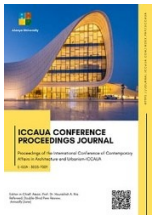

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Traditional is Innovative: Redefining the Role of Conventional Building Materials and Construction Methods

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Abstract

Conventional building materials and construction methods are losing their significance in vernacular settlements in an attempt to be modern. In urbanisation, smaller settlements are losing their cultural identity and traditional craftsmanship in their building elements while adopting fashionable building materials, negating the regional construction methods, which can be defined as intangible cultural heritage in this project. The tacit knowledge becomes redundant for the next generation and the larger stakeholders, including designers, contractors, engineers, and architecture students. Today, many contemporary practices have adopted this knowledge through deep learning and hands-on training in these construction methods and defining their new "vernacular". The paper studies a few architectural practices that have defined their latest ideas and visions based on these conventional building materials and construction methods to revive and retain traditional knowledge through their work. These practices also belong to different settings that emerged from different ideological frameworks to answer the changing needs of the time and the scale of their practice. Their shifting roles from being a designer to a craftsman at work are sculpting their practices, which are much more inclusive, involving local communities, skilled labourers, students as volunteers from architectural institutions and a strong will to retain the value and traditional knowledge of regional building material and construction methods. The documentation exercise in each academic semester becomes the focal point for extracting knowledge and utilising the outcomes to transform and nurture it today. The paper explores the form of these contemporary practices, which follows the "theory - research - hands-on practice" format, and the changing role of the architect as a conscious designer to retain and transfer the cultural heritage to their peers, the community and the next generation for a better future.

Keywords: Building materials, Construction methods, Traditional, Conventional, Innovation.

1. Introduction

1.1 Understanding Vernacular Traditions

The natural, unreflective development of the built environment begins with tradition. While tradition tends to be inflexible and resistant to change at times, vernacular architecture embraces adaptation. Through repeated refinements over time, it arrives at the most effective solutions (Das B, 2023). Vernacular traditions usually denote the cultural processes that are innovative and are developed by the interpretation of the knowledge through past experiences, adopted and evolved by the new generation to deal with the new needs and the challenges over time (Montella M, 2009; Tipnis, 2012; Zwerger, 2019). The value and significance of the vernacular have only been recognised in the last three decades, and extensive research has been undertaken for its documentation in the West (Tipnis, A, 2012). Today, the discourse about the merit of vernacular traditions, especially in architecture and vernacular settlements globally, is no longer polarised as observed and tossed by Tipnis A. (2012). The binary in the attitudes of the "modern" and the "traditional", while referring to the cultural identities which are claimed to revolve around "craft" or "technology" for its architectural production, is no longer justifiable today (Lall, 2012). The terms "modern" and "traditional" are frequently seen as fundamentally opposed. Vernacular architecture is often classified under traditional architecture, setting it apart from what is considered modern (Aziz Amen 2017; Aziz Amen and Ahmad NIA 2021; Aziz Amen and Nia 2018). This binary perspective tends to portray traditional architecture as outdated or lacking in technological sophistication. Furthermore, it not only isolates the vernacular as a separate category but also suggests that it is fixed and unchangeable, which is viewed as flawless and beyond the need for improvement (Rashid, M., & Ara, D. R., 2015).

