

## BEYOND SOLIDITY: A PARTICIPATORY APPROACH FOR FORMAL HOUSING DESIGN

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**Abstract:** The research is grounded in the idea of conceptualizing formal housing beyond solidity is to make a shift in approach: from traditional ‘provision’, a static product, to ‘participation’, a dynamic process, where residents actively engage and contribute. The concept captures this transformation toward a shared, collaborative agenda from a human-centric view. The study aims to follow a multi-layered methodological journey, encompassing various forms of collaboration and design development phases, including informal storytelling, co-creative discussions, and shared issue exploration, which progressed through different stages of idea generation, to develop co-created, context-specific design findings that align with government-mandated housing standards. Notably, a significant outcome of this process was overcoming their collective limitations through the emergence of the co-conceptualized informal communal zone. Expanding on these insights, the article positions design as a collaborative act that aligns with the evolving ethos of contemporary architectural practice.

**Keywords:** *Participatory approach, Co-creation, Social sustainability, Formal housing, Community-led housing.*

### 1. Introduction

Housing has become a profound issue of concern in the twentieth century, caused by the rapid expansion of urban populations worldwide. As the urban boundary spreads, the demand for affordable and adequate housing continues to increase, especially in the Global South, as formal housing programs have never been enough to keep pace with population growth and needs (UN-Habitat, 2020). In response, the government’s large-scale public housing schemes mostly resulted in a rigid, top-down planning model, treating housing as a product of physical infrastructure rather than as a process embedded in lived experience (Turner, 1976).

In the housing context, participatory planning has started to flourish in community-driven informal settlement developments (UN-Habitat, 2016), such as in Thailand’s Baan Mankong Program (Boonyabanha, 2018), or the Slum Networking Project in India (Sheela Patel, 2002), yet such inclusive practices remain limited in formal public housing sectors (Frediani, 2015). In Bangladesh, the study context of this article, where various community-led planning approaches are being adopted for informal settlements (Pala, 2023), but many state-led formal housing projects have failed to accommodate the different needs of mixed-income groups, leading to underutilized or socially sensitive environments (Md. Mahbubur Rahman, 2016), as the planning prioritized efficiency, standardization, and administrative control over community needs, it resulted in technically functional but socially and emotionally disconnected outcomes (Rahman M. M., 2016 ). Therefore, integrating participation as an approach within formal public housing developments is crucial to improve both spatial quality and social sustainability (Rahman M. M., 2016 ). Hence, this study aims to follow a participatory approach by focusing on a state-provided formal housing compound in Khalishpur, Khulna, Bangladesh, as the empirical context.

By foregrounding stories and shared aspirations, the article aims to reshape future policies and design practices that embrace housing as care, design as dialogue, and development as a collaborative act. Further, the author argues, this participatory turn is not only timely but necessary, particularly for formal housing sectors that face growing pressure to be inclusive, sustainable, and contextually relevant. This article does not recommend any ideal type of universal framework of participation in formal housing design. It only presupposes that an inclusive and democratic collaboration with users can create housing greater than its necessity, not only to serve the people, but also to make spaces truly for the community.

### 2. Literature Review

The term "solidity" relates to the materialistic or physical aspect of housing development, an expression of provision that considers housing as a final product, the material and spatial construct that embodies the human necessity for shelter, which can be expressed by the metaphorical expression of ‘brick and mortar.’ (Gönenç Sorguç, 2025). From this view, housing development is something where policies or authorities emphasise what people ought to have, rather than what people could have, aligning with the metaphor of *brick and mortar* as a symbol of completion (Turner, 1976). Conceptualising beyond physicality involves a shift in approach from provision to participation. The participatory model represents the

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DOI: <https://doi.org/10.31705/FARU.2025.9>

convergence of diverse actors, such as developers, designers, and community members, toward a shared, collaborative agenda (Manzini, 2015). It is to create spaces for the people, with the people, rather than producing housing in terms of materialistic quality, without considering the relationships between the object-user relation (Lefebvre, 1991). Philosophically, this aligns with F.C. Turner's phenomenology of considering housing not merely as a product (noun), but as a 'verb' (the dynamic process) (Turner, 1976). Treating housing as a verbal entity ensures a human-centric view, focusing on the activity related to it and its people, rather than only as an outer shell (the metaphor of brick and mortar). To go beyond physicality, decision-making power, architecturally to be more specific, as in design development phases, the engagement and priority of the user is a must.

The concept of participation relates to a collaborative process of decision-making where users are engaged in shaping the environment in which they live (Arnstein, 1969). In the housing context, the collaboration gets more critical, as it can directly impact the daily lived experiences and socio-spatial activities of residents. Particularly in formal housing schemes, where a top-down approach is mostly adopted, the participatory approach can ensure meaningful engagement of users, resulting in more contextually relevant, socially embedded, and resilient outcomes (Rahman M. M., 2016). Literature regarding contemporary participatory design challenges highlights the significance of contextual methodological innovation, which may deepen engagement and democratize the design process (Manzini, 2015). Methods including co-creation, design charrettes, community workshops, and informal storytelling may not only enrich the spatial needs of the people but also foster social sustainability and shared ownership of the space.

Formal housing is to be built and rented according to government regulations and legal standards, following building codes, zoning laws, and urban planning guidelines, which often include services such as electricity, water, and sanitation (Payne, 2002). Factors such as physical, social, economic, and environmental, which influence both the process and outcome of housing development, serve as existing criteria upon which the quality, demand, socio-cultural, and housing design change (UN-Habitat, 2011). These factors are the consideration of accessibility, living standards, and affordability, on which the design depends and changes accordingly (Tipple, 2000). Especially in the context of state-provided formal housing, affordability and living standards are governed by governmental institutional policies and allocation frameworks, with minimum standards for achieving physical, economic, and environmental quality (GOB, 2018). As the article progresses, a review of the quality standards requirements in Bangladesh is added, which is essential for supporting the importance of the methodology in this study. Later on, the author will explore the participatory approach for housing development, which promotes community engagement, user-centered design, and long-term social sustainability (Hamdi, 2010).

