



Reimagining Huts in Pakistan

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ABSTRACT

Pakistan is one of those countries, which has a large amount of people living in huts formed by all types of discarded materials. Few of them are living their lives as Khanabadosh or nomads and striving to raise their lives. The aim of this research is to provide some basic insights about the huts developed as a temporary home using bamboo as a structure and study of fabrication as a secondary material. An exploration of improve in bamboo shelters can give direction to the government at a basic level, using digital tools. It is in beneficial to give the better shelter option to the Khanabadosh community and improve the spirit of huts in terms of durability and strengthening of the bamboo structure.

Keywords: **Huts, Khanabadosh, Bamboo, Structure, Digital tools**

1. INTRODUCTION

Huts have always held immense emotional worth for those dwelling in them. Mostly disregarded, they have the value of any other type of shelter. In Urdu, for instance, the word "Khanabadosh" (خانہ بدوش), is pronounced /خا.نا.با.دُ.و:ج/ and refers to nomads and wanderers (McGregor, 1993).

Pakistan and Turkey are among the countries with significant populations of Khanabadosh, a term used to describe nomadic or itinerant communities. These groups often live in makeshift huts or temporary shelters, lacking access to fundamental necessities such as stable housing, employment opportunities, healthcare and education. Their marginalization leaves them vulnerable to a range of challenges, as they are frequently excluded from mainstream societal systems and services, which hampers their ability to secure a better quality of life. The absence of reliable infrastructure and support systems further perpetuates their struggle for basic human rights and dignity (Suliman, M., & Açıkgöz, R. 2022).



Figure 1: The traditional Thai House. (Vacharasin, V., 2014)

The penetrations of modernism into such traditional forms change the nature and role of huts and mobile architecture. This shift is not merely aesthetically relevant but also intertwines with people's relationships and the physicality of the spaces themselves in ways of everyday interaction. For example, penetration of modernist materials and construction affects the changes in spatial allocations of these structures and their functionalities in utilization and navigation by families.

However, when modern design principles are infused into traditional hut architecture, it tends to provoke a reappraisal of cultural identity and social behaviour. Again, as the spaces evolved, so do the social dynamics inherent in them. Now, what was once clear-cut and strictly dichotomous-boundaries separating the private from the public or the public from the private-can often blur, giving rise to various new patterns of interaction within family or even community settings. This might help develop social relationships, or conversely, lead to conflicts because modern architectural philosophies may change a few old and traditional ways of living.



Figure 2: Five Studies House Cases in Timor-Leste. (Y.R. Chen et al. 2014)

In a nutshell, the modernization of huts and mobile architecture is connected to a microcosm of broader societal changes. One realizes how the heritage of culture grates with the influence of current realities and pushes the notion of understanding and intervening in the context of domestic space in new ways. As change accelerates, it's high time to delve into the meaning of that for community identity and social relations within the lived experiences of people moving within these changing edifices.

The life of Khanabadosh communities in Pakistan is full of difficulties, rather more intense than that of the nomadic people of the West. Most live in risky housing situations-the shelters being incapable of keeping the weather out. Nevertheless, the Khanabadosh view their huts not merely as a way of survival but homes where they treasure and live. Their attachment to their huts, in this sense, can be likened to the same love that a mother would give to her child; they make them feel belonged, identified, and having continuity in life which is characterized by transience (Javed, 2017).

Huts, to the people here, are not only a house but symbolize a lifestyle that includes cultural practices, familiar ties, and historic stories. It is where the people, under the frail habitation, can easily have traditions passed around, stories told, and memories created. The huts are a refuge because here people introduce traditions, share their stories and create memories for remembrance. Under such a situation, these were no longer shelters but became an essential part of Khanabadosh existence since they provided comfort and stability in an unsure nomadic lifestyle.



Figure 3: Bamboo Hut of Khanabadosh in Johar Town, Lahore (Javed, 2018).

One needs to appreciate the value of huts in the lives of Khanabadosh. It does demand an accurate appreciation regarding their role not only as a source of physical shelter but emotional and cultural sustenance as well. In valuing this relationship, we get to appreciate the resilience and spirit that can be found in these communities of Khanabadosh, as well as the urgent need for change regarding housing and living conditions (Javed, 2018).

