

# 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](mailto: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                                  | Anna Lillian Halleran   |                           |
| Student number                        | 5926688   |                           |
| Studio                                |   |                           |
| Name / Theme                          | Global Housing - Architecture of Transition in the Bangladesh Delta   |                           |
| Main mentor                           | Rohan Varma   | Architectural Design      |
| Second mentor                         | Rocío Conesa Sánchez  | Technical Building Design |
| Research mentor                       | Frederique van Andel  | Research                  |
| Delegate                              | Marjolein van Esch  |                           |
| Argumentation of choice of the studio | To further expand my knowledge of global informal and low-income housing settlements and how architects can play an important role in supporting and improve the quality of life of these communities through thoughtful design interventions.  |                           |
| Graduation project                    |   |                           |
| Title of the graduation project       | Building a Patchwork of Resilience: A Situated Participatory Housing Design Approach for Sylhet's Shonatola Village Community   |                           |
| Goal                                  |   |                           |
| Location:                             | Shonatola Village, Sylhet, Bangladesh   |                           |
| The posed problem,                    | The quality of life and dwelling conditions of the Shonatola village community, living in a peri-urban settlement outside of Sylhet city, is under significant threat. The Shonatola villagers experience significant housing challenges, infrastructural barriers and economic insecurity due to climate-induced environmental distress and the impacts of Sylhet city's sprawling urban development on their way of life. |                           |
| research questions and                | Research Question:<br>How can a <i>situated participatory housing design approach</i> be applied to improve dwelling conditions of the <i>Shonatola village</i> community?  |                           |

|  |   |
|--|---|
|  | <p>Sub-Questions:</p> <ol style="list-style-type: none"> <li>1. How can <i>architects act as facilitators</i> of design to improve <i>capacity-building</i> of the Shonatola community?</li> <li>2. How can we use the <i>timing and extent of community collaboration</i> to inform a situated method of participatory housing design?</li> <li>3. How can architects design dwellings to support future inhabitant's <i>individuality and spatial appropriation</i> to instil individual and collective ownership of their space(s)?</li> <li>4. How can we learn from traditional <i>local ways of community organisation</i> to inform an inclusive method of collaborative design?</li> </ol>  |
| design assignment in which these result. | <p>The primary product of this graduation studio project is a step-by-step housing design guide to be used by the community to offer housing design solutions for different site conditions that occur throughout the Shonatola village. Creating a <i>Toolbox for Appropriation</i> will provide step-by-step housing design options that are designed to be adapted and changed over time by future self-help builders and the people living in the Shonatola community. This research will exemplify that collaboration in design does not have to happen at one particular moment in the design process in order for it to be a successful participatory design experience. This will be illustrated in the forthcoming analysis of successful low-income housing projects that each take part in community participation in different ways and during different moments throughout the design process.</p> <p>Additionally, this research will develop a situated framework for socio-culturally appropriate participatory design. This alternative approach will be grounded in its location and acknowledge and address the common pitfalls of collaborative design. This inclusive framework will focus on how the Shonatola community can be supported to improve future housing developments. The framework will provide insights on how a development project like this should be phased to ensure that the village gradually develops with the community, over time. As such, this framework will learn from local ways of community organisation and building, leading to a proposal that supports and better prepares the community for future environmentally distressing events and the expansion of the nearby Sylhet city on their village.</p> |

## Process

### Method description

This research study will utilise qualitative research methods to establish a systematic framework for socio-culturally appropriate participatory housing design to support future developments for the Shonatola community. During the fieldwork site visit to Dhaka and Sylhet, several methods of research analysis occurred. These include semi-structured interviews with members of the Shonatola community and people who live in the wider context of Sylhet, as well as the development of a personal fieldwork diary of written notes from the trip, observational findings, sketches and collaboration with Shahjalal University of Science and Technology students and professors. Collaging community narratives from the interviews and workshops will serve as an important output for this analysis to gain an overview of what the community feels should be prioritized to improve their quality of life. To gain greater insight into the existing housing conditions in the community, an investigation of their standard of housing and typical typologies of construction will be explored.

