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	Amber Rose Heijdens
Student number	5656702

Studio		
Name / Theme	Public Building	
Main mentor	Dr. ir. Stefano Corbo	Project Design Mentor
Second mentor	Ir. Florian Eckhardt	Tedchnical Building Design Mentor
Third mentor	Dr. Sang Lee	Theory & Delineation Mentor
Argumentation of choice of the studio	I selected this studio because I aspire to gain experience in tackling larger-scale projects that encompass all aspects of architecture. This entails not only aesthetics, construction, and building technology but also involves the integration of a structure that seamlessly blends with the urban environment, fostering the creation of a new space for social activities. Throughout my previous studios, I have worked on projects ranging from small to substantial scales, consistently ende-avoring to incorporate innovative and undiscovered building techniques. Thus, I am highly motivated to embark on this challenging design assignment centered around the concept of a vertical campus.	

Graduation project	
Title of the graduation project	XXI Century Wunderkammer
Goal	
Location:	The Hague, The Netherlands – Next to the National Library on the south-east side, where it connects to it.
The posed problem	The primary challenge of this project is to innovate and optimize adaptable learning spaces within the structural limitations of a vertical campus. This vision, termed 'The Campus of the Future', transcends traditional educational environments, merging vibrant, artistic, and cultural elements to foster continuous learning and discovery. It's an architectural embodiment of a philosophy where education is not just

	confined to buildings, but a dynamic, lifelong journey, offering unique, enriching experiences at every turn.
Research questions	Main question: How can adaptable academic spaces be designed within a vertical campus to embody a XXI Century Wunderkammer? Sub questions: 1. How can the architectural design of adaptable academic spaces within a vertical campus effectively incorporate elements of a modern Wunderkammer to foster an environment of multifaceted learning and curiosity? What are the defining principles that encapsulate the functionality and aesthetic of a 21st-century academic Wunderkammer, and how can these principles be innovatively applied to enhance the spatial and educational dynamics of a vertical campus? 2. In what ways do academic spaces inspired by the Wunderkammer concept influence and potentially enhance the learning experiences, engagement, and academic curiosity of students within a vertical campus environment?
Design assignment in which these result.	To design a vertical campus in an urban environment that serves as a XXI Century Wunderkammer, offering adaptable and multifunctional academic spaces. This architectural endeavor aims to meet modern educational demands while creatively addressing the challenge of limited horizontal space. It envisions a vertical campus as a dynamic, inspiring hub of learning and discovery, where each space is a microcosm of wonder, stimulating curiosity and innovation in an ever-evolving educational landscape.
The project focuses on the intersection of modern architectural design and educational theory, emphasizing the creation of spaces that are both adaptable and conducive to various forms of learning. The project is situated within the broader context of urban educational architecture.	

Process

Method description

Adjusting the paragraph to align with the concept of a 21st-century Wunderkammer, the main question becomes: "How can adaptable academic spaces be designed within a vertical campus

to embody a XXI Century Wunderkammer?" The research, employing diverse methods, will explore this through three components:

Firstly, the research will combine various methods to extract insights from architectural resources and gather case studies of adaptable spaces in both educational and non-educational settings, forming a comprehensive catalog. This includes:

- Literature Reviews: Delving into academic works and publications about adaptable academic spaces, drawing parallels with the concept of a Wunderkammer in modern architecture.
- Case Studies: Examining existing examples of adaptable spaces, focusing on their capacity to inspire wonder and facilitate multifaceted learning, akin to a Wunderkammer.
- Catalog Creation: Compiling a catalog of case studies that exemplify the Wunderkammer concept in adaptable spaces, with detailed descriptions and design elements.

Secondly, the research will progress to a "compare and extract" phase, formulating 'Ten Principles of a 21st-Century Academic Wunderkammer', inspired by historical architectural frameworks like Le Corbusier's 'Five Points'. This includes:

- Comparative Analysis: Analyzing case studies to identify principles that imbue adaptable spaces with a sense of wonder and continuous discovery.
- Benchmarking: Aligning these principles with established architectural philosophies, ensuring they encapsulate the essence of a modern Wunderkammer.

Lastly, the research will focus on implementing these principles in The Hague's vertical campus. This phase ensures that the campus not only exemplifies academic adaptability but also reflects the Wunderkammer concept, integrating global best practices with local architectural heritage. This includes:

- Field Research: In-depth analysis of The Hague's vertical campus to understand the local context for applying these principles.
- Case Study Application: Tailoring the Wunderkammer principles to the specific architectural and educational needs of The Hague's campus.
- Research by Design: Developing design prototypes that incorporate these principles, followed by feedback collection for refinement.
- Surveys and Observations: Evaluating the impact of these newly designed spaces on learning experiences, ensuring they align with the Wunderkammer philosophy.

These methods ensure a comprehensive approach, blending traditional architectural principles with the innovative concept of a 21st-century educational Wunderkammer.