## 2.1. QUALITY STANDARDS AND THRESHOLD

This section contains the minimum quality requirements of housing aimed at ensuring an adequate standard of living. The government's housing living standard, to determine the architectural features, design of physical components, is regulated by the authority of the Ministry of Housing and Public Works. Originally established in 1972, it has undergone various institutional reforms over time, which now include many different individual departments to maintain different types of state construction activities (MHPW, 2025). The physical quality standards of government-provided housing can be described in two different layers. First, the standard allotment area, according to the pay grade for a government employee, and second, the minimum facilities and service threshold, to ensure livability.

Previously, as mentioned in the standard of 1992, the pay scale was then classified according to the category of offers (class I – class IV), and allotted floor area according to the officer's category (Standards, 1992). Later on, the national pay scale got reclassified into a 21-grade hierarchy, and different areas got redefined by the Department of Architecture, under the Ministry of Housing and Public Works (Classification, 2006), as presented in Table 1, discussing seven different maximum allotment areas depending on the grade, and their classification of 'A to Superior type', starting from 500 sq ft up to 1800 sq ft.

Table 1: Classification of accommodation  
(Source: Department of Architecture, Bangladesh)

Index	National pay scale	Allotted residential area		Classification according to area
		Sq ft	Sq m	
1	1 <sup>st</sup> & 2 <sup>nd</sup>	1800	167.23	Superior
2	3 <sup>rd</sup> & 4 <sup>th</sup>	1500	139.35	F
3	5 <sup>th</sup> – 7 <sup>th</sup>	1200	111.48	E
4	8 <sup>th</sup> – 11 <sup>th</sup>	1000	92.90	D
5	12 <sup>th</sup> – 14 <sup>th</sup>	800	74.32	C
6	15 <sup>th</sup> – 19 <sup>th</sup>	600	55.74	B
7	20 <sup>th</sup> & 21 <sup>st</sup>	500	46.45	A

This portion contains minimum reference standards and their threshold, including a broad range of all the general, educational, commercial, socio-cultural, services and utilities, healthcare facilities, as outlined in the Bangladesh Gazette of 2021. The Gazette illustrates the baseline requirements for all types of residential development in the state. Considering the

site context and its people can make a difference in the minimum required facilities, but must ensure the benchmark while prioritizing human-centered needs. Table 2 contains facilities and their threshold to be applied in the design, according to the government standards (Gazette, 2021).

Table 2: Threshold and Minimum Reference Standard of Facilities  
(Source: Bangladesh Gazette)

Facilities	Threshold	Minimum Reference Standard
Community open space	3 families	1m <sup>2</sup> /person
Management office	10 families	10m <sup>2</sup> room
Multi-purpose	20 families	2m <sup>2</sup> /family
Indoor games room	30 families	1m <sup>2</sup> /family
Prayer hall1	40 families	0.75m <sup>2</sup> /family
Daycare center	100-300 families	6 children
Small store/s	50 families	500
Medicine store/dispensary	200 families	4 stores/ 200 families
Internal roads and walkways	Any	(15-20) % of the site area
Amenities (Garbage disposal, water pump, local electrical substation/generator, etc.)	Any	5 % of the site area
Public transport stoppage	As per the planning guideline	At least 1 bus bay with passenger shed
Parking (depending on the gross area for the residential building)	140 m <sup>2</sup> - 200 m <sup>2</sup>	2 car parking/3 units
	90 m <sup>2</sup> to 140 m <sup>2</sup>	1 car parking/2 units
	60 m <sup>2</sup> to 90 m <sup>2</sup>	1 car parking/4 units
	up to 60 m <sup>2</sup>	1 car parking/8 units
	up to 90 m <sup>2</sup> (in addition to required car parking)	1 motorcycle parking/5 units

The article follows the following method while adhering to fundamental housing standards, introducing context-sensitive adjustments that prioritize user participation in the design and decision-making process.

### 3. Methodology

The participatory approach emphasizes user-led design development through the active engagement of end-users, such, residents, community members, and local stakeholders. A critical bottom-up procedure to integrate community voices into design decisions and spatial planning. The whole decision-making process is governed collectively, ensuring the real-life perception and needs of the community are at the focus. Primarily, the quality benchmark and other design standards are filtered and reshaped through continuous community interaction. Examining the user-specific requirements and real-life experiences, through community engagement tools such as focus group discussions, key-person interviews, collaborative workshops, and observational methods of gathering insights to develop an iterative cycle of qualitative data collection and communal validation to co-create design considerations, as illustrated in Figure 1. Finalizing the design decision with the community people, the framework transforms beneficiaries into collaborators, promoting a sense of ownership, dignity, and relevance in the built environment, which aligns with participatory design theories for inclusive and responsive urban development (Hamdi, 2010). Figure 1 illustrates the interactive process of qualitative data filtration, interpretation, and synthesis to form the outcome from the initial inputs, guided by the community and collaboratively developed with the community.

This research presents major modes of participation and key stages of data collection and analysis throughout the entire co-creation journey. Primarily, beginning with getting the community insights through active and passive observations, helped to understand the social behaviour, and the varying levels of different user interactions. These observations outlined multiple participatory methods, including key-person interviews, group discussions, informal conversations, and semi-formal design charrettes and such, suitable for a variety of users, ranging from socially extroverted and engaged individuals to those who are more reserved and conservative in manner. These dynamic decisions allowed the study to capture a broad spectrum of user perspectives to define communal needs, spatial preferences, and underlying complexities. Among the diverse nature of the community involvement, the following collaborative methods broadly represent the stages of co-creative design and planning, discussed in the subsequent sections of the article.