People's desire to embrace modernity has transformed their way of life. These socio-cultural changes have influenced the spatial layout of settlements, introduced new building materials and construction methods, and ultimately shaped the resulting built environment (Patidar, S., Raghuwanshi, B., Tiwari, S., 2020). “solving the problem of overpopulation requires more than just building new towns” (Kadry & Husam , 2024). The imperatives of change of the growing population in the world, the global shift towards urbanisation and the increased material demand need a synthesising approach, especially by nurturing vernacular traditions as tacit knowledge and consciously passing them on to the next generation (Tipnis, A, 2012). The triangular framework of three theoretical standpoints revolves around the discussion on environmental, technical and cultural aspects described by the eminent architect and practitioner Ashok Lall, who has been involved in developing strategies for sustainable urban development for the last three decades. And, culture remains the most crucial dimension. The mechanism of the designer and the craftsman as the maker in what is made involves many creative imaginations, and the joy of crafting utility with beauty cannot be lost sight of under the pressure of efficiency and speed (Tipnis, 2012). The loss of cultural creativity would inevitably undermine the collective vernacular architecture and traditions, and hence the culture. Vernacular traditions in architecture are prominently witnessed in the villages and towns in the absence of industrial progression yet. It has allowed the culture of collective learning in the local communities by involving local crafts with locally sourced materials and methods of building (Montella M, 2009; Zwerger, 2019). Today, evolving cities and towns in the country will be able to reclaim better and rejuvenating urban spaces for their inhabitants, and it has been widely accepted and adopted by recent practices. Advanced technology enables us to address and recognise the value of modern science and engineering, and traditionally used building materials and construction techniques are being evaluated with scientific and engineering tools. This enables their adaptations and development to better performance and higher efficiencies in the utilisation of natural resources (Lall, 2012). Unlike the West, the redefined construction methods with evolved resolutions are helping to find appropriate combinations of using steel, glass and plastics in combination with "natural" materials. At the same time, today, the rising concerns such as global warming and climate change, which also denote the environmental disparity, make the discussion of this paper crucial and urgent. Vernacular traditions take into consideration the human adaptation towards the climatic cycles and evolve their unique method to survive with the available resources, exploring them to their maximum. And, this becomes a limitation as well as a challenge to meet the technology with innovative methods of construction, especially in the vernacular architecture.

1.2 Traditional Building Materials and Construction Methods

Traditional building materials like stone, wood, and mud are experiencing a resurgence due to their self-sustaining properties, especially as modern materials such as reinforced cement concrete (RCC), steel, plastic, and glass are often cost-prohibitive and labor-intensive, making them less feasible within limited budgets (Mahdavinejad, M., Ziaadini, M., & Fard, M. M. 2010). The vernacular architecture of India has been researched and published by several authors like Paul Oliver, Dawson & Cooper, and Brunskill and Rudofsky. Vernacular architecture is typically described as a spontaneous, locally rooted, rural form of construction, often created anonymously and without formal design training—originally categorised as non-pedigree architecture (Rapoport, 1969; Dayaratne, 2008). Bernard Rudofsky brought attention to this concept in 1964 through his exhibition “*Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture”*, framing it as a subject of discussion across multiple fields, including anthropology, social sciences, engineering, art, and architecture (Kumar A, 2020). It is, however, not enough to protect and preserve the static vernacular built form. It is imperative not only to recognise and appreciate the dynamic building traditions and knowledge systems that are responsible for creating that form but also to preserve and pass on the tradition to the next generation. The aim of this paper is not to celebrate the past or idealise the vernacular but to highlight the crucial role of recent practices that have taken this mission ahead, engaging vernacular traditions critically and taking valuable knowledge from the past. Also, the paper explores two practices and how to integrate this knowledge with what is equally valuable to the design process, which is modern and contemporary, yet built upon locally distinctive traditions effortlessly and not ignoring the cultural and ecological contexts. Vernacular architecture, shaped by communities in response to their environmental and cultural contexts, is now recognised as part of "built heritage" (Srivastava, et. al 2023). The degree of transformation of vernacular varies from one region to another (Kumar A, 2020). One of the studies in Nigeria assesses and highlights the aesthetic features of both traditional and modern architecture, exploring how certain styles or design elements gradually evolve, dominate, or replace others. It also examines the reasons behind and impacts of one architectural approach overtaking the other in the Yoruba region (Arenibafo, F. E. 2017). Similarly, these transformations are being identified and analysed by recent practices as an expression and response to emerging technologies, hybrid economies and social structures. They deal with the evolution of structures, form, aesthetics, and respective changes in building materials and construction techniques which affect the living patterns, culture, and identity of a place (Srivastava, et. al 2023). New houses built are sometimes void of the older traditions, but the study of transformations may lead to terming them as “new vernacular” (Kumar A, 2020) (Hoseini, Berardi & Dahlan, 2014), (Richa J, et. al, 2020), (Savyasaachi, 2019). In this changing scenario, it is important to examine the status of the traditional methods as tacit knowledge, their efficiency in dealing with current challenges, and their awareness among all the stakeholders involved, including the recent practices.

Figure 1. Methodology and the framework established by the author.