Furthermore, the qualitative methods of analysis to be implemented include an in-depth case study analysis examining housing projects around the world that engage differently with participatory community-driven development, including:

1. Urbanización Caja de Agua in Lima by Junta Nacional de la Vivienda
2. New Gourn Village in Luxor by Hassan Fathy
3. Mexicali housing project in Mexico by Christopher Alexander

Additional examples of in-situ participatory incremental housing case studies to be explored include:

1. Incremental Housing Strategy in Pune, India by Urbanouveau and SPARC
2. Jhenaidah Community Upgrading in Jhenaidah, Bangladesh by Co.Creation.Architects
3. Baan Mankong "Secure Housing" Initiative in Bangkok, Thailand by Community Organization Development Institute (CODI)

Lastly, studying secondary sources including texts on architectural theory, historical texts and news articles is also critical to gain a greater holistic understanding of this research topic. Each of these methods will be utilised to inform the development of the final design proposal.

## Literature and general practical references

### Literature

When one begins a research project, it is crucial to review existing literature so that the research that is produced may fill existing gaps that remain, building upon what has previously been done. This analysis is no different. A brief overview of the most significant literature to this project is included as an appendix to this document (on page 9), in addition to a reference list of key sources. This literature review examines topics including participatory design, the importance of regionality in architecture, systemic problems that exist in the production of housing, Indigenous research, colonialism and strategies for creating quality housing for the poor. Each text discussed has proven to become pivotal in forming a strong foundation for the development of this graduation project.

## **Theory**

To expand upon my knowledge and to place my own research within the context of that which currently exists, it was important to gather a greater understanding of architects and theorists who have already examined similar themes to those which I hope to build upon in my analysis. This research is built upon the previous work of numerous key theorists, texts, concepts and built projects that I have used as a foundation. My research will explore the intersection of Kenneth Frampton's concept of critical regionalism, Markus Miessen's post-consensus participation and Christopher Alexander's system of housing production. These theoretical perspectives will ground this research and help in leading to a thoughtful design and theoretical framework, which answers the above research question and sub-questions.

While researching topics surrounding participatory and collaborative community-centred design, I noticed that words which are frequently used to describe the role of the architect include - someone who "empowers" and "enables" communities to create positive change. But what does it mean to empower or enable a community? And does the concept of empowerment or enablement have to begin with a power imbalance which favours the outsider? As Donna Haraway has highlighted so eloquently in her text *Staying with the Trouble*, words matter (2016). Thus, it is important to think critically about how one describes their role as an architect in a design project. In an effort to be thoughtful about how this project will define its role within the community, I have looked to the practice of capacity-building. The United Nations defines capacity-building as "the process of developing and strengthening the skills, instincts, abilities, processes and resources that organisations and communities need to survive, adapt, and thrive in a fast-changing world" (United Nations, n.d.). Capacity-building originates from within a community and is sustained over time. It is not a list of conditions or practices to improve upon, that are enforced by an outsider and imposed upon a community. By exploring this research through a lens of capacity-building, the architect can then serve as a facilitator of community development, which is a key distinction and area of investigation that this research revolves around.

## **Precedent Analysis**

In-depth case study analysis examining three low-income social housing projects that engage differently with the timing of participatory community collaborative design will be instrumental in informing the participatory positioning of this project. The chosen housing projects to analyze include:

1. Urbanización Caja de Agua in Lima, Peru
2. New Gourn Village in Luxor, Egypt
3. Mexicali housing project in Mexicali, Mexico
4. Incremental Housing Strategy in Pune, India
5. Jhenaidah Community Upgrading in Jhenaidah, Bangladesh
6. Baan Mankong "Secure Housing" Initiative in Bangkok, Thailand

## 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)?

My graduation project is deeply connected to the Global Housing studio as it focuses on exploring an architectural design solution to improve the quality of life and living conditions of the Shonatola village community who live in a peri-urban settlement outside of Sylhet city. As the central focus of the studio is the architecture of transition, this project investigates how villagers live in a site which frequently experiences extreme flooding resulting in temporary migration. Additionally, this project will also consider how villagers will navigate the looming threat of Sylhet's urban sprawl on their way of life in the future. As a strategy to explore these themes, my graduation project works towards the development of an alternative approach to housing design as a method to establish a socially and culturally appropriate proposal to improve the housing conditions for the residents of the Shonatola village.

This graduation project is also very connected to the Architecture track and the TU Delft Master of Science Architecture, Urbanism and Building Sciences program itself. This is evident as this project will explore how the intersection of architectural design, urban planning and technical building engineering can lead to design solutions which address architecture design challenges using innovative, sustainable and creative methods.