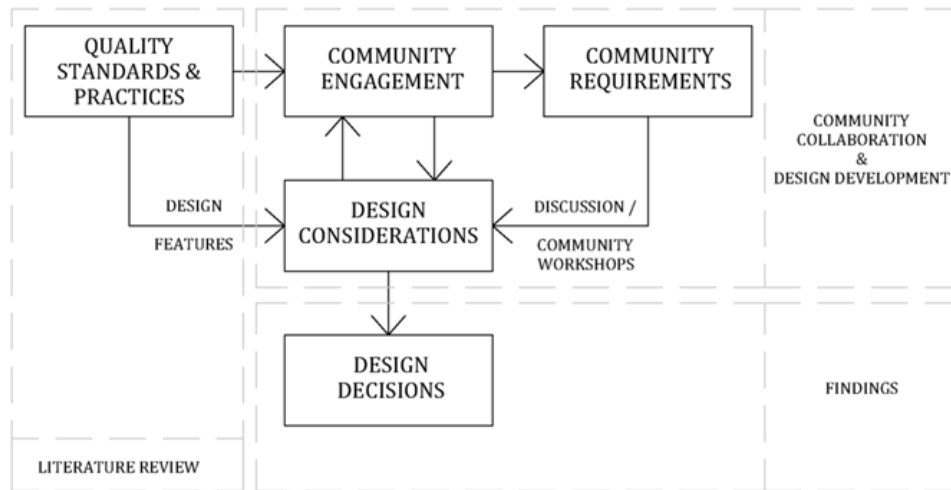


Figure 1: Qualitative data filtration and finalization (Source: Author)

- Personal storytelling: People shared their lived experiences, family stories, quick thoughts, and personal needs through informal and handwritten notes. Outlining spatial perception from the user-end view provides a foundation for understanding subjective needs, emotional connection, and aspirations.
- Co-creative discussions: Interactive sessions using hand-crafted models facilitated open discussion and idea generation. This process brought the abstract thoughts into a visual manner, particularly in architectural interpretation, to co-evaluate and refine design decisions more effectively.
- Shared issues exploration: Group discussions, informal conversations, and key-person interviews reveal deeper, often overlooked complexities in formal housing, regarding economic segregation, socio-formal manners, and such. While being in a mixed-income neighborhood, these inner complexities become more intense and sensitive to live with.



Figure 2: Community involvement (Source: Author)

#### 4. Analysis and Discussion

The entire analysis is discussed in multiple layers. initializing from the identification of the study context and then introducing various forms of community engagement to gather localized knowledge and user-driven insights. Finally, the design development phases discuss the modifications of spatial strategies and architectural decisions, from the insights of earlier layers. All over, the approach is aimed at implementing a coherent framework for understanding and implementing design, beyond the physical manner.

#### 4.1. STUDY CONTEXT

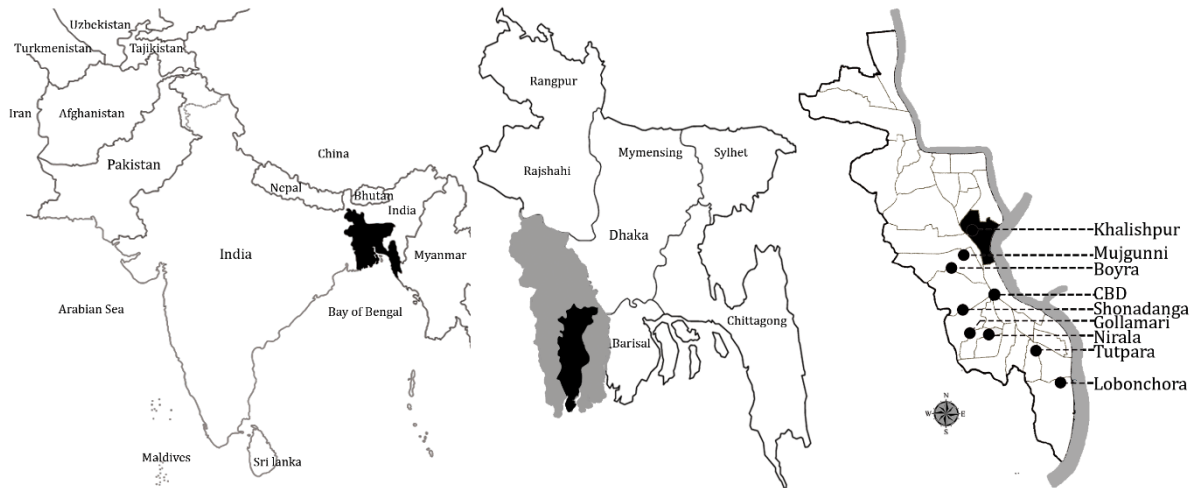


Figure 3: Geographical context of the study area  
 (Source: Basemap from OpenStreetMap contributors, 2024. Modified and annotated by the author.)

The study area, in this article, located in a developing zone with one of the fastest-growing populations, Khulna, the third largest city of Bangladesh, is identified as a rapidly developing urban region to a great extent, in terms of residential developments (Esraz-Ul-Zannat, 2016). Figure 3 illustrates the geographical location of Bangladesh (left), the spatial context of the city of Khulna, and the specific study area, Khalishpur, along with its surrounding residential zones throughout the city.