2. Methodology

The study is based on qualitative research and includes the methods of descriptive analysis and exploratory research for data collection and analysis (Flick, 2018; Creswell, 2013). The paper uses the case study approach of primary data collection and analysis as the main research tool in the identified area of study where the documentation exercise in academic semesters of undergraduate courses of architecture becomes the focal point for collecting data, observational study and its analysis for a discussion (Yin, 2018; Denzin & Lincoln, 2017). Primary observation as a data collection method was significant to the study. The role of observation in qualitative research is discussed extensively (Angrosino 2007). The paper also refers to the interviews with the architectural practices to understand their vision and ideas based on the parameters of building materials, construction methods, context and topography of different climatic settings to answer the changing needs of the time, the scale of the construction and the idea of functional aesthetics in the design. The collected data is interpreted and the data is mapped and collated to highlight the shifting roles of these architectural practices from a designer to a craftsman at the site and sculpting their practices, which are much more inclusive, involving local communities, skilled labourers, students as volunteers from architectural institutions and a strong will to retain the value and traditional knowledge of regional building material and construction methods.

3. Literature review

3.1 The “vernacular” and the “traditional”

The concept of 'vernacular architecture' emerged distinctly during the postwar era of the 1950s and 1960s, when architects began to reference simple, traditional structures to support the principles of functionalist design. It was recognised as a utilitarian form of shelter, serving people, animals, and storage needs shaped by material availability, performance, and local environmental and climatic factors (Oliver, 2006; Al Sayyad, 2004). These buildings, rooted in a specific place and culture, evolved organically over time and were typically constructed by laypersons drawing on collective, inherited knowledge. As such, vernacular architecture is often described as “the architectural language of the people,” with its distinctive ethnic, regional, and local expressions which are crafted not by professionals, but by “non-experts” (Oliver, 2006). The historicist debate of the 19th century is exemplified by Gottfried Semper’s uncertainty about whether traditional architectural forms and typologies should be discarded entirely in favour of a new order or whether their essence could be preserved through abstraction based on existing conditions (Mallgrave, 1988). Throughout the 20th century, architectural discourse continued to frame tradition and modernity as opposing forces. Initially, tradition was portrayed negatively (associated with irrationality and regression) but was later reconsidered more favourably. In part as a response to the perceived excesses of 19th-century historicism, early modernist thinkers championed values such as rationalism, progress, technological innovation, and social reform, positioning these ideals in contrast to what they saw as the backwardness of tradition (Crysler, C. G., Cairns, S., & Heynen, H. (Eds.). 2012). Today, architecture is increasingly seen through a more inclusive lens, one that embraces both the traditional and the everyday. In this context, vernacular architecture is not a static relic but a living, evolving component of the built environment. It represents a harmonious interplay of materials, forms, and natural surroundings, embodying architecture deeply embedded in its ecological and cultural landscape. Because vernacular structures are usually built with the direct involvement of their inhabitants, they reflect not only the functional needs but also the cultural and spiritual values of their communities. They are the cumulative product of centuries of lived experience, a synthesis of craftsmanship, environmental adaptation, and communal knowledge. For instance, in southern Romania, the traditional use of clay in building, through techniques such as rammed earth and adobe, began to be supplanted by more urban construction methods even before World War II (Minoiu et al.). Vernacular architecture, then, is best understood as a contextual and adaptive response, shaped by local knowledge, environmental conditions, and socio-economic realities (Oliver, 1997; Lawrence, 1987). These structures, though rooted in tradition, are dynamic; they evolve in tandem with the changing values and lifestyles of their inhabitants (Oliver, 1989). As such, vernacular architecture can be defined as a form of traditional building practice, passed down through generations, employing local materials and techniques in response to the climatic, cultural, and economic circumstances of a specific region.

3.2 Theoretical Framework

According to UNESCO, tangible cultural heritage encompasses monuments, groups of buildings, and sites that hold Outstanding Universal Value due to their architectural significance, coherence, or integration within the landscape, as evaluated from historical, artistic, or scientific perspectives (Figure 2). In contrast, intangible cultural heritage is manifested through oral traditions, social customs, ritual practices, and traditional craftsmanship. Tangible heritage thus serves as a foundational platform - both physical and symbolic - upon which intangible heritage is enacted and sustained. In the context of this study, vernacular architecture is regarded as tangible cultural heritage, embodying tradition through its physical form, while the associated construction techniques are considered intangible heritage. These building practices represent tacit knowledge, passed down through generations by way of observation, apprenticeship, and

practice, rather than formal documentation. If the cultural heritage is destroyed, the value of the place is lost, and it is not sustainable (Sattrup, P. A. 2009).

