

Danai Makri
5862906

Half Pucca

from temporary to permanent

AR3AD105

MSc3 MSc4
Global Housing Graduation Studio

Architecture of Transition in the Bangladesh Delta

Tutors:
Dick van Gameren, Ludovica Cassina, Antonio Paoletti

Reflection

The relation between the graduation project topic, the master track and the master programme.

The graduation studio is grounded in the theme of *architecture in transition*, set within the rapidly growing second-tier city of Sylhet, located in north-eastern Bangladesh. The Sylhet region faces multiple challenges arising from increasing industrialization, internal migration, and the effects of climate change. In response, the studio investigates the broader context of the Sylhet division, with a focus on material culture, urbanization trends, dwelling patterns, and contemporary societal demands.

In alignment with the studio's theme, my graduation project concentrates on a specific and increasingly vulnerable population—climate-displaced communities. Situated in a village that is both flood-prone and undergoing rapid urban transformation, my project aims to reimagine patterns of inhabitation rooted in rural Bangladesh. The design proposes an extension and connection between two existing villages, intended to accommodate both displaced individuals and local village residents. The goal is to foster a shared, resilient community fabric.

This approach directly reflects the objectives of the MSc Architecture, Urbanism and Building Sciences program at TU Delft, which emphasizes innovative responses to pressing global issues, including urban densification, sustainable construction, and inclusive environments. Specifically, my project supports the goals of the Architecture master track by developing a strategy for affordable housing targeted at people forced to relocate due to environmental pressures. Moreover, it shifts the prevailing narrative from temporary *disaster emergency shelters* to *permanent structures* that can be flexibly adapted to the diverse needs of inhabitants.

Beyond the Architecture track, this project intersects meaningfully with other master tracks such as Building Technology, Landscape Architecture, Urbanism, and Management. It touches on sustainable construction methods, landscape resilience, urban integration, and socio-spatial governance, making it a multidisciplinary exploration of architecture in transition.

The influence of the research on the design and vice versa.

Research played a fundamental role in shaping the foundation of my thesis project, particularly in formulating the problem statement and establishing the conceptual framework. Through qualitative and quantitative data analysis, case study evaluations, and an extensive literature review, I was able to develop a nuanced understanding of the context and challenges. This evidence-based approach enriched the project's direction and helped articulate a grounded, well-informed design response.

The issue of internal displacement in Bangladesh is multifaceted, involving three main categories of affected populations: temporary, transitional, and permanent. Each of these groups requires context-sensitive solutions, such as return, local integration, or resettlement. Among these, transitional groups are particularly vulnerable, as they are unable to return to their places of origin and often lack the means for permanent

relocation. While the Disaster Management Act (DMA) provides frameworks for emergency shelter and post-disaster resettlement, it falls short of addressing the entire spectrum of displacement stages. Government relief typically targets specific disaster zones, but the recurring nature of floods and their wide-ranging socioeconomic impact call for broader, more inclusive strategies.

The cyclical nature of disasters in Bangladesh results in overlapping waves of displacement, with new groups entering temporary shelters before previous ones have been able to move on. This reality underscores the need for semi-permanent, resilient housing solutions that can accommodate extended periods of occupation without losing adaptability or cultural relevance.

Even though there was a struggle at first to translate my research to a project, I decided to focus on the dwelling itself as the epicenter of the everyday life and the transitional stage of the displaced people. Creating a space with affordability and transformative design embedded was key to get a final design approach, were a direct result of the interactive relationship between research, documentation in the field trip and design.

Although I initially struggled to translate research findings into a concrete design, I eventually identified the dwelling as the core of everyday life for my project and as a critical anchor for transitional communities. Focusing on the design of adaptable, affordable living spaces became the key to developing a coherent architectural strategy. The final design was the outcome of a continuous feedback loop between research, field documentation, and iterative design development.

Field visits, photographic documentation, and conversations with local residents and experts significantly influenced design decisions. Images and sketches from the villages I visited were constantly referenced to inform functional layouts, spatial organization, and urban connections. Notes and insights gathered during these interactions grounded the project in lived experiences, shaping both macro and micro-scale strategies.

The value of the personal way of working (approach, methods, how the feedback from tutors was translated into my work).

My approach to the graduation project was both structured and adaptive, shaped by the organization of the studio and my personal methodology. The design process unfolded in four main phases, which occasionally overlapped and informed one another.

The first phase centered on the formulation of a personal manifesto—a guiding framework that shaped the entire design process. During this phase, I revisited my phase one case study of Belapur housing and the documentation I had gathered during my field trip to Bangladesh, including photographs, sketches, and interviews. I also studied videos and other visual materials to better understand patterns of everyday life. At the same time, I delved into research on funding models, case studies focused on affordability, and strategies related to incrementality, which helped me explore the nuanced spectrum between permanence and temporality in housing design.

In the second phase, the focus shifted to the dwelling scale. This allowed me to translate the lived experiences of displaced and rural communities into spatial and architectural terms. I spent a significant amount of time exploring diverse possibilities for inhabitation, investigating how space could adapt to the evolving needs of its users while remaining accessible and culturally relevant.

