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	Tala Wadeh
Student number	4872525

Studio		
Name / Theme	Maritime heritage	
Main mentor	Lidy Meijers	Design
Second mentor	Koen Mulder	Building technology
Third mentor	Wido Quist	Research
Delegate of the Board of Examiners	Paul Kuitenbrouwer	
Argumentation of choice of the studio	I chose the Heritage studio because it aligns with my passion for balancing historical preservation and contemporary needs. In my MSc 1, exploring the "R strategies" showed me how heritage projects can integrate past and present thoughtfully. Writing a position paper on the Maassilo in Rotterdam was pivotal; it highlighted how adaptive reuse can make heritage sites vital to modern communities.	

Graduation project	
Title of the graduation project	What Future for the Past? The Adaptive Reuse of the Sliedrecht Water Tower
Goal	
Location:	Sliedrecht, Netherlands
The posed problem,	The redevelopment of the Sliedrecht Water Tower highlights the challenges of balancing historical preservation with contemporary urban demands. Built in 1886, the tower is a vital cultural and architectural landmark that symbolizes the region's hydraulic engineering heritage and public health advancements. However, it faces structural threats from environmental stressors, such as salt-laden air and humidity, alongside pressures for adaptive reuse to meet modern needs. This dual challenge requires integrating sustainable materials and techniques into its transformation to preserve its

	historical and architectural authenticity while accommodating contemporary functions. The tension between heritage conservation and urban renewal is further compounded by the community's desire to retain the tower as a cultural symbol, necessitating a sensitive approach to its redevelopment. The posed problem is how to ensure the Sliedrecht Water Tower's structural integrity and historical value are preserved while repurposing it to serve modern urban and community needs sustainably.
research questions and	How can sustainable materials and techniques be applied in the transformation of the Water Tower in Sliedrecht to preserve the historical and architectural authenticity? This question is supported by several sub-questions aimed at exploring the various dimensions of the transformation process. These sub-questions include: - What are the values of the Water Tower that must be preserved during the transformation process? - Which sustainable materials and techniques are best suited for preserving the tower's structural integrity? - How can sustainable design principles be integrated into the Water Tower's transformation to enhance its functionality while maintaining its heritage character?
design assignment in which this result.	The design assignment for the redevelopment of the Sliedrecht Water Tower focuses on integrating sustainability, historical preservation, and modern functionality. The objective is to develop a comprehensive design proposal that ensures the tower's structural integrity, respects its historical and architectural significance, and fulfills contemporary urban and community needs. **Key Design Goals:**

	1. **Preservation of Historical and Architectural Values** o Maintain key historical attributes, including the tower's cylindrical structure, decorative brickwork, and distinctive water tank design. o Emphasize original design elements, such as arched windows and cement-plastered facades, in the adaptive reuse strategy. 2. **Incorporation of Sustainable Practices** o Utilize environmentally friendly materials and techniques to mitigate the effects of salt-laden air, humidity, and other environmental stressors. o Introduce renewable energy sources, such as solar panels, and water conservation systems to align the project with modern sustainability standards. 3. **Adaptive Reuse for Modern Functionality** o Reimagine the tower as a cultural and hospitality space. o Ensure accessibility and usability for all, including the addition of elevators and adaptable interior spaces. **Program for the Redeveloped Water Tower:** • **Hospitality Functions:** o **Café/Restaurant**: A modern, sustainable café or restaurant offering locally sourced food and beverages, creating a social gathering space for residents and visitors. o Rooftop Terrace: An outdoor terrace with views, featuring a café or bar. This space could serve as a unique dining or relaxation area while emphasizing the tower's distinctive height and location. **Design Deliverables:** 1. **Architectural Plan** o Detailed design drawings that illustrate how the tower's original structure will be preserved and adapted for new uses. 2. **Material and Sustainability Strategy**

	○ A detailed material palette prioritizing sustainable. ○ Energy-efficient design features, such as enhanced insulation, solar integration, and eco-friendly finishes. 3. **Structural Assessment and Reinforcement Plan (not sure yet)** ○ Technical analysis of the tower's structural condition, identifying required reinforcements. ○ Innovative techniques for strengthening the structure without compromising historical authenticity.

Process

Method description

Historical and Value Assessment

- Conduct archival research to identify the Water Tower's historical and architectural significance.
- Assess cultural, symbolic, and community values through heritage studies and stakeholder input to determine what aspects must be preserved.

Case Study Analysis

- Examine similar adaptive reuse projects (e.g., water towers in Rotterdam and Delft) to extract best practices in preserving authenticity, sustainability, and functionality.

Sustainability Review

- Analyse eco-friendly materials and techniques suitable for maritime environments, emphasizing corrosion-resistant materials, renewable energy, and passive design principles.

Technical Assessment

- Evaluate the structural condition of the Water Tower with engineers to ensure proposed interventions align with heritage preservation and sustainability goals.