Thereby, ideology and development of vernacular buildings and mobile architecture change over time to reflect cultural change and modern influences. Using Thai houses as a case study would enable understanding how structures that have been built using traditional vernacular materials have changed considerably with respect to modernism. Such transformation has also had consequences in smaller homes, such as huts, where today there are juxtapositions of contemporary design and architectural thought.

2. LITERATURE REVIEW



Figure 4: Khanabadosh huts constructed by using discarded bricks and bamboo structure in Johar Town, Lahore

Space, in most urban residential areas is often scarce. It is such an aspect that the Khanabadosh community has come up with a unique approach to housing. The members of this community construct their homes from a vacant plot in most cases where they first obtain permission from the landowners. These are makeshift dwellings primarily built from discarded bricks and bamboo that result in structures tantamount to mobile architecture.

Due to recycled materials availability, designs and construction are adopted flexibly and creatively in these homes. If one has a family, their form of shelter can be shared by more members in the same family. This fosters community and interdependence among the people sharing the shelter. Whereas

they are caretakers of plots that they occupy, the Khanabadosh perform responsibilities on the plots that go beyond mere shelter to contribute to the upkeep and management of space. Therefore, it is through this arrangement that they gain a place to live in while improving their relationship with the urban landscape in which they are situated.



Figure 5: Khanabadosh Jhonpra hut made of timber and bamboo framework (Kunbhar, Z. 2018)

Focusing on the framework of huts made of solid timber and bamboo, the Khanabadosh community applies several innovative strategies for building shelters in which they and their families may live. Expressing not only resourcefulness but also adaptability to their living conditions, these become most distinct.

Figure 4, The hut further exemplifies reconstructing using discarded bricks and bamboo. It is an economical way of building, yet utilizing reclaimed materials lowers the cost and demonstrates a well-defined sustainable policy. Utilizing a framework of bamboo can be developed to give an effect of flexibility and strength against the thrusts of urbanism.

On the other hand, Figure 5 is a nearly entirely solid timber and bamboo hut. This design has basis more on durability since the actual timber structure provides an excellent, more solid structure that can be resilient to the elements and resistant to destruction. The amalgamation of these materials, therefore, enhances stability in the shelter while light in the case of bamboo; this is a factor for mobility and the ease with which one can shift or rebuild it.

Through these diversified building techniques, the Khanabadosh not only build functional residences but also forge a feeling of community and belonging. Each shelter is a testament to their ingenuity as they show how they solve the problem of urban living with whatever material they have at hand.



Figure 6: The community of Khanabadosh living together and every shelter is constructed by themselves (Kunbhar, Z. 2018)

The community of the Khanabadosh thrives on collective living, whereby members are supportive of each other's building of shelters. It is not mere building of individual huts but rather a society of interconnected dwellings, each having families. The community ensures maximum resource use by wasting nothing and making use of discarded materials. The long-practiced material used in the house structures and frameworks has been bamboo, but through this practice, the community members are very much familiar with the use of this material, and just basic knowledge of construction makes them capable of assembling quite stable bamboo frameworks for their well-functioning shelters.

3. METHODOLOGY

This paper will attempt to study huts comprehensively, inquiring into their origin and development within both traditional and contemporary aspects. The study is divided into several heads, which, together, brings light to the importance of the hut architecture, especially related to the Khanabadosh communities in Pakistan.

A comprehensive literature review will be carried out by utilizing an array of research articles, books and scholarly works. A comprehensive review will cover historical as well as cultural aspects of huts and include how designs and forms of huts change over time. Special emphasis will be placed on the transition from traditional forms of hut designs based on local materials and cultural practices towards modern renditions involving contemporary materials and technologies. This analysis will bring to the attention of the reader how these changes may be influenced by social, economic and environmental factors.

Part two of the study shall, therefore, be specifically on the present hut conditions in Pakistan, where millions of Khanabadosh communities remain. This section will entail field research that indicates the form of huts in other parts of the country. It is through the basic structures, construction techniques and material usage that the researcher hopes to find a way of understanding the functional and aesthetic properties of these houses. More than that, details on how local climate and availability of resources may influence the construction of huts will be spelled out.