The third phase expanded the design to a larger scale, emphasizing clustering systems and unit replicability. In both the second and the third phase I worked very closely with my building technology tutor since we both thought that the way to translate my goals and my research to a project was more technical. The studio's collective material research also played a vital role during this time, offering insights into local construction techniques, material availability, and community knowledge. This research unlocked new design opportunities, enabling me to develop building systems that are grounded in local realities while offering flexibility and empowerment to future residents.

The fourth and final phase was a synthesis of the entire process—bringing together site analysis, ethnographic research, design iterations, and community insights into a cohesive masterplan. This phase connected two existing villages with the proposed development, creating a spatial and social bridge. The resulting community design offers a low-rise, high-density layout inspired by rural living patterns, while remaining adaptable to urban influences and future growth.

Throughout the entire process, trial and error was a key method in refining the design. Iteration allowed for experimentation, discovery, and critical evaluation. Due to the project's complexity and its multiple layers reaching 'design dead ends' was inevitable at times. However, these moments often became turning points. Conversations with Marina Tabassum were particularly valuable during such times. Her deep understanding of Bangladeshi culture and architectural norms offered both clarity and direction, helping me reconnect the project to its roots while maintaining the broader vision. In essence, my working method was one of continuous reflection, responsiveness to feedback, and iterative testing, all underpinned by a strong research foundation.

Academic and Societal Relevance, Scope, and Ethical Implications

My graduation project addresses several important issues that are relevant to the wider architecture community, including incrementality, adaptability, affordability, and cultural continuity in design. These topics combine social, economic, and environmental perspectives, which makes the project valuable for further research from different academic fields. It also deals with the idea of integration into a peri-urban context, aiming to improve living conditions without changing the existing character of the area. The design builds on local patterns of life in rural Bangladesh while responding to rapid urbanization.

Academically, the project contributes to the discussion around climate-induced displacement, which is a growing challenge in Bangladesh. It uses a research-based approach that includes fieldwork, community observation, and material studies, helping turn complex problems into practical design solutions. On a societal level, the project suggests an alternative to standard emergency shelters. Instead of being temporary, the proposed solution is a permanent structure that can be adapted to people's changing needs and different ways of living. By using local materials and skills, the design supports communities and allows them to be part of the building process.

During this thesis I focused on dignity and inclusion. The proposal avoids a top-down approach and instead tries to give displaced people the ability to shape their own homes. The goal is to create not just shelter, but homes and communities that people can grow with and that is why it was designed with respect to the culture and identity, while also offering affordable, long-term, and flexible housing.

Ethical Issues

Ethical issues play an important role in my graduation project, especially given the sensitive context of climate displacement and housing insecurity. Designing for vulnerable communities involves the risk of imposing external solutions that may not reflect their needs, values, or way of life. To address this, I grounded the project in field research, community observation, and cultural understanding, ensuring that the design respects local identities, traditions, and social dynamics. I would like to be able to work with the community together for the final design to make it with their input, something that unfortunately was not possible.

Another ethical concern is the balance between urgency and permanence—while emergency housing is often seen as short-term, my project challenges this idea by proposing a permanent yet adaptable solution that can evolve with its users. Affordability and accessibility were also key ethical priorities, as the project aims to serve people across different income levels without creating further inequality.

Time management and Studio organization

The timing and structure of the studio had a significant impact on the development of my graduation project. Our field trip to Bangladesh took place at the beginning of December, which left only about two weeks to complete both the site analysis and personal manifesto before the P2 presentation. This made the initial phase of the project very intense and rushed. Additionally, the research and design phases were quite separate in the studio's organization, which sometimes made it difficult to connect the two and benefit from more integrated feedback. Just as the design work was beginning to take shape, we had to pause again for two weeks to focus on material research. These repeated interruptions and limited time created pressure to move on to the next phase even when the design was still underdeveloped. In hindsight, it would have been more effective to conduct the material research before and during the trip, and to involve the research mentors earlier in the design process. This would have allowed us to form a more solid foundation for the project from the beginning, with clearer connections between research, materials, and design goals. It could have helped avoid many dead ends and made the process smoother and less stressful.

Transferability

The project offers a replicable model that can be used in other vulnerable areas in Bangladesh. The modular building system, use of local materials, and flexible spatial layouts allow the project to be adjusted. Furthermore, the design framework supports incremental growth, making it suitable for communities with limited resources that may need to build or expand over time. This makes the project not only a solution for climate-displaced people in Sylhet, but also a potential model for resilient housing in

other vulnerable, flood-prone, or informal settlements. By focusing on long-term habitability and integration into existing communities, rather than temporary shelter alone, the project promotes a sustainable and inclusive approach to displacement

My utopic goal is for it to become a pilot project that could help house displaced communities across the country—moving away from slums and temporary shelters, and towards safer, more permanent, and dignified living environments.