Literature and general practical references

Books:

Brown, Malcolm B., and Phillip D. Long. "Trends in Learning Space Design." In Learning Spaces, edited by Diana G. Oblinger, 9.1-9.11. Boulder, CO: Educause, 2015.

Clemence, Paul. Mies van der Rohe's Farnsworth House. Schiffer Publishing Ltd, 2006.

Monacelli, A., and Tondelli, S. Vertical Versus Horizontal: Theory and Practice of Urban Densification in Evolving Metropolises. Accessed on November 6, 2023.

N/A. The Cell: Le Corbusier - Le Cellule - L'Unite d'Habitation de Marseille. NAi Booksellers, 2018. https://www. naibooksellers.nl/the-cell-le-corbusier-le-cellule-le-corbusier-l-unite-d-habitation-de-marseille.html.

Smith, Elizabeth A.T. Case Study Houses: The Complete CSH Program. Taschen, 2002. https://biblio.co.uk/ book/case-study-houses-complete-csh-program/d/136678202

Temple, Paul. Learning Spaces for the 21st Century: A Review of the Literature. York: Higher Education Academy, 2007.

Journal Articles:
Büscher, M., Martin Kompast, Rüdiger Lainer, and I. Wagner. 1999. "The Architect's Wunderkammer: Aesthetic Pleasure & Engagement in Electronic Spaces." Digital Creativity 10 (1):1-17.URL:https://www.researchgate.net/publication/2610384_The _Architect's_Wunderkammer_Aesthetic_Pleasure_Engagement_in_Electronic_Spaces.

Chen, Yuzhen, et al. "Optimal Design and Verification of Informal Learning Spaces (ILS) in Chinese Universities Based on Visual Perception Analysis." Buildings 12, no. 10 (2022): 1495. URL: https://www.mdpi. com/2075-5309/12/10/1495.

Niemi, Kreeta. "'The best guess for the future?' Teachers' adaptation to open and flexible learning environments in Finland." Learning Environments Research (2020). URL: https://www.tandfonline.com/ doi/full/10.1080 /20004508.2020.1816371.

Pathak, Prakhar, and Archna Jha. "Making Healthy Campus by Treating Open Space." ISJEM (2023). URL: https:// isjem.com/download/making-healthy-campus-by-treating-open-space/.

Reinius, Hanna, et al. "The Design of Learning Spaces Matters: Perceived Impact of the Deskless School on Learning and Teaching." Learning Environments Research (2021). URL: https://link.springer.com/ article/10.1007/s10984-020-09345-8.

Tahvildari, Houbeh, Hamed Imantalab, and Ourya Moghadam. "Investigating Different Models of Training and Designing Educational Spaces for Architecture Students." 2015. https://www.mdpi.com/2075-5309/9/11/230/pdf?version=1572950262.

Zhou, Mo. "Contemporary Landscape Architecture in Public Spaces." In IOP Conference Series: Materials Science and Engineering, vol. 960, no. 3, 032030. 2020. https://dx.doi.org/10.1088/1757-899X/960/3/032030.

Websites:
"5 Points of Architecture." Jagriti is Professoring. Accessed November 6, 2023. URL: https:// jagritiisprofessoring.files.wordpress.com/2018/07/5-points-of-arch.pdf

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)?

This graduation project, focused on designing a 21st-century Wunderkammer within a vertical campus, aligns closely with the "Campus of the Future" studio, the "Public Building" studio, and the "Architecture" master track in several key aspects:

1. Campus of the Future Topic: The project directly relates to envisioning the future of educational spaces. It explores innovative design solutions for a vertical campus, addressing future-centric educational needs and spatial challenges, which is at the core of the "Campus of the Future" studio's objective.

2. Public Building Studio: The vertical campus project falls under the category of public buildings, given its communal, educational nature. The project's focus on multifunctional, adaptable spaces is essential in the context of public architecture, aligning with the studio's emphasis on creating public structures that are dynamic, accessible, and responsive to community needs.

3. Architecture Master Track: The project embodies fundamental architectural principles such as spatial design, functionality, and aesthetic considerations. It requires the application of architectural theories and methods taught in the master track, particularly in designing complex structures like vertical campuses that are sustainable, innovative, and contextually relevant.

In summary, the project integrates the futuristic vision and adaptability focus of the "Campus of the Future" studio, the public utility and communal aspect of the "Public Building" studio and applies architectural skills and principles central to the "Architecture" master track.

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

The graduation project holds significant relevance in the larger social, professional, and scientific framework. Socially, it addresses the pressing needs of contemporary education and urban space constraints, proposing innovative solutions for adaptable and functional learning environments, thereby enhancing inclusivity and accessibility in urban education. Professionally, it contributes to the fields of architecture and urban planning by demonstrating the practical application of modern design principles, serving as a pioneering model for future developments in vertical campus architecture. Scientifically, the project enriches academic research by applying architectural theories to real-world urban scenarios, offering valuable insights into sustainable and efficient space utilization in densely populated areas, a critical and growing focus in scientific studies.