" studio's commitment to exploring how large, complex buildings can serve as dynamic spaces of cultural interaction, while principles of symmetry, proportion, and human-scale design will be considered to enhance user experience and engagement.

2. This project addresses the pressing need for cultural institutions to adapt to shifting trends by reinterpreting Teatro alla Scala as a contemporary opera house. The challenges outlined in the posed problem, such as low youth interest, shorter attention spans, and barriers like cost and accessibility, are globally relevant issues for cultural institutions. Similarly, the topics explored by the culture group lens including urban transformation through temporary events, the need for flexible spaces, and strategies to prevent overcrowding resonate with this project's objectives. For example, Milan's year-round calendar of cultural events highlights the necessity for adaptable venues capable of hosting diverse performances and public events.

Palais Garnier, which successfully increased their under-28 audience by 50% within two years, provides a deeper understanding of the possibilities (Grey, 2018). This demonstrates the transformative potential of targeted efforts to attract younger generations. By integrating innovative architectural solutions, rethinking conventional arrangements, adding flexible spaces, and reimagined performances, this project not only strengthens La Scala's iconic identity but also positions it as a model for addressing global challenges while contributing to Milan's cultural calendar.