The third aspect is more technical concerning the possibility of huts and how their geometries and material sciences can further innovate aspects of hut forms. This part of the research will be based on traditional design ideas combined with modern technologies into a hybrid system. Structural and aesthetic options of huts will be computed through softwares by using digital modelling.

The final part of the paper will synthesize all those findings and then make actionable recommendations for further development. The stress will be on digital design methods to be applied for betterment in the living conditions of Khanabadosh communities in Pakistan. It will further recommend practical measures that the Government of Pakistan as well as NGOs might undertake to effectively address issues these communities are presently faced with.

This paper suggests specific intervention—from infrastructure upgrading to sustainable housing solutions—for a discussion on how the cultural heritage of such nomadic groups may be respected and preserved, simultaneously with attending to their immediate needs. In this way, research shall not only serve an intellectual discourse but also add valuable insights to policymakers and practitioners committed to social justice and sustainable development. This research therefore hopes to weave in historical insights, the realities of the present day and possibilities of the future in hut architecture at the same time promoting a more informative and empathetic approach for handling challenges directed towards Pakistani Khanabadosh communities.

4. DEVELOPMENT AND INNOVATION IN STRUCTURE OF HUTS

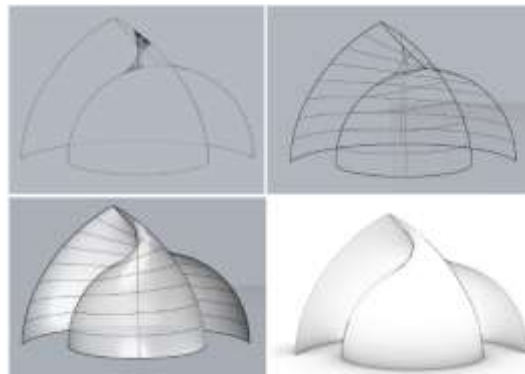


Figure 7: Schematics for the hut design were developed using Rhinoceros software.

The innovation of hut design for Khanabadosh community is based on quite a few vital elements. First and foremost, the form of the hut must draw from the fluidity of nature; we, as human beings, are inherently a part of nature. This notion of design springs directly from the elegant growth patterns found within flora, where each plant grows from one point base to its summit.

The design continuity of this hut is so effortless that it leads the visitor's eyes to flow without breaking into some isolated units; just like how the nature captures our minds. The designs do not happen as separate units in this hut's structure; instead, these emerge from a single point and spread endlessly in an uninterrupted harmonious form. Not only does this approach reflect organic qualities of nature but also tries to create an aesthetics in continuity which resonates with the Khanabadosh lifestyle.

Open sides in both sides of the huts allow for a very open feel of going through into the family area, curved as the passage is, due to pragmatic design considerations. The arranged layout favours airflow in relation to different weather conditions and allows hiding from sharp winds and rains by the family.

The design is appropriately reflective of a very critical thought on the philosophy of nature and practical needs for the families of the Khanabadosh. Putting these two elements together created more than just a shelter; the hut becomes an aesthetically compatible place that harmonizes with its surroundings, promoting the comfort and practicality for the dwellers. This balance indicates the innovation and creativity in the development of the design for the Khanabadosh huts.

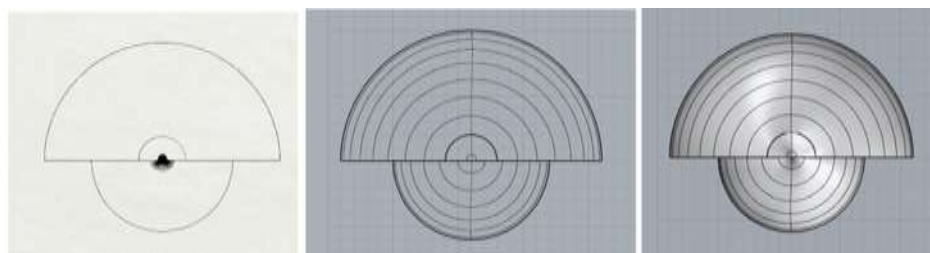


Figure 8: The top view of the hut design, along with its structural geometry, is presented in various visual styles of plans.