In Khulna, selecting a formal housing compound with an active community was essential for applying a community-led housing approach. Banker housing compounds were suitable for this, especially as the Bank Officers Housing Society (BOHS) in Bangladesh has been recognized for community-driven housing since 2013 (DailyObserver, 2024). The specific site belongs to a nationalized bank as a government housing compound allocated for officers, directing the article to explore formal housing design within a professional community. The existing condition consists of 4 four-storied residential buildings, two of which follow differing layout patterns, and one of them is now completely abandoned by the authority, due to severe structural deterioration (as shown in Figure 4). Having been constructed before the 1980s, the contemporary eligible employees for housing far exceed the existing capacity, and the demand is now over five times the available 48 living units. The huge gap in demand and supply, decayed infrastructure, and having a socio-economically diverse community with a shared institutional affiliation, lead residents to participate collectively in planning the future redevelopment of the compound, making the site an ideal testing ground for a participatory design approach.

Figure 4 illustrates the site layout with different deteriorated residential and one abundant block. A temporary training institute is currently on-site, which, as discussed with the authority, will be relocated as part of the housing compound's redevelopment.

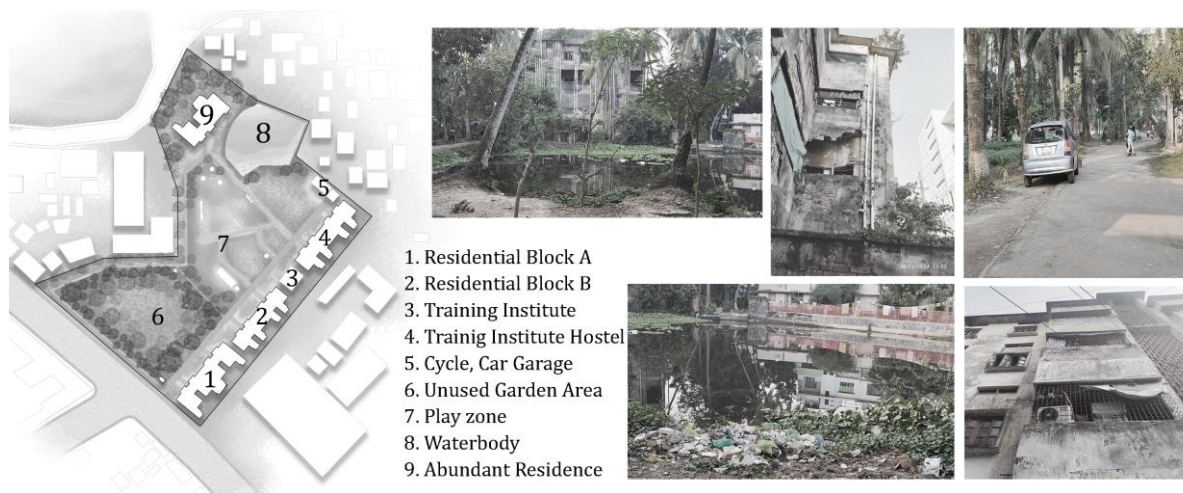


Figure 4: Existing site condition and images.  
 (Source: Author)

### 4.2. COMMUNITY COLLABORATION

The following portion discusses collaborative development of design decisions, which is multilayered in three major phases. These phases include all the co-creating processes outlined above, with a focus on the hands-on community involvement.

- Phase I- Invitation and idea discussion: Residents are invited via brochures and introduced to "Our Home, We Build" (locally introduced as 'Amader Nibash, Amader Nirman' by the author), a community-led initiative. Thereafter, the user's storytelling, primary space perception, and initial house-zoning are co-produced with paper, and work out on the informal mood-board, which became the community canvas, over the journey.
- Phase II- Co-conceptualization & model making: It contains visualization of the spaces, developing sketches, and mass models for the home unit. It also includes co-conceptualizing solutions for underlying social complexities.
- Phase III- Masterplan & home unit finalizing: Workshop and group discussion with cardboard models, going through trial & error.

