

Reflection

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Introduction & Motivation

The Sweepers communities in Bangladesh live on the urban margins, performing essential sanitation work while enduring unsafe, overcrowded, and flood-prone housing. Despite their critical role in maintaining city hygiene and infrastructure, they are largely excluded from formal urban development and planning processes. This thesis explores how flexible, climate-resilient, and culturally sensitive housing can address both the environmental and social vulnerabilities these communities face. The goal is not only to improve physical living conditions, but to support, privacy, and community life through inclusive design.

My motivation for focusing on this community stems from a belief that architecture must serve those most often left behind. Not only sweepers communities, but people living in slum areas in general. After visiting the site and speaking with residents, I came to understand how deeply housing is tied to survival, identity, and opportunity—particularly for women and children. I was especially struck by the resilience and adaptability already present in these communities, and how targeted, thoughtful design interventions could significantly improve their daily lives.

Improving housing for marginalized groups like the Sweepers is not just a humanitarian goal; it strengthens the city overall. Inclusive, resilient urban design makes cities healthier, safer, and more equitable—ensuring that growth does not come at the expense of those who keep the city running.

Understanding the How and Why?

In the early phase of my graduation project, I aimed to ground my design in the lived experiences of the Sweepers communities. My methodology combined site visits, interviews, spatial analysis, and literature review to build a contextual understanding of both physical conditions and cultural practices. The intention was to incorporate participatory principles and allow for some level of self-help or resident-driven adaptation in the design.

However, in practice, the scale and density of the site demanded larger housing blocks to meet urban planning and spatial efficiency requirements. This limited the feasibility of a true self-help approach and made active resident participation more difficult. Engagement ended up being limited to a few interviews rather than deeper collaboration. While this was not the level of participation I initially hoped for, these conversations still played a meaningful role in informing key design decisions particularly around privacy, flexibility, and communal space.

Interestingly, while the site scale posed challenges for participation, it also offered significant opportunities. It enabled me to design climate-resilient strategies at the urban scale such as elevated housing, flood-adaptive ground floors, and the clustering of units to promote both community interaction and environmental efficiency.

Process-wise, the phased research approach worked well in layering context, needs, and site constraints into a cohesive design direction. Yet, I underestimated how challenging it would be to reconcile bottom-up intentions with top-down spatial demands. This experience deepened my understanding of the complexities involved in participatory design, especially when working with vulnerable communities in dense urban settings. While the “how” didn’t fully align with my original plan, the “why” behind the approach remains valid, and the input I did gather helped steer the project toward a more sensitive and grounded outcome.

Response to feedback and Personal learning

Throughout the year, the weekly tutoring sessions played a crucial role in the development of my graduation project. They provided consistent guidance and critical reflection, helping me to sharpen both the research direction and the architectural design. These moments of dialogue pushed me to clarify my intentions and make stronger design decisions.

The feedback I received after the P2 presentation was particularly impactful. It challenged me to be more precise in addressing the urban scale, to refine the housing typologies, and to better integrate flexibility and climate adaptation into the spatial design. This feedback led to key adjustments that significantly improved the coherence and feasibility of the project.

Sessions with building engineering professionals were equally important, as they helped me ground the architectural concept in realistic construction methods and technical detailing. These conversations helped me align my ambitions with practical solutions.

Overall, the year has taught me how to navigate between ambition and realism, and how to use feedback not just as critique, but as a tool for growth. I’ve learned to approach design as a process of continuous questioning, testing, and refining, with clarity of intention and openness to change.

Continued learning

Having completed both my Bachelor’s and Master’s in Architecture at TU Delft, I’ve developed a solid academic and design foundation. This graduation project has significantly expanded my knowledge—particularly in socially embedded housing, climate resilience, and culturally specific spatial design. It was a privilege to visit Bangladesh and conduct in-depth research on both the people and the built environment. This experience has sparked a broader interest in exploring global housing challenges and the diverse ways communities adapt to social and environmental pressures. I look forward to continuing this learning process by engaging with different contexts, cultures, and approaches to housing in the future.

Relationship between Graduation Topic and Master Track

The graduation topic of global housing aligns closely with the core values of the Architecture track at TU Delft, which emphasizes socially responsible design, spatial justice, and sustainable urban development. TU Delft’s focus on research-by-design provided the tools to explore complex global issues, such as housing inequality, climate resilience, and cultural specificity, through an architectural lens. This was directly applicable to my project on the Sweepers communities in Bangladesh, where I designed high-density, flood-resilient housing clusters that respond to cultural practices, gendered space use, and community structure. The academic environment encouraged me to critically investigate real-world challenges and translate them into spatial solutions that are both contextually grounded and future-oriented. This framework allowed

me to approach global housing not as a one-size-fits-all problem, but as a layered, adaptive design challenge deeply connected to people, place, and policy.

Interplay Between Research and Design

The relationship between research and design in this project was iterative and dynamic. Early research into the social, cultural, and environmental context of the Sweepers communities shaped the initial design direction—particularly the need for flexible, flood-resilient housing that respects privacy, gender roles, and community structure. However, as the design developed, especially through the clustering of housing units, the characteristics of the site itself—its scale, flood zones, and urban context—began to significantly influence the design outcomes.