A related and relevant conceptual lens is that of critical regionalism, an architectural approach that gained prominence in postcolonial Indian discourse. This framework seeks to mediate between local cultural needs and the universalising tendencies of modernist architecture (Henrique, 2013; Slesor, 2000). Critical regionalism resists the homogenization inherent in global modernism by anchoring design in local context in terms of climate, material availability, and cultural practices; thereby reintroducing meaning and a sense of place into architectural form (Bagha, 2018). Although the term "critical regionalism" emerged formally in the 1980s, Indian architects had already been intuitively engaging with its principles decades earlier. Their work demonstrated sensitivity to local climatic responses and material limitations, often maximising the potential of indigenous construction methods and materials. In this sense, critical regionalism and vernacular traditions intersect, both grounded in contextual adaptation and cultural continuity.

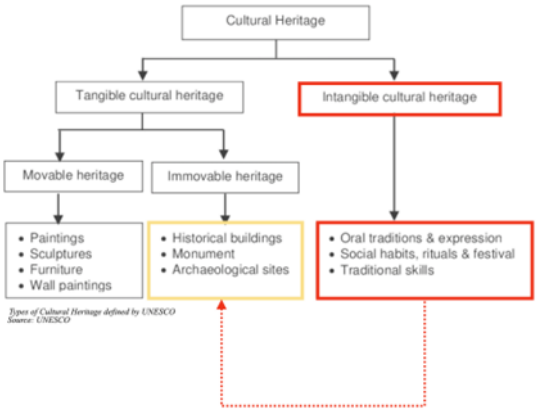

Figure 2. Types of Cultural Heritage defined by UNESCO and the framework established by the author.

In parallel, Situated Learning Theory underscores the significance of learning within authentic, real-world contexts, where individuals acquire knowledge through engagement in meaningful activities and social interactions (Figure 3). Distinct from traditional cognitive theories, these approaches conceptualise learning as a socially embedded process, emphasising the co-construction of knowledge in situ - within the context of actual work practices—rather than as a detached mental activity or knowledge transfer (Fox, 1997). This theory asserts that experiential learning, grounded in direct participation and practical application, leads to deeper comprehension and more effective integration of knowledge into practice. Complementing this perspective, Participatory Design Theory promotes a collaborative design process that actively involves stakeholders and end-users from the earliest stages. This approach ensures that outcomes align with the needs and expectations of those who will engage with them (Rosenzweig, 2015).

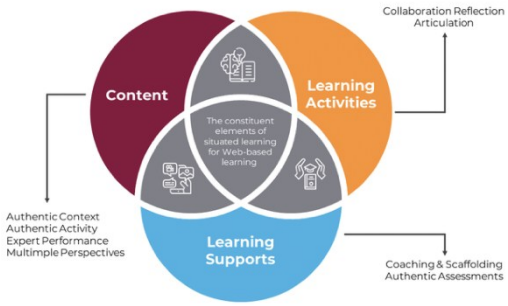

Figure 3. Illustrated the framework of Situated Learning Theory (Source:*https://www.slideegg.com/situated-learning-theory*).

It fosters a democratic ethos in design, valuing the input of non-traditional contributors, such as skilled labourers and craftsmen, as integral to the creative process. Both theories converge on key principles: the centrality of context, the value of experiential learning, and the importance of knowledge creation through practice. In the context of vernacular architecture, these frameworks affirm that building knowledge is not merely transferred but constructed through hands-on participation, often across generations, by communities intimately familiar with their cultural and environmental settings.

4. Case study analysis and observations

As mentioned above, there are two case studies shortlisted based on two different climatic zones, one in Kutch, Gujarat, with the hot and dry region and the other one located in Kangra, Himachal Pradesh, with the cold and temperate subtropical zone. The Bhunga House in Kutch, Gujarat and the Mud Mansion at Kangra, Himachal Pradesh, are two live case studies that have been conducted employing the academic exercise of measured drawing as documentation of vernacular settlements. Both case studies also belong to extreme climatic conditions and seismic zones, which have made them adopt earthquake-resistant building techniques traditionally for ages. The paper studies two design units

under the residential category, one designed by the Hunnarshala Foundation, which started after the massive Bhuj earthquake in 2001 and the other by the young design practice named Sanshreya Design Studio, inspired by the learnings from Didi Contractor. Four objective parameters are identified as mentioned below for further observations and analysis.