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

The relevance of this graduation project to the larger social, professional and scientific community is significant. My resulting design proposal in the forthcoming P5 submission will provide an architectural design solution that is socially and culturally appropriate proposing a *Toolbox for Appropriation* to provide step-by-step housing design options designed to be adapted and changed over time by future self-help builders and the Shonatola community. This situated design kit will be the first of its kind, providing valuable insights on housing solutions for a variety of dwelling conditions that occur in the Shonatola village. Furthermore, as this project will be guided by the development of a situated framework for socio-culturally appropriate participatory design, it will explore and challenge previous notions regarding the temporality of community collaboration in participatory design. This framework for participatory design will be customized to address both the desires and challenges that the Shonatola community face. The subsequent *Toolbox for Appropriation* and situated framework for participation will be best suited for the development of the Shonatola village, as it learns from their local ways of building and addresses their specific needs. However, it is anticipated that this framework can be modified and applied to other development projects that work with communities who face similar challenges as the Shonatola community globally. As an effect, this will expand the significance of the current research and architectural design proposal significantly.

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## Appendix

### Literature Review

***Kenneth Frampton: Prospects for a Critical Regionalism (1983)*** - In 1983, British architect, historian and critic Kenneth Frampton coined the term critical regionalism. This concept was in response to the effects of globalisation on the architectural field that he felt led to a sense of placelessness in modernism and excessive ornamentation in postmodernism (Cutieru, 2021). Frampton explores how architecture must return to its sense of place and context as he encourages the development of a new architecture that embraces global influences and technological advancements while remaining deeply grounded in its context (Frampton, 1983).

***Amos Rapoport: House Form and Culture (1969)*** - Amos Rapoport is a Polish psychologist, professor and architect and he is one of the founders of Environment-Behavior Studies. In his seminal text *House Form and Culture*, Rapoport explores the deep connections between the culture of a place and its surrounding built environment. This is examined through an analysis of housing developments globally which demonstrate how different cultures have significant regional, environmental, economic and social impacts on how people live and build.

***Markus Miessen: The Nightmare of Participation (2010)*** - German architect and writer, Markus Miessen in his text *The Nightmare of Participation*, explores the topic of participatory design. He questions, what is democracy? Furthermore, should

everyone always have an equal say in important decision making? Where is this urgency of inclusion stemming from, and is it warranted? These questions are important to consider when taking part in any form of collaborative design. Miessen is quite resistant to the romanticised notions of inclusion that participatory design promises to create authentic people-centric architecture. Instead, he offers the conclusion that consensus cannot be used as a mode to achieve innovation and that every form of participatory design will always lead to conflict. In order to create change, an agonistic democratic model that features an 'outsider' to incite and provoke new ways of thinking where conflict is inevitable, is necessary. This leads to Miessen's proposal of a new 'post-consensus model' for participatory design.

***Christopher Alexander: The Timeless Way of Building (1979)*** - *The Timeless Way of Building* is the first introductory volume of Christopher Alexander's exploration of an alternative movement of architecture and urbanism. In this text, Alexander explores the process of what he describes as a "timeless way of building" as a natural occurrence that brings order to spaces and the people that inhabit them. It is a thoughtful way of building and shaping space that is deeply grounded in its surroundings, and establishes an intangible spatial quality and atmosphere that cannot be simply defined. Throughout this idealist analysis of space, Alexander examines the process of creating them by investigating the quality of space, spatial and organisational urban patterns that exist and the ways in which these spaces are inhabited by people.

***Christopher Alexander: A Pattern Language (1977)*** - *A Pattern Language* is the second volume and most widely referenced text in Christopher Alexander's series of his exploration toward a new approach to architecture and urban design. The text explores the significance of recognizing recurring design problems that exist in our built environment. These design challenges are always slightly different; depending on their context and scale, in order to reach a solution, a greater holistic understanding of these patterns must be acknowledged. Such patterns occur at large urban city scales, the building scale and at the construction detail level. Alexander examines each scale, offering insights on how one can interpret and form connections to reach thoughtful analytical conclusions.