Similarly, floor plans of the hut are also well-composed by insertion with which blend well with their surroundings. Fluidity experienced in elevations is carried on throughout the plans and highlights a harmonious integration of the two aspects. A more important feature of the design is the beauty and precision of scaling between two different shapes that work together as a unit. The ideology hidden is the capturing of the fluidity of nature and the flow across all the design parameters, which will make the hut really aesthetically beautiful and rigid in its integration with nature, as it would result in an organic yet functional space. It harmonizes the form and function and reflects the natural and serves the practical needs of the inhabitants.

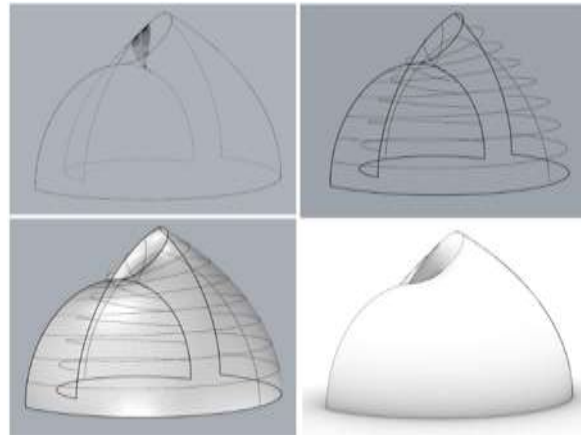


Figure 9: The elevation showcases the design of the inner family private area within the hut.

This elevation reveals the hidden area of the hut designed as the private area for the family of Khanabadosh. It exhibits "a space within a space" and "a shape within a shape," thus providing a layered experience of architecture. All designs and inspirations taken from nature would then be applied such that the hut was practical for use every day by the Khanabadosh people. This private space is stressed as a human right, integrated and appropriately considered in the overall design. With aesthetic inspiration from nature balanced with functional demands, the design creates a sentiment of safety and privacy for the family and so it turns out to be their sanctum within that large structure.

Other practical features have been included in the design of the hut, like an effective ventilation system represented by the oval opening at the top. Thus, airflow, besides providing natural light inside, enters the hut gently into the private space without sharp beams of light. All the living spaces are thus blessed with this natural light, where the design intent of maintaining the "open to sky" attribute enhances both functionality and comfort.

The aesthetic appeal of the community can also be defined by the elevations, floor plans and perspectives of the huts where multiple units are developed at a designated site for the Khanabadosh community. The harmonious juxtaposition of form with function will ensure that society will be pleasing to behold yet practical to the needs of any well-planned and thoughtfully designed community. This approach does bring out the potential of the Khanabadosh community to really grow in an environment that respects their cultural identity and a higher standard of living.

5. FUTURE RECOMMENDATIONS

Base on scarce resources, researches into the hut living and bad conditions formed by the Khanabadosh resulted in an initial approach to design for their huts. Researching basic structural formations to improve family dwelling conditions, the findings from this research have formed a basic solution to hut designs and bettered the quality of life. Still, so many parameters need to be studied and research further, with innovative solutions developed. These include the structural integrity of the huts, design development in process for further needs and proper inclusion of landscape planning. The achievement of these aspects will be crucial in designing sustainable and functional living environments that meet the actual needs of the Khanabadosh community. Due to continued exploration of these dimensions, their lifestyle and living conditions have much potential for great improvement.

6. CONCLUSION

As designers, we need to focus on improving human lives, especially the Khanabadosh community. Though their issues have been recognized at different levels, practical solutions are hard to come by. The problem remains in its real-life expression and it is about time that we move away from mere theoretical approaches and focus on practical, actionable solutions that can effectively meet their needs. Poor housing, along with numerous other problems, is one of the biggest challenges for the Khanabadosh community in Pakistan. This study addresses the issue of poor housing and offers a direction toward its solution in practical terms. It is vital for the government to treat such research with seriousness and implement the solutions suggested herein to actually change the condition of the lives of Khanabadosh. Future research will include extending this work to examine structural integrity in the shelters, again using sustainable materials, in the hopes of providing the Khanabadosh community with increased opportunities to improve their lives.

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This article is presented by me. I declare that this manuscript is original, has not been published before and is not currently under consideration in any other journal. Moreover, I declare that no funding was received for this paper.

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