This led to a continuous back-and-forth between research and design. The spatial and environmental demands of the site required me to revisit research topics like traditional Bangladeshi housing forms, density management, and infrastructure integration. At the same time, testing these ideas through design helped clarify what was technically and socially viable, prompting more targeted investigations into climate resilience, cultural spatial use, and adaptability.

In this way, the site and cluster design acted as both a constraint and a tool—forcing a deeper understanding of context while refining the architectural response.

Academic and Societal Value

Academically, this project contributes to ongoing discourse around housing, informality, and urban resilience within architectural research. It engages with key themes such as spatial justice, climate adaptation, and cultural sensitivity, translating them into an architectural language grounded in real-world conditions. By working across multiple scales, from urban planning to domestic layout, the project demonstrates how research-by-design can bridge abstract theory and practical application, particularly in the context of global housing challenges.

Societally, the project addresses the urgent need for inclusive and resilient housing for marginalized communities, specifically the informal settlements in Bangladesh, who are often excluded from formal planning and policy frameworks despite their essential role in urban life. The proposal does not treat these communities as passive beneficiaries but takes their lived realities and aspirations seriously, aiming to preserve their right to remain in place while improving their living conditions.

The scope of the project lies in its potential to be adapted to similar contexts, where informal, vulnerable communities face environmental and social risks. While the specific design is rooted in Sylhet, the principles of flexibility, cultural respect, and in-situ development are transferable and scalable.

Ethically, the project is grounded in the belief that architecture should not displace, marginalize, or overlook. It aims to work with communities, not for them, acknowledging the complexity of their social networks, cultural practices, and economic realities. Although participation was limited in practice, the process was guided by respect for the voices and needs of the residents.

Transferability of Results

While the design is site-specific and rooted in the social and environmental context of the Sweepers community in Sylhet, many of the strategies developed in this project are transferable to other global housing contexts. The core concepts, such as flexible housing layouts, flood-resilient

design, and culturally sensitive spatial arrangements can be adapted to other urban areas facing similar challenges, including high density, informal settlements, and climate vulnerability.

The use of modular clusters, elevated living spaces, and multifunctional courtyards can inform housing models in regions where communities rely on shared outdoor space and where privacy, gendered space use, and religious practices influence spatial organization. Moreover, the project's emphasis on in-situ development and non-displacement can serve as a reference for inclusive urban regeneration projects elsewhere.

However, the transferability is not one-to-one. Cultural practices, governance structures, and land ownership patterns differ significantly between contexts. Therefore, the principles behind the project—such as adaptability, respect for local identity, and resilience are more transferable than the exact architectural form. The value lies in providing a flexible design framework that can be reinterpreted based on local needs, rather than a fixed solution.

Self Developed Reflection Questions

How can architects meaningfully engage marginalized communities in the design process when large-scale urban constraints limit direct participation?

In my project, I encountered this challenge firsthand. While my intention was to involve the Sweepers community in shaping the design, the scale and density of the site made full participatory processes difficult to realize. Instead, I relied on interviews and indirect feedback, which, while limited, still offered valuable insight into spatial needs, cultural practices, and daily routines. This experience taught me that even when direct co-creation isn't feasible, architects can still design with empathy and responsiveness by actively listening, observing, and embedding community values into spatial decisions. It also reinforced the importance of long-term engagement beyond the design phase, where community agency can grow over time through adaptable design and local partnerships.

To what extent can flexible and culturally specific housing design remain resilient and adaptable over time in rapidly urbanizing and climate-vulnerable contexts?

This question shaped many of my design decisions. The integration of flexible spatial layouts, elevated living areas, and culturally sensitive features aimed to address both immediate and long-term challenges. However, the real test of adaptability lies beyond the drawing board—how these designs are inhabited, modified, and maintained over time. In contexts like Sylhet, rapid urban change and environmental pressures may outpace the intended use of spaces. Still, by designing with modularity, shared courtyards, and multifunctional zones, I aimed to build in a degree of resilience that allows the architecture to evolve with its users. While no design can fully predict the future, one that is rooted in current social patterns and adaptable by nature has a better chance of remaining relevant.

Looking back

This has been an incredibly meaningful project to develop. Having the chance to work on a topic that immerses you in the cultural, social, and environmental complexities of a community so far from home is a rare and special experience.

The process was both rewarding and challenging. Trying to understand the nuanced spatial customs of informal settlement and in this case the sweepers community, working with unfamiliar materials and construction

methods suited to a flood-prone context, and designing housing that could be both high-density and culturally sensitive required constant learning, iteration, and reflection.

There were moments of uncertainty, especially in balancing architectural ambition with the realities of site constraints and limited participation. But these challenges pushed me to think more critically and design more responsibly.

As I approach the end of this academic journey, I feel proud of the work and the depth it has reached. This project has expanded my architectural perspective, particularly on housing in vulnerable, underserved contexts and I'll carry these insights with me as I take my next steps into the professional world.