

Transformations of Vernacular Artisan Settlements in India: Insights from Odisha

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Abstract

Vernacular settlements are spontaneous habitats that are responsive to the climate and culture of a place. Today, these habitats are transforming as a result of the use of modern construction materials. This present study is an exploration of the rural cultural landscape inhabited by the traditional artisans in India. It analyzes the changing artisan settlement and identifies the effects of such transformations.

Two villages in the state of Odisha in India have been studied: one is inhabited by the handloom weaver community and the other belongs to the traditional artisans. It employs an ethnographic study of the settlements by conducting the observation method of data collection as a research method.

It is found that the growing needs and aspirations of the community, the economic factors underlying the community's struggle for the sustenance of their livelihood, and the state authority's intention to augment the cultural value of their traditional work have manifested in terms of modern intervention into the rural fabric of these artisan villages. This has led to a shifting of lifestyle patterns, changes in the practice of the traditional professions, adoption of modern building construction techniques, unsuitable environmental conditions, and a culturally contested rural landscape.

This paper has brought out the trend in the adoption of modern building design and construction techniques and the corresponding impact on cultural identity and environmental sustainability. Suggestions are outlined for the coexistence of tradition and modernity that would enable the formation of a progressive community while being connected to culture and traditional practices.

Keywords: Transformation, Artisan, Material, Environment, Built, Rural, Odisha, India

Introduction

Artisans are integral to the cultural identity of a region. Their living, working, and social environment are interwoven and bear typical characteristics, where they create exquisite work, which is the only source of their livelihood, having immense cultural significance. Their rural landscape reflects the physical and cultural character of their everyday lives and can be evaluated in terms of time and place as they are related to each other in a continuous process of development, termination, or replacement. The type of structures used for dwelling and the form and pattern of settlement, all show the changing needs and accumulation of knowledge and techniques over different periods. The process dynamics and products involved in the evolution of these settlements are important to better understand their existence and the people who create and inhabit them.

Vernacular architecture is not to be studied simply to imitate it, but it is to be recognized for its eco-sensitivity and community character, and efforts are needed to conserve it where appropriate. Another critical characteristic of vernacular architecture is the embodiment of community values, traditions, and myths, which is inherent and deeply influences a sense of place identity and corresponding dependence and functional significance to perform and sustain the traditional practices and activities. Thus, it is imperative that greater emphasis is laid on examining the evolutionary development of the house-building process in different contexts. During different phases of development, the concern lies with the process of place-making and the products of place-making activity. These place making narratives of vernacular settlements can provide evidence to establish conceptual links between the socio-cultural identities of the place and its spatial environment and provide the context within which rational action can be taken (Macintyre, 2007).

The so-called 'development' of traditional settlements meant to describe the human act of improving, or attempting to improve well-being is being recently examined from different directions; as indicating fading culture (Bungaard, 2011), contested lifestyles, sustainability issues, and environmental impacts. These are the concerns associated with vernacular settlements under transformations. Change is inevitable as activities are fluid in space and time, and the environment is used differently at different times. However, continuity and stability in the environments have been valued, although they relentlessly change over time (Carmona, et. al, 2003). Any intervention into the physical fabric of a place irreversibly changes its historical character, and becomes part of its history, and built narratives. At this juncture, it is important to understand the changing characteristics of vernacular architecture and the inherent identity of the places for appropriate decision-making regarding development measures.

This paper examines the vocabulary of the built environment, environmental impact and adaptability, cultural identity, and sense of community in two traditional artisan villages; (1) Raghurajpur, well known for traditional *Patta* paintings and crafts, and (2) Tope and Singhpalli, inhabited by the handloom *Ikkat* weavers' community. Assessment of the contextual aspects provides input for development by reaching back to history, engaging with the present, and helping construct a coherent framework and perspective (Sandercock, 2003) to address the pertinent need of progressive and sustainable change.

This research aims to investigate the combined social, cultural, spatial, physical, technological, and aesthetic aspects of vernacular forms undergoing transition.

Its objectives are:

1. To identify the physical transformation of the built environment and understand the effects in the morphology of the vernacular setting.
2. To assess the environmental impacts due to the shift to adopting modern construction materials.
3. To examine the relationship between place identity and the changing rural fabric.

Theoretical Basis

Every human settlement can be read as multi-layered elements of signs and symbols, narratives of meanings and values, where the built environment becomes memoirs of the transition process. Researchers have explored these multilayers and brought out explanatory understandings of the physical and cultural forms of vernacular settlements. Loren-Méndez, et al., (2018) have developed an online geospatial database for heritage corridors in Spain by implementing a hierarchical multiscalar heritage characterization for assessing the complexity of heritage, avoiding the limitations of traditional heritage catalogues and databases. While analyzing the process of transition of traditional settlements, Dayaratne (2006) has proposed three models for understanding such cultural transformations in these categories of the built environment: Conventional or traditional, transitional, and global influence.

As indicated in the literature (Filep, et.al, 2014), the built environment can be discussed through the design processes involved, the development pattern, and the form and language. According to Filep, et al. the final built outcome results from the negotiation of traditional and modern techniques throughout the design process along with the pressure of development.

