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	Arvind R.S. Lachman
Student number	4672259

Studio			
Name / Theme	AR3MET105 A Matter of Scale		
Main mentor	Willemijn Wilms Floet	Architecture	
Second mentor	Niels Tilanus	Building technology	
Third Mentor	Eric Crevels	Architecture	
Argumentation of choice of the studio	I chose this studio because of its freedom regarding research. I saw it as a project in which I can put all my knowledge and skills to the test and mix and match with different types of research methods like photography and urban exploring.		
	The fact that this project would be designed in another country was also a deciding factor. Curiosity towards other cultures and also their history regarding architecture motivated me to use different types of empirical research in search for a space with interesting qualities and backstories. I saw an opportunity for an end-to-end project with a lot to learn along the way.		

Graduation project			
Title of the graduation project	Volta Cultural Center "The living room of the Volta neighborhood".		
Goal	•		
Location:		Volta Quarter, Subdistrict: Kalamaja, Tallinn, Estonia	
The posed problem,		A segment of the Volta Factory, a former producer of Engines, generators and all sorts of equipment for submarines and the military, is in decay. Ruins, totally closed off buildings with hazardous conditions and wasteland covered with remnants of the past cover a large part of the Volta Quarter resulting in unsafe conditions and underutilization of land. Parts of the ruins of old factories are used for traditional festivals and photoshoots as the area holds lots of importance for the people of Kalamaja. Other parts are in development, mainly residential areas, but no social or cultural center. The people of Kalamaja want to improve the image and safety of the Volta quarters as it is their pride. My part of the Volta Quarters is in a stark need for a social and cultural project that enhances the now dangerous waste land of Volta that is only utilized on a below-par level. In short, Vacant post industrial heritage revitalization and urban development through restoration and renovation. Transformation of Volta Factory into a cultural center defined as a living room.	

research questions and	In what ways can the concept of a "living room" be implemented on a neighborhood scale to encourage community engagement? What functions are integral to the
	definition of a 'living room' in the context of a social and cultural center?
	How can heritage and identity be incorporated into the restoration of historical architecture to contribute positively to the cultural center?
	How can the project be strategically controlled to ensure that its impact is primarily beneficial for the people of Volta, effectively prioritizing their needs and aspirations over those of other neighborhoods?
	How can a cultural center act as a living room for the Volta Quarters?
design assignment in which these result.	

Learn from precedents - similar projects of cultural centers and public buildings: Amare (The Hague), Forum (Groningen), Karregat van Klingeren (Eindhoven), DOK Delft (Delft), Beurs van Berlage (Amsterdam) & Fenix I (Rotterdam) - (conceptualized major elements regarding architecture, heritage, flow of people, relationship with the context, innovation and other remarkable traits)

Design Criteria for Living Room:

- prioritizing functionality (form follows function and vice versa)
- integrate aesthetic elements that resonate with the historical and cultural context of Volta. (= cultural integration)
- emphasizing safety and accessibility for all community members of Volta
- addressing multiple target audience/group in the neighborhood (= user needs) like kids, adults, etc)
- hierarchy (so people have options in the building)
- fulfilling social needs
- innovative/uniqueness and creative design solutions
- multifunctionality
- transparency and overview (social control) (inside & context)
- Smooth transitions between inside and outside
- Local building materials circularity

Process Empirical research + on site field work **Method description**

- design prototyping (iterative process) & 3D visualization and modeling.
- protocols for scale control (emphasizing mechanisms that prioritize the needs of the people of Volta)
- Critical analysis of the Volta Factory site as part of Kalamaja's cultural and social understanding.

Literature and general practical references

Case studies: Amare (The Hague), Forum (Groningen), Karregat van Klingeren (Eindhoven), DOK Delft (Delft), Beurs van Berlage (Amsterdam) & Fenix I (Rotterdam) - (conceptualized major elements regarding architecture, heritage, flow of people, relationship with the context, innovation and other remarkable traits)

Empirical Research: Photography, sketches, urban exploring & interviewing people on site. Following tours throughout the area (Open house Tallinn)

Literature studies:

Custers, G. (2022). De wooncrisis in Nederland: voorbij het idee van 'natuurverschijnsel'. Tijdschrift sociologie, 322–328. <u>https://doi.org/10.38139/ts.2022.27</u>

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User, S. (z.d.). Best practice in steel construction - Industrial buildings - Infosteel. <u>https://www.infosteel.be/en/publications/412-best-practice-in-steel-construction-industrial-buildings</u>

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Cristea, I. (2014). Architecture of Estonia – old and new together. Questa Soft. https://www.ceeol.com/search/article-detail?id=603635