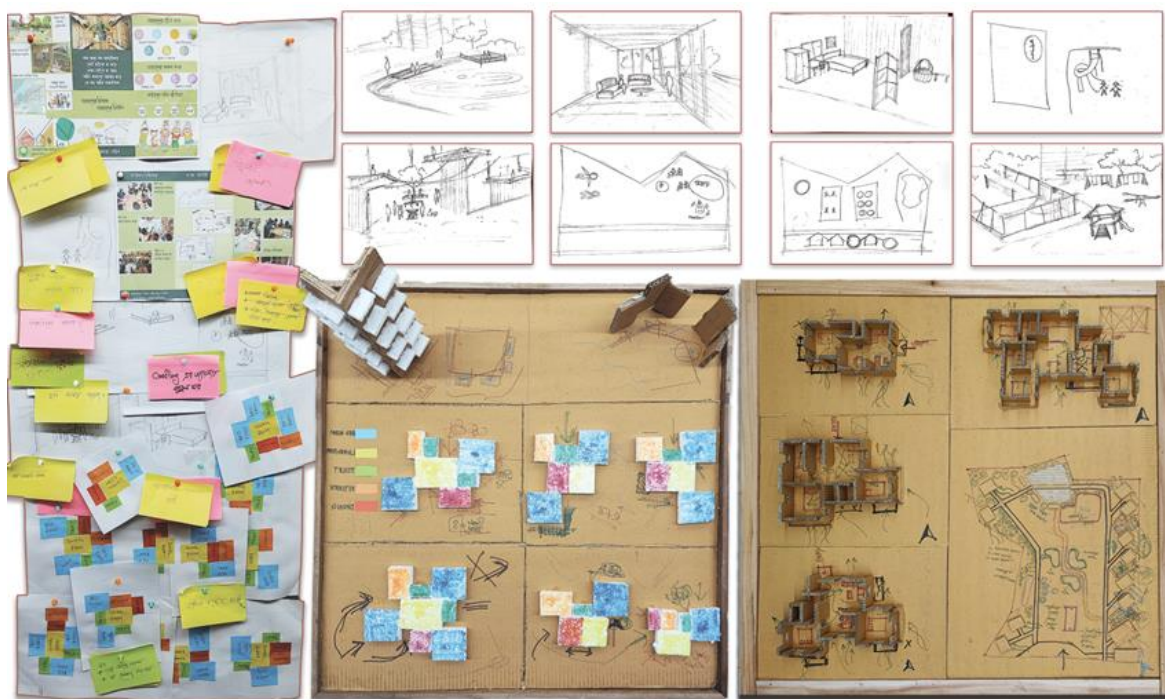


Figure 5: Participatory design artifacts  
(Source: Author)

Figure 5 illustrates multiple artifacts developed in different phases: Phase I (left), Phase II (center), and Phase III (right).

To better understand the data sampling during the community involved in this study, a demographic and socioeconomic profile of the participants was documented, as presented in Table 3. The sample represents not only the bankers themselves but also their family members, from elderly relatives to children, who live on the site. Future residents mentioned in Table 3, who were identified from the official list of new housing applications submitted to the bank this year, were also considered and engaged in decision-making. durations of residence, age groups, and such.

Table 3: Community Participant Profiles  
(Source: Author)

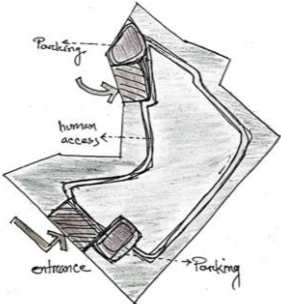
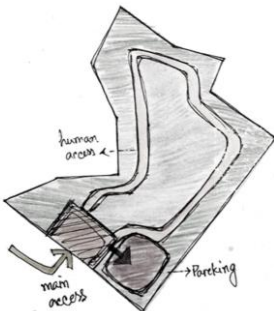
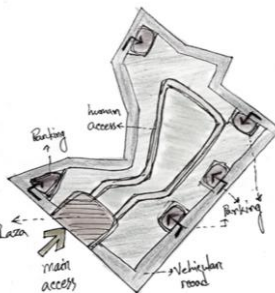
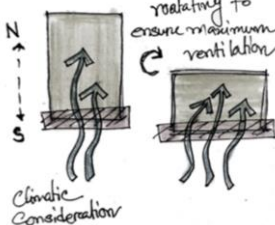
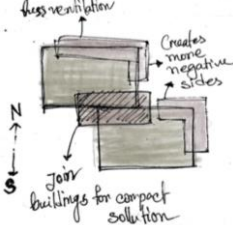
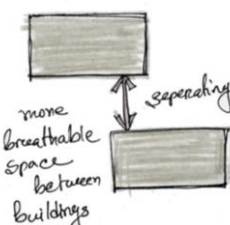
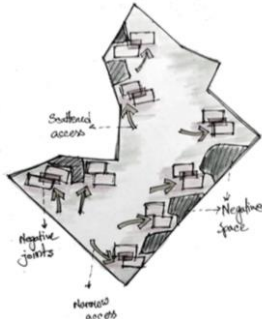
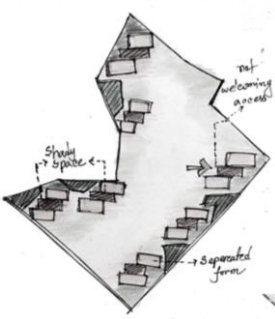
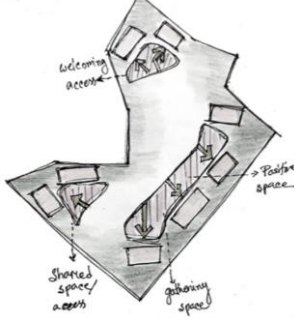
Attributes	Categories	Percentage (%)
Income	High-range	21
	Mid-range	34
	Low-range	45
Duration of stay (years)	1-3	6.2
	4-10	22.6
	11-15	39.2
	Future residents	32
Family members	1-2	16
	3-4	43
	5≤	41

Age	<14	13
	15-30	25
	30-50	54
	50≤	8

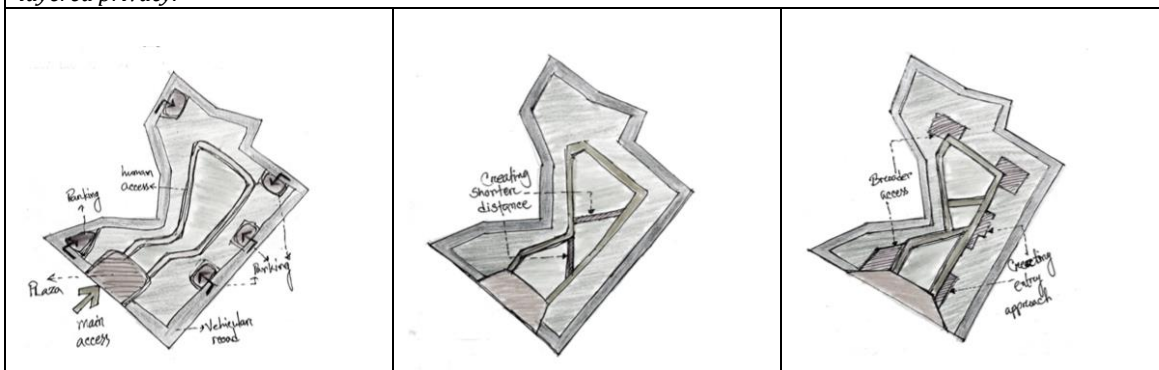
### 4.3. DESIGN DEVELOPMENT

This portion is to present the key phases of design development, regarding the architectural aspects, shaped through the community inputs. Community feedback and collaboration continuously modify design considerations and decisions throughout the process. These phases highlight major spatial interpretation of collective decisions, regarding elements such as entrance and accessibility, form orientation, building arrangement, as well as the integration of community spaces, garden, and water body area, as presented in Table 4. It illustrates decision changes in three phases, from the left column of the initial phase to the right column containing the final phase.

