

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	Ke Ling Neoh
Student number	5764734

Studio	
Name / Theme	Methods of Analysis and Imagination – A Matter of Scale
Main mentor	Prof.dr.ir.Klaske Havik Architecture Methods of Analysis and Imagination
Second mentor	Ir. Pierre Jennen Building technology
Argumentation of choice of the studio	The studio provides more flexibility in the exploration of personal interest and fascination.

Graduation project	
Title of the graduation project	The Atmosphere of Silence: Mustakivi Art Museum
Goal	
Location:	Lasnamäe district in Tallinn, Estonia
The posed problem,	<p>1. Mental Health Issues:</p> <p>The Estonian National Institute of Health Development and the University of Tartu conducted a health study from 2020 to 2022, revealing the prevalent occurrence of mental health issues within the Estonian population, particularly in depression and anxiety disorders. The probability of mental health issues increases notably, especially in the aftermath of the global pandemic. Today, more than a quarter (28%) of Estonians face the risk of depression, whereas one in five, approximately 20% of Estonians, are at risk of developing anxiety disorder (Ministry of Social Affairs, 2022)</p>

Lasnamäe is chosen as the main study area as it is Tallinn's most densely inhabited neighborhood. The research indicates that adolescents and young adults, individuals with lower levels of education and lower incomes, as well as the unemployed, are more vulnerable to mental health problems, which to a certain extent, aligns with the demographic composition of Lasnamäe. (Ministry of Social Affairs, 2022).

Moreover, the Estonian Human Development Report (Randver et al., 2023) highlighted that preventing mental health problems is more manageable than treating them. However, the overall structure of the care system supporting people's mental health and well-being is fragmented, complex and under-resourced.

2. Lack of cultural spaces in Lasnamäe

Paul Agurauja, the director of Tallinn Art Hall: "Even though Lasnamäe has the highest population density in Tallinn, it has almost no cultural activities. If treated as a standalone city with its 120,000 residents, Lasnamäe would rank as Estonia's second-largest city. Nevertheless, it has always been a sleeping district with no easy access to contemporary Estonian culture."

There is a disconnection between Lasnamäe and the wider Tallinn region mentally and culturally. There is a negative stereotype originated during the Soviet occupation and the elevated crime rate experienced in Lasnamäe during the 1990s. Till today, the perception towards Lasnamäe has not yet successfully shifted because of its self-sustaining infrastructure, which contributes to the neighborhood's inward-focused orientation. Lasnamäe is

	<p>well-equipped with daily amenities such as kindergarten, schools, playgrounds, and shops, providing residents with everything they need within the area. However, the lack of cultural and gathering spots eliminates the will for 'outsiders' to visit and explore the district.</p> <p>Conclusion:</p> <p>Pointed out in the Culture for Health Report by the World Health Organization (2022:3), "the arts provide cost-effective interventions for complex health challenges that may not have current healthcare solutions, while alleviating pressures on limited health resources", emphasizing the significance of arts and cultural activities in promoting the positive mental health and well-being.</p> <p>With the dual focus on mental health issue and the deficiency of cultural spaces in Lasnamäe, the proposed project aims to devise a concept or a function that effectively tackle both issues.</p>
<p>research questions and</p>	<p>Definition of 'Silence': Silence is not about the emptiness and absence of sound, but a fullness of mindful presence. It is the ability to listen inwards, to experience inner peacefulness and relish meaningful moments in the present.</p> <p>Main question: Respecting the local context of Lasnamäe, how can architecture shape the atmosphere of silence in a cultural setting?</p> <p>Sub questions:</p>

	<ol style="list-style-type: none"> 1. What is the value and significance of constructing a cultural building in Lasnamäe? 2. How can architecture (focus specifically on sight and sound) help to improve a person's mental health? 3. What type of program fosters inner tranquility, and what acoustic criteria are essential for these spaces? 4. What is the ideal spatial formation in allowing potential users to embrace inner peace and reconnect with their emotions?
design assignment in which these result.	[Design Assignment]
<p>A refuge from the outside world: An art museum that challenges the notion of sound while questioning the role of quietude in cultural public spaces, as well as seeking a balance between community gathering and solidity reflection. Diverging from mainstream museums where sound design is typically isolated from architecture and more closely tied to individual exhibits, the proposal also aims to weave the atmosphere of silence into the very fabric of the museum as its primary exhibition of all time.</p> <p>The function of the museum will be divided into four main group, based on its function or acoustic zoning, targeting potential users with different needs:</p> <ol style="list-style-type: none"> 1. Museum spaces: Recognizing these spaces might not be universally suitable, the design of this program is aimed at individuals or minorities seeking refuge from external distractions. The museum spaces also double up as healing spaces, which will have a strong acoustical consideration in comparison with the two other categories. 2. Sound transitional zone: Semi public space such as library which also act as a transitional sound zone from public gathering to quiet museum areas. The function of these spaces allows users to be aware of their volume and talk in a slight lower tone. 3. Communal gathering area: Addresses Lasnamäe's issues of limited cultural and gathering spaces, seeking to play a role as a cultural center, meeting the needs of the residents of Lasnamäe. 4. Administrative spaces <p>Besides that, to find out what elements contribute to inner tranquility and, at the same time, help with depression and anxiety, I have looked into several psychology and neurology reports. According to those research reports, it is proven scientifically that the sound-vision correlation of nature with the human mind, especially the sound</p>	

of water, is very effective in providing therapeutic qualities physiologically and psychologically.

