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	Jasper Ambagts
Student number	5089506

Studio		
Name / Theme	AR3AD105 Dwelling Graduation Studio: Global Housing	
Main mentor	Nelson Mota	Architecture and the Built Environment
Second mentor	Ludovica Cassina	Architecture: Technical Building Design
Argumentation of choice of the studio	I chose the *Dwelling Graduation Studio: Global Housing* because it addresses housing as a crucial issue in today's world, particularly in regions impacted by climate change. What resonates with me is that the studio doesn't solely focus on creating more houses to tackle the housing crisis but also emphasizes the importance of context in global housing. This includes exploring solutions like affordable housing or self-help housing, which are equally vital in addressing housing challenges.	

Graduation project	
Title of the graduation project	Reviving Tradition: Designing Climate-Resilient Homes for a Changing Bangladesh
Goal	
Location:	Shonatola, Sylhet, Bangladesh
The posed problem,	Bangladesh faces severe climate challenges, including floods, cyclones, and rising sea levels, which threaten infrastructure and livelihoods, particularly in vulnerable regions like Sylhet. In rural areas, current housing trends increasingly rely on hard, non-sustainable materials like concrete and brick to combat flooding, overlooking the proven adaptive qualities of traditional vernacular architecture. This shift undermines sustainability and resilience. The challenge is to explore how traditional architectural practices can be reintegrated into contemporary housing to create climate-resilient

	and sustainable solutions for these high-risk areas.
research questions and	**Main Research Question** 'How can the traditional practices and values of Bangladeshi vernacular architecture be integrated into contemporary housing design to enhance resilience against climate change hazards in vulnerable areas like Sylhet, Bangladesh?" **Sub-Questions:** *"What are the cultural values and traditions embedded in Bangladesh's vernacular architecture and lifestyle, and how can they be preserved and integrated into contemporary housing design?"* *"What key features of Bangladesh's vernacular architecture contribute to its adaptability to the current climate, and how can these be incorporated into contemporary housing design?"* *"How has climate change influenced the frequency and severity of natural hazards in Sylhet, Bangladesh, and how are these trends expected to evolve?"* *"How can past projects that have attempted to implement (Bangladeshi) vernacular architecture into contemporary housing design to enhance climate resilience contribute to develop strategies for merging traditional building principles with contemporary housing design?"*
design assignment in which these result.	The design assignment is to create **climate-resilient homes** in Shonatola, Sylhet, Bangladesh, a region at risk from climate change and frequent floods. The project will focus on: 1. **Understanding the Site**: Studying the environment, culture, and living conditions in Sylhet to identify the challenges caused by flooding and climate change. 2. **Learning from Tradition**: Looking at traditional Bangladeshi architecture to find useful ideas and methods that can be adapted for modern housing. 3. **Developing Solutions**: Designing homes that are sustainable, strong enough to

handle climate risks, and reflect the culture of the local community.

4. **Working with the Community**: Listening to local people to make sure the designs meet their needs and fit their way of life.

The goal of this project is to show how traditional knowledge can be combined with contemporary design to create housing that is both climate-resilient and respectful of cultural traditions. The goals of this research are:

• To investigate the traditional architectural practices of Bangladesh, focusing on elements that have historically contributed to resilience in the face of climate hazards.

• To assess the limitations and potential for improvement in these vernacular techniques to meet the demands of contemporary housing in vulnerable areas such as Sylhet.

• To analyze the impact of climate change on the frequency and severity of natural hazards in Sylhet, Bangladesh, and to project how these trends are likely to evolve in the future.

• To develop strategies for merging traditional building methods with contemporary housing design, ensuring that both climate resilience and the preservation of cultural values are prioritized in the design of contemporary housing solutions.

Process

Method description

This research will employ a combination of diverse methods to study the housing practices and challenges faced by rural residents of Shonatola village in Bangladesh. These methodological approaches aim to provide an in-depth understanding of the residents' lifestyles and vulnerabilities, combining theoretical insights from literature with practical observations gathered through interviews, case studies, and field research

Literature Review
A literature review will be conducted to supplement the field data. Sources will include journalarticles, books, reports, and news articles that discuss Bangladesh's vernacular architecture, climate resilience strategies, and local lifestyle. This will provide background knowledge on traditional architectural practices, the impact of climate change in the region, and current climate adaptation efforts.

Interviews
One critical component missing from available literature is a description of the day-to-day lives of Shonatola residents and their housing-related challenges. For instance, while studies highlight the growing reliance on concrete and brick structures to combat flooding, they lack detailed narratives of residents' experiences with these materials during natural disasters. To gather this information, I've conducted interviews with residents of the shonatola village.

Literature Review
This research will incorporate case studies to analyze various housing types in Shonatola village, focusing on their spatial functionality and resilience to flooding. This includes investigating traditional vernacular homes, modern concrete structures, and any hybrid designs that attempt to combine sustainability with flood resilience.

For example, photographs and data from studies on rural housing in flood-prone areas will complement field observations, providing a comparative analysis of traditional and contemporary housing approaches. These case studies aim to identify sustainable design principles that can be reintegrated into contemporary housing to enhance resilience.

Design Exploration
To address the pressing need for climate-resilient housing, this research will explore innovative approaches to contemporary housing in Shonatola. Inspired by vernacular traditions.

Literature and general practical references

References in Research plan:

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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 project aligns with the studio's focus on housing within a global and local context, addressing the challenges of climate resilience in vulnerable regions. The topic integrates the master track's emphasis on Architecture and the Built Environment with a exploration of traditional practices and how to apply them in contemporary housing design. It also connects to the broader MSc AUBS program by incorporating elements from other master tracks, such as developing a masterplan (Urbanism & Landscape Architecture) and designing buildings that are not only sustainable but also structurally and technically well-engineered (Building Technology).

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

   Climate change is arguably one of the most significant global challenges of our time. This graduation work directly addresses this issue by studying materials and the history of vernacular architecture to develop sustainable housing solutions. Additionally, the project emphasizes creating designs that enable residents to live in harmony with their evolving climate.