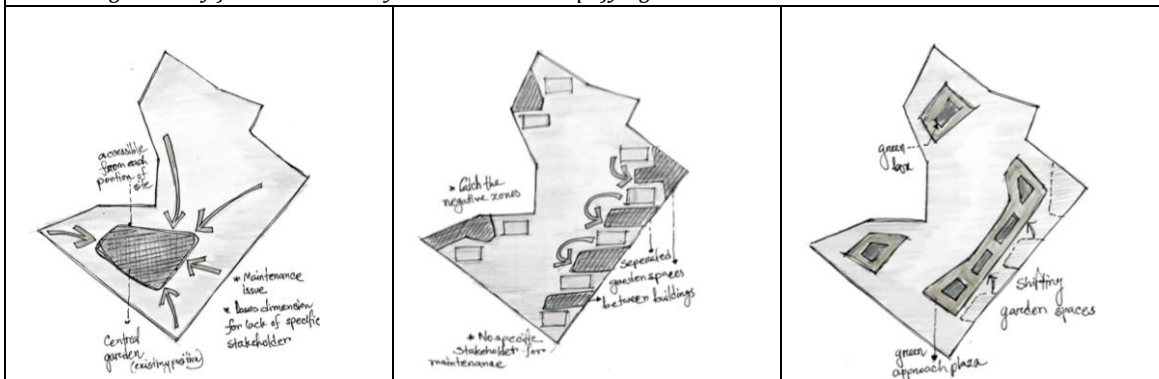
Table 4: Design development phases  
(Source: Author)

<p><i>Accessibility and parking: considering multiple entries and collective parking, with the least hard surface, but access to each building was difficult. Eventually, a peripheral road formed the solution and placed parking in each building, making it easier to access the parking facility for everyone.</i></p>		
		
<p><i>From orientation: Different formations of built units, gone through many trials and errors to finalize the north-south orientation, with certain buffers, to ensure user comfort.</i></p>		
<p>15</p> 		
<p><i>Building arrangement: Along with the peripheral vehicular road, building forms are arranged at the edges to have central community spaces. Position of the arrangement changed in phases considering economic segregation (having mixed income groups), introvert and semi-introverted spaces in front of buildings, creating different social-pocket spaces for different income groups, as well as connection to the central facilities.</i></p>		
		
<p><i>Pedestrian: Connecting all the buildings and social spaces creates the pedestrian belt along the site, the middle joints divide the central spaces into different levels of public-engaged functions, such as more public-oriented functions at the front portion, and most communal-private spaces at the most inside portion, as per community requirements. For example, the front portion supports public activity like teenage play, and is temporarily used for</i></p>		

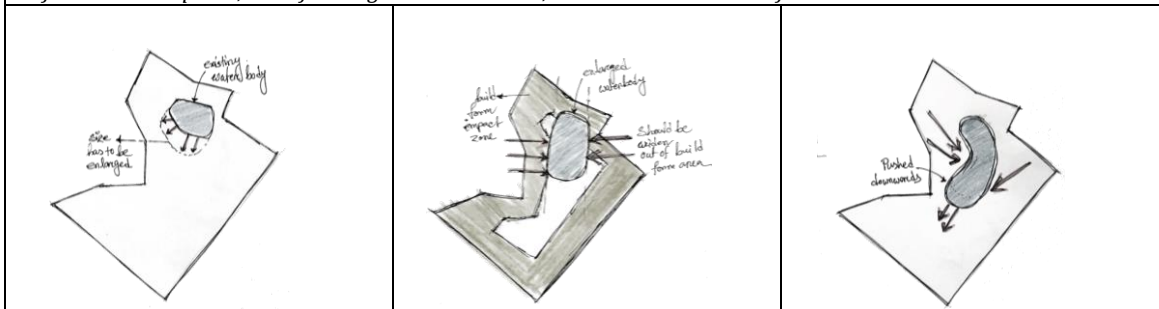
different public events arranged by the community (e.g., weddings). The middle serves children's play, and the inner portion is for women, old people walking, and seasonal picnics, reflecting traditional community practices and layered privacy.



Garden: The central garden was modified and integrated with semi-inverted social spaces, adjacent to buildings, enhancing usability for all community members and simplifying maintenance.



Waterbody: Previously neglected small wastewater pond, used for dumping, got enlarged and integrated with adjacent social spaces, transforming it into a cleaner, interactive communal feature.



As the study continued, all the methodological layers were intended to identify and resolve the community's stories of unmet needs, the absence of spaces, hobby zones, adequate rooms, and meaningful neighbourhood connections, as presented in the co-produced documentary, which is crucial to foreground lived realities in the outcome of the article. (Documentary, 2025).

## 5. Findings

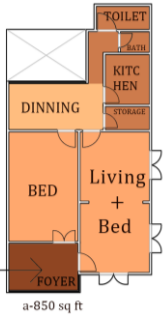




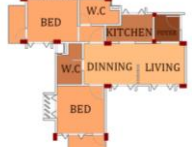
Throughout the dynamic journey and collaborative decision-making process, the development itself resulted beyond the traditional provision. Being adaptive in manner, the approach tends to break boundaries of existing literature by emphasizing outcomes that emerge from within the context, addressing complex, often invisible, contextual challenges, rather than imposing generalized standards.