***Christopher Alexander: The Production of Houses (1985)*** - In the fourth volume of Christopher Alexander's study towards a new attitude of design and planning, *The Production of Houses*, proposes that there exists two significant flaws within the system of housing production. Firstly, the system does not acknowledge that every individual is unique and must be able to express themselves in their modes of dwelling to maintain their human dignity. Secondly, the system does not recognize that every person fits within a distinct society where human relationships are the bonds that hold it together. In order to mend the system of housing production there must be fundamental changes that address these flaws. Alexander illustrates how the system of housing production can be adapted to address the above flaws through his Mexicali housing project in Mexico; it was designed and built by him along with the future families that would eventually inhabit the built homes.

***Richard Sennett: Building and Dwelling: Ethics for the City (2018)*** - In this text, Sennett proposes a new way of Opening the City; this alternative approach establishes a healthy city as an open system, uniting the cité and the ville. Sennett defines the ville as the established built environment, and the cité as the character of life in a neighbourhood and the unique ways people inhabit it. "So what would you do?" This was the question that Jane Jacobs posed to Richard Sennett, while he was in the midst of developing his ideas surrounding the Open City. Sennett admired Jacobs views on the need to seek an alternative urbanism that incorporates a city's lived complexities within its built environment. Sennett's Open City balances working within a system of top-down organisational development planning while also incorporating bottom-up local input to ensure that the voices of future inhabitants are heard.

***Linda Tuhiwai Smith: Decolonizing Methodologies: Research and Indigenous Peoples (2021)*** - Throughout Linda Tuhiwai Smith's text *Decolonizing Methodologies: Research and Indigenous Peoples* she examines and critiques the traditional Western concept of research and calls for the decolonization of methodologies and a new agenda of Indigenous research. Tuhiwai Smith divides her analysis in two parts throughout the text. Firstly, she examines the history of Western research and critiques and highlights the colonial assumptions from which it is based. Then, the second section of her text explores and proposes a new approach for Indigenous research.

***Witold Rybczynski et al.: How the Other Half Builds (1984)*** - *How the Other Half Builds* is an in-depth analysis on informal urban settlement and planning by Witold Rybczynski and Vikram Bhatt and their team of researchers as part of McGill University's minimum cost housing group. They completed site surveys on four informal housing settlements in Indore, India in June 1984. The results concluded three volumes of analysis exploring spaces, plots and the housing self-selection process. Detailed drawings depicting the efficient and dynamic daily uses of space in these settlements are provided, demonstrating their sophistication of evolving spatial functions. The authors argue that informal urban settlements must not be underestimated; they are architecturally valuable design spaces that provide valuable insights on the fundamentals of housing.

***Bernard Rudofsky: Architecture without Architects (1964)*** - Throughout the text *Architecture without Architects*, architect, engineer and critic, Dr. Bernard Rudofsky examines communal architecture. He defines communal architecture as architecture that is not professionally drafted or 3D modelled in architectural offices, but instead, it is the spontaneous exercise of building by a community who acts through collective knowledge and shared cultural experience. Rudofsky highlights the importance of not dismissing this form of architecture as "primitive" ; rather, he feels it is important to recognize it as an art form that is a product of human intelligence founded in experiential knowledge.

***Hassan Fathy: Architecture for the Poor (1969)*** - Egyptian architect Hassan Fathy explores a new approach to rural mass housing in Egypt throughout his text *Architecture for the Poor*. Fathy feels that high quality, socially and culturally

appropriate housing for the poor can be achieved through the use of native materials and local craftsmanship. It is through his experimental large-scale village housing project in New Gournah, that he tests these theories; he discusses his findings throughout this text. Fathy reflects on the architectural and bureaucratic lessons learned during this project and suggests possible solutions for future projects.

***Nabeel Hamdi: Housing without Houses: Participation, Flexibility, Enablement (1995)*** - The text *Housing without Houses: Participation, Flexibility, Enablement* by Nabeel Hamdi presents methods for housing production. Hamdi argues that efficient construction can only be achieved using methods which promote local action based upon incremental design tactics and improvisation. Throughout the chapter Looking, Listening, and Measuring, Hamdi discusses the importance of involving locals as he feels designing homes should be an exercise that seeks to listen and learn. Furthermore, Hamdi identifies the significance of knowing the actors involved in the design process and understanding their interests and priorities, so that future cooperation and conflict resolution can be efficiently achieved.