1. Material Palette
2. Older and newer construction methods
3. Newer adaptations and alternatives
4. Principles of aesthetics and design

Hunnarshala Foundation, a non-profit organisation, is dedicated to empowering communities to reconstruct their habitats, grounded in the collaborative networks and partnerships established since 2001. The foundation is guided by the principle of *applied research*, recognised as an effective method for knowledge generation and dissemination, one that requires a deep understanding of both technology and the socio-cultural and geographical context. In contrast, Sanshreya Design Studio has developed a contextually responsive hybrid approach that integrates vernacular construction techniques with a strong ecological awareness. Each of their projects serves as an opportunity to engage with the unique characteristics of the soil and terrain, pushing the boundaries of traditional materials like mud and bamboo. By working closely with local artisans, they aim to revitalise and innovate within traditional building practices. Additionally, the studio is committed to education, regularly conducting workshops to share their experiences with architecture and design students in the region. Both cases are analysed to investigate and compare the evolving changes when the traditional method is adopted by an architect with a contemporary touch but still rooted in the vernacular form, material, and method.

Table 1. Objective Indicators for Case Study of Bhunga House, Kutch, Gujarat.

Parameters	Case Study 01 Bhunga House and Sham-E-Sarhad
• Material Pallate	
• Methods (Newer and older)	
• Newer Adaptation and alternatives	
• Design Principles	

4.1. The Bhunga by Hunnarshala Foundation

A Bhunga is a traditional house, a distinctive circular mud hut found in the Kutch region of Gujarat. After the devastating 1819 earthquake, the local communities developed the innovative circular design of the Bhunga to minimise damage to life and property. This revised design, which is nearly 200 years old, stood very firmly during the massive earthquake of 2001, which was very close to the epicentre. The design consciously uses the scale of the unit and the modified roof, complementing the circular planning and displaying the use of bamboo in creating a jali that acts as a perforated plane above enclosing the sitting space underneath.

Traditionally, the plinth of the Bhunga is made out of stone that acts as a ring beam for the walls of the house. It will protect the wall from the moisture from the earth as well as from insects. In the contemporary unit, the wall is on a ring beam of stone masonry. In the traditional settlement, the outdoors act as a community space, so the bulging out of a plinth is used as a seat with a back support of the wall. In the contemporary one, the designer took the inspiration and made a plinth to sit as an extension of a wall, which is also part of a semi-covered, semi-private area. The walls in a traditional unit have small openings at a low height and act as a window for ventilation and inside/outside connection. The size of the openings is very suitable for performing daily activities, which take place on the lower level in the enclosed space. During the construction process, the empty metal oil boxes having chamfered edges have been put at the sill of the wall. After the whole cob wall is constructed and dried, they remove the box that made the opening in the wall and act as a window. Sometimes they just put some wooden sticks when the mud mortar is a little wet, which works as a protection of the inside space against animals. Whereas, in the case of contemporary construction, the openings are built with a predefined wooden jamb and a shutter frame, where the lintel is constructed out of Reinforced Cement Concrete (RCC) with larger but accurate sizes of the openings. Here, the sill and lintel levels of the windows are at the standard height, as windows have a space to sit like a bay window inside the Bhunga, which is covered with the overhang

of the thatch roof. The door directly opens up into the cluster, facing another unit (Bhunga), whereas the contemporary form allows an indirect entry through an offset to retain privacy and to accommodate the other related functions to the space. Also, contemporary techniques are inspired by elements like bulging out the plinth from the traditional form and utilising it as a sitting edge, as shown above in Table 01. The traditional Bhunga houses have a beam in the centre covering the extreme diameter (XXmt) of the span to support the roofing above. In the contemporary one, the longer span (Xer Y mt) is taken care of by the brackets on the periphery supported on the RCC ring beam. This RCC beam is again supported on the mud walls. This advancement in the traditional technique is adopted to have a clear span, which is larger with a bigger volumetric space inside, having structural details. The traditional construction technique uses the cob wall as the primary design element, where the lower part of the wall is wider and creates an undulating surface with a natural finish. Whereas in the contemporary one, mud earth blocks are used and finished with mud plaster. Using an earth block as a module allows the wall to go higher and keeps the wall surface uniform throughout.