### 5.1. CONTEXT-BASED ADAPTATION

The context, as referred to the user, community, tends to adapt to modifications carried out within the parameter set by the established housing standards, as described in the literature section. This is the precise point where the approach begins to challenge and dissolve the rigidity of conventional brick and mortar creations. Table 5 illustrates the present condition (the left column) of living units, where the semi-private portion is used as a bedroom combined with a bedroom, having no partition and privacy, which hence proves the top-down planning problems, and the possible collaborative outcome (the right column), as an interpretation of the participatory process. This study included mixed income groups from grade 5 to grade 21, getting allotted houses from 500 sq. ft to 1200 sq. ft. One key socioeconomic insight revealed that lower-income households are due to early marriages and having more children, which

is why, in this context, getting a single-bedroom facility was never enough, as one more bedroom is way more necessary than having a bigger living room.

Table 5: Existing units and co-created adaptation  
(Source: Author)

Existing Units	Underlying issues	Collaborative outcome	Possible unit layouts
 <p>a-850 sq ft</p>	<p>Despite getting a larger space, most of the higher-grade officers live in other areas, as they can afford to own a house. Mostly living in the state housing are bachelor's or transferred employees, whose family lives in different cities.</p>	<p>As a response, the study co-developed a family unit, and a semi-bachelor unit of 400 sq. ft. for single-living upper-graded officers, which is facilitated for occasional visits from spouses or relatives their wives or relatives to visit.</p>	<p><i>For family</i></p>  <p>a-1150 sq ft</p> <p><i>For bachelor</i></p>  <p>b-450 sq ft</p>
 <p>b-655 sq ft</p> <p> <span style="display:inline-block; width:10px; height:10px; background-color:darkred; border:1px solid black;"></span> PUBLIC  <span style="display:inline-block; width:10px; height:10px; background-color:orange; border:1px solid black;"></span> SEMI-PRIVATE  <span style="display:inline-block; width:10px; height:10px; background-color:lightorange; border:1px solid black;"></span> PRIVATE  <span style="display:inline-block; width:10px; height:10px; background-color:yellow; border:1px solid black;"></span> SEMI-PUBLIC                 </p>	<p>Getting a smaller housing area limits the bedroom number to one, making an overcrowded, uncomfortable, and privacy-compromised indoor space.</p> <p>The poor spatial configurations, in terms of spatial zoning inside the house, include having the circulation through the bedroom or a combined bedroom-living room to the dining or kitchen area from the foyer.</p>	<p>The study successfully developed multiple bedroom configurations within the same area, redistributing spatial priority where it was most needed</p> <p>Co-developed house spatial layouts, considering the proper proportions of private, semi-private, and public spaces, while varying in space configuration as per the user's needs.</p>	<p><i>For family</i></p>  <p>c-650 sq ft</p> <p><i>For family</i></p>  <p>d-800 sq ft</p>

## 5.2. TRANSCENDING COLLECTIVE LIMITATIONS

The approach further explored the systemic issues regarding complex and often invisible limitations of social integration. Limitations persist within a collective group living in the same community, not divided by characteristics but silently restrained by unspoken boundaries and internalized norms that outline mutual interaction, participation, and coexistence within shared values.

- **Connection thresholds:** Residents who move in together tend to form bonds, while those who arrive later often feel socially excluded due to a lack of shared spaces or practices that foster interaction.
- **Emotional and spatial decay:** When spaces lack user connection or do not meet needs, they fall into neglect and disuse. For this reason, the community spaces had previously deteriorated over time, becoming underutilized, as stated by the user group.
- **Economic disparities and segregation:** Without thoughtful spatial integration, mixed-income housing can become fragmented and socially divided. Complexity increases while maintaining necessary separation and still providing shared amenities to foster inclusive social balance.

All the social barriers, the study found, often stemmed from the absence of informal gestures in everyday life, a kind of social stiffness holding back. From the architectural standpoint, it is the spatial formalities that can impact and transcend the boundaries (Dovey, 2010). Sharing the spatial hierarchy examples of the first place as the most private portion, the home, the second space as the working spaces, and the third space as the social spaces (Oldenburg, 1999), in conversations with community members, the study further explored the collaborative outcome of breaking the ice of invisible social codes, aimed to go beyond the third place.

Through this participatory process, the collective solution related to what the participants described as the theatrical metaphor of "breaking the fourth wall" (Brook, 1968), where the actor breaks the character and connects to the audience. Just like the example, a collective concept emerged, "the fourth place," a community-created in-between space, indeterminate of form and function, flexibility and adaptability of users' leisure activity, from where the community itself becomes an actor to break the rigidity of the third place, connecting to the audiences of the other social spaces. Advantages. The fourth place, functionally characterised by the hobby zone for the children and teenagers, the crafting and painting zone, and an anchor for storytelling and informal conversation, is co-developed to promote in-between activities like 'people-watching', walking, waiting, sitting, or killing time (Aelbrecht, 2016). Architecturally characterized by the space embedded with a community-crafted colourful fourth wall and double-layer social canvas with an elevated platform, that reclaims human scale. As developed, the fourth place is intended to be a tool to melt social disconnection and foster shared identity, becoming the emotional heart of the community.



