REFLECTION

Fig. x: Gaboni Sweeper Colony, Dhaka, Bangladesh (Author, October 2023)

Beyond Academia: Architecture's Role in Addressing Urbanization and Migration Challenges

In an increasingly urbanized world, the global challenge is to ensure that cities provide safe and healthy living environments, thriving economies and social benefits for diverse groups for generations to come. Today, more than half the world's population lives in urban areas, with almost 90% concentrated in Asia and Africa. The trend towards urbanization is set to continue, with city dwellers expected to account for 68% of the world's population by 2050. When examining the drivers of urban growth, one of the main factors to consider is urban migration.

Today, in Bangladesh as in global migration trends, economic factors such as employment opportunities and social considerations such as marriage and education are the main drivers of migration. However, the influence of climate change and the resulting alterations will amplify the emergence of an ongoing trend, characterized by environmental migration. Meanwhile Bangladesh is already highly vulnerable to climate change, with 171 devastating natural disasters between 1970 and 2005 (WEDO, 2008), the consequences of climate change are unprecedented and will have socio-economic repercussions such as loss of livelihoods, effect on food security, damage to human settlements and infrastructure, access to job opportunities, education, resources as well as access to adequate and affordable housing. As a result, these impacts underline the urgent need to address the consequences of natural and man-made disasters on human settlements and access to housing.

Because everyone is different in terms of knowledge, skills, power relations, gender roles, health, wealth, race/ethnicity, age, physical abilities and disabilities, migration and its impacts have disproportionate consequences (GSC, 2008). Thus, the ability to anticipate, cope with, resist and recover from the impact of a natural hazard or an economic-induced migration depends on one's vulnerability. As such, women and girls are disproportionately affected by urbanization challenges due to their economic, social, and health vulnerabilities. Urbanization has exacerbated gender disparities in urban contexts, limiting women's and girls' access to resources, education, employment, and services. In Bangladesh, gender disparities and related problems persist in various aspects of life, from education and healthcare to violence against women and early marriage. These problems are deeply rooted in cultural practices and societal norms. Men have a stranglehold on land ownership, decision-making roles, production, leadership and trade, while women face constraints linked to restrictions on their mobility known as Purdah, cultural norms, legal constraints and the dominant influence of the Islamic faith.

As such, the graduation project tackles the pressing challenge of the strain on affordable housing in densely populated cities caused by rural-to-urban migration. It delves deeper, examining how these migrations often transport existing gender inequalities, which are then exacerbated by inadequate living conditions and access to resources, education, services and employment opportunities in these new environments. By exploring the positive effects of a gender-based approach to urban housing design on social integration, economic growth, and sustainability for all, the graduation project aligns with the thematic focus of the Global

Fig. x: Living Conditions of the Urban Poor, Dhaka, Bangladesh (Author, October 2023)

Housing Studio as well as with the Architecture master track of the MSc Architecture, Architecture, Urbanism and Building Sciences. Moreover, the project could contribute to the collective knowledge base on affordable housing design in mid-sized cities such as Sylhet in Bangladesh, in an attempt to enhance the regional redistribution of urban strategies towards mid-sized cities with high attractiveness potential in response to the ongoing urban growth.

Design through Research

The research involved various methods, including literature review, fieldwork, case study analysis, and feasibility studies, each significantly influencing design decisions. During the site visit in October 2023, surveys and discussions with residents allowed to identified problems and needs faced by the residents. When moving to the the city in search of better living conditions, migrants often find homes in substandard rental housing built by private owners using low-tech methods. This results in urban pockets of overcrowded settlements called 'colony' where residents face inadequate, unhygienic, unsafe living conditions, with little access to resources and services and difficulties in adaption. In addition, the site analysis provided a better understanding of cultural practices. In a country where religion plays a major role in lifestyle and daily practices, the impact of cultural analysis was necessary to address the socio-cultural appropriateness of the project. The research highlighted the cultural restrictions faced by women and girls. With this in mind, the design was developed to accommodate existing societal practices rather than attempting to change them, aiming to provide a more effective solution within the current context.

Additionally, the framework of this research was provided by an analysis of the literature, which offers a wealth of information on the health problems of women and adolescents, as well as on general living conditions in the informal settlements of the city of Sylhet. However, data on women who have migrated to Sylhet are still very incomplete. Moreover, articles dealing with the influence of women's empowerment on poverty reduction in Bangladesh and worldwide gave solid guidelines for the development of the design and the understanding of how housing development project can go beyond housing simply considering the living space, by considering the living environment as a whole to create opportunities for economic and social development for all. The housing units become then more than a living space and are linked to income-generating spaces, access to local

amenities, shared spaces and green areas.

The analysis of case studies and affordable housing programs in Bangladesh and around the world provided valuable insights into the project's feasibility, in terms of space requirements, building cost and managerial strategy. Additionally, climate and water management systems as well as structural opportunities, with more sustainable building materials, like compressed stabilized earth block were analyzed to provide an adequate and effective design.