Table 2. Objective parameters for the Case Study of Mud House at Kangra, Himachal Pradesh.

Parameters	Case Study 02 Mud Houses and Private residence at Kangra
• Material Pallate	
• Methods (Newer and older)	
• Newer Adaptation and alternatives	
• Design Principles	

4.1.2 The Mud Mansion by Sanshreya Design Studio

Kangra region is one part of Himachal Pradesh situated in the Northern Part of India. The valley is a small part of the Himalayan Range. Slate stone used for dry-stone construction (Kant & Lakra, 2023), bamboo, and mud are the local construction materials that people have used for years and developed a practice by 'Didi' Contractor, a self-taught architect based in Sidhbari in the Kangra district of Himachal Pradesh, India has understood these materials and local practices, with her knowledge, she has experimented and gradually developed construction methods where the resultant space from the traditional materials becomes much more meaningful (ThinkMatter, 2019). The unique technique of interlocking stones is adopted to create a stronger bond rather than simply filling gaps with smaller stones. Mud plaster is commonly used for finishing interior and exterior surfaces. The most prominent roofing material in Himachal Pradesh is slate, which is primarily sourced from mining areas like Thatri, Kareti, Khaniara, Narwana, and Bhagsunath, dating back to the 1880s. The project is located within tea gardens that provide stunning views of the Dhauladhar range in the Himalayas to the north. The client, a native of Himachal Pradesh, has fond memories of their mud house from their childhood. The residence is designed as a four-bedroom layout made from load-bearing adobe, featuring both formal and informal living spaces that connect with outdoor areas, effectively blending with the dense landscape around (Stir, 2020). These spaces are placed in the southeast to maximise sunlight as a response to the cold and temperate climate in the region. The main entrance is designed to have universal accessibility and a staircase, creating an interesting front facade by using a combination of local building materials such as stone, mud, and baked bricks.

5. Results and discussion

Table 3. Comparative discussion on understanding the use of building materials and construction methods.

Parameters	Vernacular as Traditional	Contemporary
1. Material Palette	- Cob-mud earth construction on a stone plinth - Wooden lintel/small opening by providing mould - Thatch roof with wood/bamboo purlins	- Cob-mud earth construction on RCC plinth with layer of PCC introduced - RCC lintel for openings - Thatch roof with wood/bamboo purlins

2. Methods (Newer and older) **3. Newer Adaptation and alternatives**	- Roof supported on wall by central horizontal wooden log in the center - Small openings with low sill as mud floor use as a sitting and multifunctional space - Circular/rectangular geometry so storage is as flexible as loose furniture, hence they treat it like an artifact with mud-mirror work. *"Sanduk"* - Structural members itself act as utility shelf to put their vessels that act as decoration	- RCC ring beam above the wall due to large span - Bay window with high sill as niche designed to sit near the window Glass doors to establish visual connection between inside-out. - Storage is planned so it is incorporated as a part of a wall as a niche. - Use of structural elements as a hook to hang utilities.
4. Design Principles	- Cluster is more prominent arrangement of the units are in order to have more unbuilt space between the units - Entry of each B*hunga* facing one-another - Threshold used as sitting- "*Umbaro"* - Windows have lower sill, as people sit on the mud floor, provide visual connection at eye level - Mud flooring outside the units marks their datum of the settlement.	- Meaning of cluster is to achieve more privacy - Segregation of Units - Indirect entry through semi-covered receiving space - Threshold as transition and wall culminate as sitting - Windows have higher sill as people sit near the bay window. - Mud flooring marks their formal and informal space outside their units.