Figure 6: Co-conceptualized fourth place (Source: Author)

## 7. Conclusion

The article set out to be developed through a participatory framework to design formal housing, integrating different collaborative aspects, empowering communities in decision-making, and utilizing co-created solutions. Major findings show how essential the community itself can be to comfort their deep-rooted dynamics and actively co-create the contextually responsive design solutions. The outcome illustrates meaningful housing design through a participatory process that not only resolved spatial issues but also fostered a collective sense of ownership, emotional well-being, and belonging. Ensuring all those aspects are essential in sustainable urban housing development. In this process, the role of the developer, or architect, or in this case, the author to act on the neutral ground to enable a balanced and inclusive result. The method is highly dynamic and sensitive to on-ground implementation, and depends on the primary facilitators or the author's integrity, empathy, and contextual understanding. These factors make the approach quite variable from context to context, and need much improvisation, which is promising but also can be identified as its limitation. Despite its complexities, in on-ground implementation, the author finds the approach of co-creation as a critical pathway forward to address modern social problems, especially state-led formal housing, where major challenges are often from the user-end, then architectural form. Hence, user integration is not optional but essential for designing inclusive, livable, and resilient communities.

## 8. Limitations

Examining multiple complex communal sites would provide a deeper understanding of the approach in formal housing contexts. However, this study is limited to being the only mixed-use, communal, active site for formal housing in the city. Future studies should engage multiple communities in the city to achieve more generalized findings.

## 9. References

- Aelbrecht, P. S. (2016). 'Fourth places': the contemporary public settings for informal social interaction among strangers. *Journal of Urban Design*. doi:10.1080/13574809.2015.1106920
- Arnstein, S. R. (1969). A Ladder of Citizen Participation. *Journal of the American Institute of Planners*.
- Boonyabancha, S. (2018). Lessons from CODI in Thailand: Collective housing solutions for the poor in urban areas. *Environment and Urbanization*, 157–176. doi:10.1177/0956247818757581
- Brook, P. (1968). *The Empty Space*. Penguin Books.
- Classification, D. o. (2006). Retrieved from Department of Architecture, Ministry of Housing and Public Works, Government of Bangladesh: <https://architecture.gov.bd/>
- Contributors. (2024). *OpenStreetMap*. Retrieved from OpenStreetMap: <https://www.openstreetmap.org>
- DailyObserver. (2024). Bank Officers Housing Society gets MIJAF award.
- Documentary. (2025). Beyond Brick and Mortar: Reframing Formal Housing as a Verb of Assembly, by Author. Retrieved from <https://youtu.be/wOIWqE9HUuI>

- Dovey, K. (2010). *Becoming Places: Urbanism / Architecture / Identity / Power*. Routledge.
- Erling Björgvinsson, P. E.-A. (2012). Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues*, 101-116.
- Esraz-Ul-Zannat, M. (2016). *A Study On Land Use Policies Of Khulna Structure Plan 2000-2020 In The Light Of Climate Change Induced Flood Scenario*. doi: 10.13140/RG.2.2.29632.94722
- Frediani, A. A. (2015). Participatory capabilities and the prospects for change in informal settlements. In *Urban Design and the Global South: Ways of Walking*. Routledge.
- Friedmann, J. (1992). *Empowerment: The Politics of Alternative Development*.
- Gazette, M. O. (2021). *Bangladesh Gazette*.
- GOB. (2018). *National Housing Policy*. Ministry of Housing and Public Works.
- Gönenç Sorguç, A. (2025). Beyond Bricks and Mortar: Can Buildings Be Designed and Constructed like a Machine? In A. Gönenç Sorguç, *Lecture Notes in Mechanical Engineering: Sustainable Green Conversion*
- Hamdi, N. (2010). *The Placemaker's Guide to Building Community*.
- Lefebvre, H. (1991). *The Production of Space*. Blackwell Publishing.
- Manzini, E. (2015). *Design, When Everybody Designs: An Introduction to Design for Social Innovation*. MIT Press.
- Md. Mahbubur Rahman, M. J. (2016). Public housing in Bangladesh: Present status and policy implications. *Urban Studies Research*, 1–10.
- MHPW. (2025). *Ministry of Housing and Public Works*. Retrieved from Wikipedia: [https://en.wikipedia.org/wiki/Ministry\\_of\\_Housing\\_and\\_Public\\_Works](https://en.wikipedia.org/wiki/Ministry_of_Housing_and_Public_Works)
- Oldenburg, R. (1999). *The Great Good Place*. Marlowe & Company.
- Pala, S. S. (2023). Tenure security solution for community-based development: A. *Journal of Bangladesh Institute of Planners*, 16, 53-76.
- Payne, G. K. (2002). *Land, Rights, and Innovation: Improving Tenure Security for the Urban Poor*.
- Rahman, D. M. (2016). Impact of Resettlement on the Livelihood of Slum Dwellers: A Case. *Bangladesh Planning Research Conference (BPRC)*.
- Rahman, M. M. (2016). Public housing in Bangladesh: Present status and policy implications. *Urban Studies Research*.
- Sanoff, H. (2000). *Community Participation Methods in Design and Planning*.
- Sheela Patel, C. d. (2002). Beyond evictions in a global city: people-managed resettlement in Mumbai. *Environment and Urbanization*, 159–172. doi:10.1177/095624780201400113
- Standards, S. (1992). *Residential Space Standards for Government Officers and Employees*.
- Tipple, G. (2000). *Extending Themselves: User-Initiated Transformations of Government-Built Housing in Developing Countries*.
- Turner, J. F. (1976). *Housing by People: Towards Autonomy in Building Environments*.
- UN-Habitat. (2011). *Affordable Land and Housing in Asia*. UN-Habitat.
- UN-Habitat. (2016). *World Cities Report: Urbanization and Development-Emerging Futures*. UN- Habitat.
- UN-Habitat. (2020). *World Cities Report 2020: The Value of Sustainable Urbanization*.