Design Proposal

- Develop and refine adaptive reuse concepts based on findings, integrating stakeholder feedback and sustainability principles.

Literature and general practical references

1. **Gemeente Sliedrecht.** (2023). *Historical inventory and evaluation report of the Sliedrecht Water Tower.* Municipality of Sliedrecht.

    ○ This report provides an historical evaluation and inventory of the Sliedrecht Water Tower, outlining its historical, architectural, and cultural values

2. **Getty Conservation Institute.** (1994). *Principles for the conservation of heritage sites.* Los Angeles, CA: Getty Publications.

    ○ This foundational work on the principles of heritage conservation offers guidelines for preserving and maintaining heritage sites with minimal intervention, ensuring both authenticity and long-term viability.

3. **Historische Vereniging Sliedrecht.** (1986).

- This resource provides valuable information about Sliedrecht's rich history, including a collection of articles, photos, and documents. It covers topics such as the town's architectural heritage, local genealogical resources, and historical sites.

4. **ICOMOS.** (2013). *Guidelines for the analysis of cultural heritage authenticity*. International Council on Monuments and Sites.

    - These guidelines are critical for assessing and maintaining the authenticity of cultural heritage sites during restoration and adaptive reuse processes, aligning with the research on preserving the Water Tower's architectural integrity.

5. **Nederlandse Watertoren Stichting.** (n.d.). *Water towers in the Netherlands: Conservation and reuse*.

    - The foundation provides guidance on the conservation and adaptive reuse of water towers in the Netherlands, offering case studies and best practices that can be applied to the Sliedrecht Water Tower.

6. **Rijksdienst voor het Cultureel Erfgoed.** (2017). *Industrial heritage and modern transformations.* Ministry of Education, Culture, and Science, Netherlands.

    - This publication explores the challenges and opportunities of transforming industrial heritage in the Netherlands, offering valuable insights into modern adaptation and conservation strategies.

7. **Sliedrecht24.** (2023). Local

    - It's a local news platform covering a wide range of topics related to Sliedrecht, such as local events, community updates, sports news, and municipal matters. Recent articles include updates on local businesses, historical exhibits, and community projects.

8. **Watertorens.nl.** (n.d.). *The adaptive reuse of Dutch water towers.*

- This resource highlights successful examples of adaptive reuse projects involving Dutch water towers, offering case studies that inform the redevelopment of heritage structures like the Sliedrecht Water Tower.

Reflection

1. **Relation to Graduation (Project) Topic:**

   The graduation project, titled **"What Future for the Past?"**, focuses on the redevelopment of the Sliedrecht Water Tower, an iconic structure that embodies both historical significance and the challenges of modern urban development. The central question of this project revolves around finding a delicate balance between preserving the tower's historical value while transforming it into a functional, sustainable space for contemporary use. This project not only contributes to the discourse on heritage preservation but also explores the concept of adaptive reuse in the context of an evolving urban environment.

By applying sustainable materials and techniques, the project aims to address the dual challenge of maintaining the tower's architectural authenticity while integrating it into a modern context. The tower, built in 1886, is a reminder of the region's hydraulic engineering heritage and public health advancements, yet it now faces structural threats due to environmental stressors. This connection to the past informs the project's design approach, which values the conservation of historical attributes while adapting the tower for new, contemporary functions.

2. **Relevance in Larger Framework:**

The relevance of this project extends beyond the immediate context of the Sliedrecht Water Tower to a broader architectural and urban planning framework. The adaptive reuse of heritage buildings has become an important topic in contemporary architectural discourse, particularly in the context of preserving cultural identities while addressing modern-day challenges. In the case of the Sliedrecht Water Tower, the project responds to the increasing pressure on historical structures to remain relevant in a rapidly changing urban landscape.

This project also ties into larger sustainability goals, which are central to urban renewal practices worldwide. By incorporating renewable energy sources, such as solar panels, and employing corrosion-resistant materials, the project exemplifies how historical structures can be integrated into a future-oriented, environmentally conscious framework. The focus on energy efficiency, sustainable materials, and eco-friendly practices ensures the tower's long-term viability, both structurally and functionally.

Moreover, this project aligns with broader cultural and community development goals. The preservation of the tower as a cultural symbol for the Sliedrecht community is essential in maintaining a sense of local identity, while the adaptive reuse will allow for new public functions that foster community engagement and urban renewal.

The integration of these themes—historical preservation, sustainability, and adaptive reuse—addresses key issues in urban planning and architecture today. It demonstrates how architectural practice can be a vehicle for reconciling the past with the future, ensuring that heritage structures remain valuable contributors to the community while accommodating modern needs. The Sliedrecht Water Tower, once a symbol of public health and hydraulic engineering, has the potential to become a cultural and hospitality space, offering a living place where history meets modern urban life.

Ultimately, this project exemplifies the challenges and opportunities faced in the adaptive reuse of heritage buildings and contributes to the larger framework of sustainable urban development and cultural conservation in a rapidly changing world.