The graduation year has been a long journey leading to the final design, involving numerous design decisions to address the project's challenges in a balanced way, ensuring both efficiency and resilience. Initially and naively, the simplest goal was to provide better living conditions for residents. However, as the design progressed, it became clear that feasibility required considering certain realities. The challenge then was to strike the right balance, ensuring that the spaces retained their quality while being affordable enough to make the project viable and buildable.

Methodology, Replicability and Global Challenges

Access to housing is a primary concern that architect, urbanist and policy makers are continually confronting with, but with almost half the world's population expected to be living in informal settlements by 2050, the demand for affordable housing is far from being met. Accordingly, great importance was attached during the design process to the replicability of the design in other locations without compromising the design's quality. The analysis of case study addressing similar challenges was an important methodological approach in the design process. The case studies all highlighted the importance of spatial hierarchy, from cluster spaces to community areas, and the differentiation between public and private access, car streets, and pedestrian pathways. They also underscored the need for socio-cultural adequacy and flexibility in dwelling units resulting in a wider range of typology. Thus, the transferability and feasibility of the graduation project rely on establishing a replicable system that encompasses three building types, facilitating a mix of typologies and incremental growth adaptable to varying

Fig. x: Rickshaw Drivers, Dhaka, Bangladesh (Author, October 2023)

needs and resources.

Each building type is designed to allow for flexibility through its load bearing structure and give the possibility of extension for incremental growth for low-income units. Each low-income units are provided with core housing elements such as bathrooms, kitchens, and flexible spaces that can be adapted as living areas, bedrooms, or income-generating spaces based on residents' needs. The project's flexibility aims to challenge current models of affordable housing development that use a concrete load-bearing structural grid, an open floor plan with interior masonry. As part of the project, two systems have been developed: one system implements the use of compressed stabilized earth blocks as a load-bearing element, which is a cheaper and more sustainable building material for low-rise affordable housing development. The implementation could be done in situ and involve the local population in the construction process. On the other hand, the second system relies on the use of linear grid of concrete columns for medium and high-rise buildings requiring imported materials, technological structure and specialized skills, but it is also the system most widely used to build higher buildings in Bangladesh. Thus, the combination of the two building systems enables a more feasible yet innovative approach to affordable housing design that could easily be transferred to other projects in Bangladesh and around the world. The use of more environmentally-friendly building materials, such as compressed stabilized earth blocks, offers opportunities to reduce the cost of building materials, making housing development more affordable and sustainable. This earth construction technique has already been implemented in Africa, Asia and Latin America.

Moreover, like many informal settlements in Asia, Latin America, and Africa, these areas are often illegally developed on hilly parts of cities because such lands are considered non-buildable by the government. Consequently, affordable housing solutions for these informal settlements must consider topography as a key criterion in the design development. The graduation project aims use the hilly location of the project to its advantages, emphasizing the design potential of working with the topography to create better living conditions and incorporate a water management system that benefits the entire community.

Fig. x: Sweepers Colony, Dhaka, Bangladesh (Author, October 2023)

Finally, to make the project feasible in view of the reality of the housing market in Bangladesh, the project relies on a management strategy based on cross-substitution with the implementation of various stakeholders. Like the majority of the land market in Bangladesh, the project site is privately owned. The landowner has provided the urban migrants with low-tech housing structures from which to generate income. To ensure the landowner has a financial incentive to improve housing conditions for tenants, half of the site will be sold to a private real estate developer who will create a development for low, middle, and high-income individuals, while the other half will be developed to provide affordable housing for current residents and incoming migrants. This approach makes the project viable, and easily replicable, benefiting all parties involved.

The role of the Architect

This topic holds significant relevance in today's context, given the escalating crises, ranging from economic and climatic to political and social. Although strategically positioned within a specific context, the work adopts a global perspective, aspiring to understand the vulnerabilities and capacities of individuals to cope with migration and adapt to new environments. While focusing on the development of housing for the urban poor, I seek to examine the role of the architect in such contexts. From its mediator side to its engineer skills, the architect is closely involved in bringing together diverse components to provide and ensure the most sustainable living environment possible, without discrimination. Going beyond the conventional boundaries of housing design, this graduation project seeks to interrogate gender related issues and aims to integrate economic, social and environmental opportunities. The aim is to empower local communities in a holistic way, promoting benefits that extend beyond the immediate project and positively impact the community. In addition,

Fig.x: Government-Provided Housing building in contrast with the settlement, Dhaka, Bangladesh (Author, October 2023)

the project opens the discourse on the question of the positionality particularly as regards a European student designing a project in a foreign context with limited time and experience on site. This aspect invites a critical examination of the cultural, social and ethical considerations inherent in the design process, exploring the implications and responsibilities associated with designing in a cultural context distinct from one's own.