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Cook, T., & Hess, E. (2007). What the camera sees and from whose perspective. Childhood, 14(1), 29–45. https://doi. org/10.1177/0907568207068562

Careri, F. (2002). Walkscapes: Walking as an aesthetic practice. Barcelona: Editorial Gustavo Gili. https://doubleoperative.files. wordpress.com/2009/12/antiwalk1.pdf

Gorrie, A., Pons, D. J., Maples, D., & Docherty, P. (2018). Principles of product design in developing countries. Applied system innovation, 1(2), 11. https://doi.org/10.3390/asi1020011

Hwang, S. (2017). Conflict: Conflicting images in Tallinn. https:// aaltodoc.aalto.fi/handle/123456789/29495

Krumbein, W. (2012). Patina and Cultural Heritage – A geomicrobiologist 's perspective. https://www. semanticscholar.org/paper/Patina-and-culturalheritage-%E2%80%93-a-geomicrobiologist-Krumbein/ f837a0c924dbe3d3ea17371c78100adcc75af0d9 Lang, J. (2016). Urban Designing in Heterogeneous Cities: Issues and responses. Proceedings of the Institution of Civil Engineers. https://doi. org/10.1680/jurdp.15.00032

Pestova, A. A. (2017, 7 september). Uzupis (Vilnius) and Kalamaja (Tallinn): "Cultural Quarters" and the Post-Soviet Urban Space Transformation in Baltic States. Digitální repozitá UK. https://dspace. cuni.cz/handle/20.500.11956/93093

Phillips, R. (2015). Playful and multi-sensory fieldwork: seeing, hearing and touching New York. Journal of Geography in Higher Education, 39(4), 617–629. <u>https://doi.org/10.1080/03098265.2015.1084496</u>

Pons, O., & Nikolic, J. (2020). Sustainable Design, Construction, Refurbishment and Restoration of Architecture: A review. Sustainability, 12(22), 9741. <u>https://doi.org/10.3390/su12229741</u>

Jurėnienė, V. (2012). The role of cultural centres in the fields of children and youth artistic education. Procedia - Social and Behavioral Sciences, 51, 501–505. <u>https://doi.org/10.1016/j.sbspro.2012.08.196</u>

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Österlund, T. (2010, 2 september). Methods for Morphogenesis and Ecology in Architecture : Designing the Bothnian Bay Cultural Center. OuluREPO. https://oulurepo.oulu.fi/handle/10024/36081

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Mısırlısoy, D., & Günçe, K. (2016). Adaptive Reuse Strategies for Heritage Buildings: A Holistic approach. Sustainable Cities and Society, 26, 91–98. <u>https://doi.org/10.1016/j.scs.2016.05.017</u>

Tsalkatidis, T. (2019). Numerical investigation of façade and floor glazing systems. <u>https://nmbu.brage.unit.no/nmbu-xmlui/handle/11250/2682068</u>

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 graduation project can be seen as a test in which my skills that I have gathered over the past couple of years as an architecture student will be put to the test. This studio provided a lot of freedom and responsibility regarding research. Integrality

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

My graduation work elaborates on the redevelopment (restoration as well as renovation) of existing vacant building blocks. Taking sustainability, heritage, and optimum utilization into account. The Netherlands for example has lots of vacant buildings. These square meters are a result of economic and demographic choices and changes. I opt to broaden my knowledge and skill set regarding transformations of buildings of all sorts and within as many different social and cultural urban landscapes in order to battle vacancy, underutilization and boost more social and environmental sustainability. This can also be viewed as means to battle changing or aging demographics and its effects on cultural pride and vacancy.

In a broader societal context, this research proposes Tallinn's Volta Cultural Centre to address serious challenges of urban deterioration and community well-being. The project has social relevance since it prioritizes safety, accessibility, and cultural integration, resulting in a space that actively engages a diverse target audience, including children and adults. The project supports sustainability goals by adaptively reusing existing structures, fostering responsible resource use and environmentally mindful urban development. The Volta Cultural Centre serves as an engine for good social development in the Volta neighborhood and provides a repeatable model for similar organizations around the world by instilling community pride and providing a socially inclusive space.

The scientific significance of this graduation project comes from its contribution to the discussion on sustainable urban redevelopment and architectural innovation. Addressing the issues of the Volta neighborhood in Tallinn, Estonia, this research project investigates the delicate balance between history preservation, community participation, restoring the image ("the bay is their pride") and functional design. The project's complete methodology, which includes heritage research, iterative design, and potential environmental impact assessments, contributes significantly to the scientific understanding of effective cultural center design in historical contexts. Beyond offering a solution for Volta, this work aspires to offer relevant insights globally, establishing itself at the confluence of architecture, cultural studies, and urban planning.