Hence, the project aims to utilize water elements as the primary design strategy, taking on the fluidity and subtle movement of water to shape the atmosphere of the proposed building. Landscape-wise, water can be featured as a visual guiding element. As the site is located beside a major highway, the sound of water also helps mask external noises and redirect users'/passersby's attention towards the water sound source.

Instead of straight grid lines, the proposed building also opts for curvy walls, allowing the sound texture to vary subtly as one strolls through the building. Circular/ concave or convex surface also acts as a better sound concentration or reflection surface than rectilinear form.

Process

Method description

To answer the main research questions ("how can architecture shape the atmosphere of silence in a cultural setting?"), literature review will be conducted and several case studies will be analyzed to understand the relationship between form and sound, form and daylight, atmosphere of space and how silence is defined architecturally. Through compiling a catalogue of related projects, it will eventually build up the theoretical framework for the project.

I intend to organize the working process into four categories – Position, Proposition, Proposal, Contribution and Reflection. The examples provided below show the different considerations and analysis essential within each defined category.

1. Position: Problem Statement, Site Study, User Analysis

2. Proposition: Restorative qualities of urban versus nature elements based on psychological and neurological research reports, Program Study, Massing Study, Plan, Elevation and Sectional Study

(In terms of form-sound study, I intend to adopt parametric tools – Pachyderm Acoustical Simulation (Grasshopper) to predict noise and visualize sound propagation.)

3. Proposal: Acoustical Consideration, Material, Structure, Construction methods, Atmosphere, Detailing

4. Contribution and Reflection: Relate it back to the studio theme, 'A matter of scale.'

Literature and general practical references

Key Literature

Culture for Health (2022) *Culture's contribution to health and well-being: A report on evidence and policy recommendations for Europe*. [Online] [Accessed 10th November 2023] https://www.cultureforhealth.eu/app/uploads/2023/02/Final_C4H_SummaryReport_small.pdf

Dorrian, M and Kakalis, C. (2020) *The place of silence: Architecture/ Media/ Philosophy*. London: Bloomsbury Publishing.

Pallasmaa, J. (2005) *The Eyes of the Skin: Architecture and the Senses*. West Sussex: Wiley-Academy.

Randver, R., Streimann, K., Purre, M., Sultson, H., Tulviste, J. Akkermann, K and Haring, L. (2023) 'Chapter 1.5: Activities and services supporting mental health in Estonia: the current situation and development needs.' In Sisask, M. (ed.) *Estonian Human Development report 2023*. Estonia: SA Eesti Koostöö Kogu.

Shaw, C. (2022) *A Radical Vision by OPEN: Reinventing Cultural Architecture*. New York: Rizzoli

Sioli, A. and Kiourtsoglou, E. (2022) *The Sound of Architecture: Acoustic Atmosphere in Place*. Leuven: Leuven University Press.

Zumthor, P. (2006) *Atmospheres*. Basel: Birkhauser Verlag AG

Key reference projects

Monologue Art Museum, Qinhuangdao, China (2022), Wutopia Lab

Museo Silkeborg, unbuilt (1964) Jorn Utzon

National Taichung Theatre, Taichung, Taiwan (2016) Toyo Ito, ARUP, Balmond Studio

Stedelijk Museum, Amsterdam, Netherlands (2012) Benthem Crouwel Architects

Taipei Public Library Beitou Branch, Taipei, Taiwan (2006) Bio-Architecture Formosana

Tallinn Song Festival Ground, Tallinn, Estonia (1959), Alar Kotli

The Sound of Chapel, Chengde, China (2021) OPEN Architecture

Virgilio Barco Library, Bogota, Columbia (2001) Rogelio Salmona

Water Temple, Kyoto, Japan (1991), Tadao Ando

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)?

Aligned with the studio theme, 'A Matter of Scale,' the proposed graduation project confronts challenges across various dimensions. From a global standpoint, the project contributes to the ongoing global discussions on the relationship between architecture, depression and anxiety. On the city scale (Tallinn and Lasnamäe), the project aims to reintegrate Lasnamäe into Tallinn's cultural fabric while challenging and dispelling stereotypes associated with this Soviet district. Zooming into the scale of a micro district, Mustakivi, where the site is located, the initiative seeks to establish a new cultural focal point in the heart of the micro-district. This is first to enhance the community's sense of belonging and inclusivity and, secondly, to revitalize the urban streetscapes to foster a more enjoyable everyday urban experience. Lastly, concerning the scale of a building and its relationship with the human body, the project aims to explore the relationship between form, sound and user experience. The project can be viewed as an experiment to study how architecture, through shaping the atmosphere of space, allowing one to relax and reconnect with their inner selves.

In relation with the master track and master programme, the approach of the studio provides me with the opportunity to delve into my personal architecture interest. By giving the flexibility to explore the site, form and typology, the studio allows us to take a position as a future architect in practice considering all the different aspect (social, environmental, economical etc.)

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

Within the global discourse surrounding mental health and architecture, especially after the COVID-19 pandemic, the graduation project aspires to contribute by exploring the relationship between the built environment and mental well-being, focusing on cultural architecture. The primary goal is to open up the conversation to de-stigmatise mental health concerns, especially in countries where there may be a tendency towards introversion. Utilising cultural architecture, in this case, an art museum, is a relatively deliberate choice, as it is perceived as a more approachable typology for potential users to visit and participate in, compared to projects such as psychiatric or wellness centres