The analysis of both live cases displays the adapted use of local building materials with traditional construction techniques, evidently in recent times. The key ideas of flexibility, suitability, and principles of design and aesthetics in vernacular architecture are important to investigate both now and in the future. Both architectural practices are deriving and developing methods to meet the upcoming needs of the client and the scale of the project to deal with factors such as larger span, multi-storied structure, and longevity in terms of the age of the structure, but keeping the design principles intact. These design principles include the formal planning of the house. The transition from load-bearing towards the framed structure is evident but crafted with the help of local methods, understanding the building material and its properties consciously to also last for longer. For instance, using locally made bricks for the service core by Sanshreya Studio displays their adaptation and awareness towards the need as well as the challenges of the design. The new generation of practices is also consciously involved in passing on this tacit knowledge of traditional construction methods to the next generation of architects, i.e. architecture and design students, through various means such as internships and workshop opportunities to nurture this holistic way of life. Their collaborative efforts with the educational institutions also portray their commitment to their vision and dedicated approach to spreading awareness through different outreach activities within the communities to uplift them. Waste management is also a major one of major concern addressed by the architects and has always been one of the crucial aspects of the design process.

6. Conclusions

The ways of building in the vernacular architecture in the region of Kutch, Gujarat and Kangra, Himachal Pradesh, display the use of local building materials, adopting traditional construction techniques, which is a sought-after conventional method of building even now. In this scenario, newer practices like Hunnarshala, Sanshreya Design Studio, and Design Jatra are performing a crucial role as strong mediators to pass on traditional knowledge amongst all the stakeholders, including the architect (designer), the craftsman (labour), the client, and the community, through their conscious involvement. Gaining a thorough understanding of the design principles, construction methods, and materials used in vernacular architecture, as "traditional", can greatly benefit modern architectural practices by thoughtfully integrating these elements alongside appropriate modern materials and technologies. The learnings from these practices underline and stress to carry out and passing on our value system with the traditional knowledge it provides for the act of building locally and protecting the cultural heritage not only physically but also ideologically. And, this eventually aids in evolving and retaining the regional as well as cultural identity of the place over time. This further spreads awareness within, builds and strengthens the values at four levels, as mentioned below, along with further recommendations.

SOCIO-CULTURAL: Today, the shift and replacement of traditional building materials with fashionable concrete alone is harsh but vastly practised by the villagers as an attempt to be modern, which lacks the awareness of the cultural heritage of the *kaccha makan* (unfinished house) they inhabited once. Hence, the areas are gradually losing their regional as well as cultural identity. But at the same time, the design and planning principles while building the new home in the same plot remain intact, and the conventional techniques are proven to have more potential to be functional and evolve, which also allows the community to grow within. The "new vernacular" seems to be falsely inspired by the indigenous building and construction methods, and is losing the importance of traditional craftsmanship. Hence, the idea of "modern" needs to be addressed consciously to pass on to the next generation to nurture it.

SOCIO-ECONOMICAL: The essential lesson of vernacular architecture and traditional methods of building techniques has been the ability of human creativity to construct a life of equitable comfort, elegance and aesthetics coherent with the local climate and natural resources available locally. Not to be missed, the elite class in society also perform a crucial role in their conscious choices, directly affecting and encouraging the local communities to refrain from the idea of "kaccha" (raw) and "pukka" (finished) construction and the linked association with cultural practices. Today, different forms of tourism, including rural tourism, agri-tourism, and eco-tourism, are encouraging these

vernacular traditions, promoting cultural identity through their cultural heritage, which is preserved and dispersed all over the country.

TECHNICAL: The practices follow the format of "theory-research-hands-on practice", which is innovative and has transpired to be one of the ways forward to practice self-sustainability. The crucial role of craftsmen performing the dual role of a designer and labour needs to be recognised, valued and empowered to mark their place amongst the list of stakeholders throughout the process from the conceptual to the execution stage. The above-mentioned architectural practices are inspired by the ideology of the master architects, such as Didi Contractor and Laurie Baker and are becoming mediators in this path to spread awareness amongst the community across all classes in society, especially the craftsman and their future generation.

ENVIRONMENTAL: The conscious use of local building materials, including mud, stone, slate, bamboo and wood, involves redefined construction techniques from the traditional ones to deal with the demands of the clients to withstand climate change and to attain a longer life in the future. The practices follow the format of "theory-research-hands-on practice", which is innovative and has transpired to be one of the ways forward to practice self-sustainability. The tacit knowledge that is passed on by the local communities is being understood, examined, and further developed today to fulfil these challenges, remains timeless and hence can also be termed as innovative. The principle of "bare minimum" remained the fundamental idea behind the practice of the Didi Contractor, who highly encouraged this as a self-sustained way of living with the local community and natural environment.

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Conflict of Interests

The Author(s) declare(s) that there is no conflict of interest.

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