Dayaratne (2010) in his study on Sri Lankan vernacular architecture argues that though there has been considerable modernization of rural areas the traditional conceptualization of religious places and value attachment to rural heritage is still embedded. Although transformation is an evolving process it can be methodologically evaluated as pointed out by Hakusho (1990). Considering the characteristics that would describe vernacular architecture, Hakusho enumerates the attributes that can be used to assess trends of transition:

They are

- (1) *Owner-built/ community-built*
- (2) *Utilization of traditional technologies*
- (3) *Strong relation to local environmental context*
- (4) *Materials from local resources.*

With respect to the local environmental context and use of locally sourced materials Kant and Lakra (2023) have come out with a significant comparative finding where the vernacular house exhibits low embodied energy as compared to a contemporary modern house. There has been considerable research on changes in thermal environmental conditions and energy consumption in rural areas across different times. Mani and Reddy (2012) empirically established that vernacular settlements of India in peri-urban areas are moving away from near-zero energy vernacular architecture and practices in post-independent times by the adoption of modern building materials. Mani, et al. (2007) argue that these transitions lead to a loss of physiological resilience toward local climatic conditions and increasing dependence on electricity for maintaining comfort conditions, although the inhabitants are able to fulfill their modern aspirations. Todorovi (2012) provides an attitudinal perspective of instilling environmental ethics and responsibility for sustaining the environment that will influence the place value and commitment to the natural environment.

Studies have pointed out the importance of occupants of heritage buildings in preserving the cultural asset and the need to develop a sense of belonging and a sense of identity among the occupants and awareness among the decision-makers who decide on the interventions to be undertaken. May & Sahar (2022) suggest an emotional connectedness to the heritage setting and a knowledge base for appropriate intervention in the preservation of the architectural heritage. Tolou Del et al., (2020) established in their research that the conservation of heritage is not only an attempt to optimize and preserve the physical aspects of the buildings but also a process to identify the values with the semantic aspects that influence architectural heritage. Abdulali and ALShamari (2023) have developed a framework for evaluating the mechanism of conservative intervention and confirmed that there is a linkage between the impact caused by the conservative interventions and the different scales and typology of heritage values: missing values, added values, and neutral values. The different perspectives for assessing the transition in vernacular architecture entail a qualitative explorative approach to understanding the causes and impacts of transitions. In the past Ethnographic research has brought the understanding of cultural and functional aspects through qualitative studies. According to Egenter (1980), ethnographic studies provide a description of how the architectural language of a group employs both utilitarian and aesthetic values and attempt to understand what meaning these values produce. Oliver (2007) vividly emphasizes the connection of ethnicity, regional and local dialects with architectural language while defining vernacular architecture. Furthermore, Linam, (1999) noted that vernacular architecture is significant and unique in terms of the concept of balance of ecology and resource consumption, myth and technology, built and open, and public and private domain. In this context, Rudofsky (1965) has vividly explained the knowledge and skill of the untutored builders who demonstrate impeccable talent in fitting their buildings to their natural surroundings. According to Schulz (1971), man's essential relationship to places and through these places to the intimate space culminates in the dwelling which is one of the material evidence of human existence.

The fundamental concepts related to vernacular architecture as put forth in past literature have to be considered while understanding transformation processes. In similar lines, Rashid and Ara (2015) have drawn upon the similarities in principles and possibilities of transmission

of ideas and techniques from vernacular to contemporary or from modern to vernacular in a two-way directional process. Their findings from local architectural case studies show that their technological innovations and environmental perception and knowledge are remarkably modern. There is a need to holistically understand different dimensions of the impact of transformation in the vernacular settlement.

Research Methodology

This research employed case study method. It studied two rural settlements of Odisha, which follow the age-old ancestral creative occupational practices. The studies explore their multi-layered narrative embedded deep within, where the built environment becomes a biography of change, and evidence of the past is preserved in the layers of its spaces.

The Case Study 1

The first case study is conducted in Raghurajpur, a small village of heritage significance approachable from the Puri-Bhubaneswar main road around 14 km away from the Hindu pilgrimage town of Puri (Fig.1), on the southern banks of river Bhargavi within a quaint setting of palm groves and beetle vines. The village has a community of artisans, who produce different varieties of handicrafts items such as *Patta* (traditionally prepared cloth canvas) paintings, palm leaf engravings, stone carvings, papier mache toys and masks, wood carvings, wooden toys, cow dung toys, and tusser paintings. This village has carved a niche in the cultural landscape of India by creating a strong identity as an artisan settlement where each family is engaged with their traditional profession, making the village a realm of many art forms. There are approximately 103 households having 311 artisans in the village. Unlike other rural settlements, which are self contained within themselves without the influence of outsiders, Raghurajpur has visitors all year around from different places of India and abroad. Hence, there have been significant developmental interventions by public bodies in the village. Researchers, students, and art lovers come here to witness the living tradition of Odishan arts and crafts in the very place where it is being practiced since the 12th century AD and has evolved around the Jagannath (Jagannath temple in Puri) cult in Odisha.

The Case Study 2

The second case study is conducted in two neighboring weaver's community villages; Tope and Singhpalli in the Bargarh district of Odisha (Fig. 1). Tope and Singhpalli have 1154 and 626 numbers of households respectively. These two villages are the home to the famous handloom weaver's community, who weave intricately designed coloured fabric with their handloom units set within their dwellings. These are products of long processes, nurtured over different times in which spiritual, philosophical, and human dimensions have intertwined to yield vibrant culture and tradition that influence generations to come.

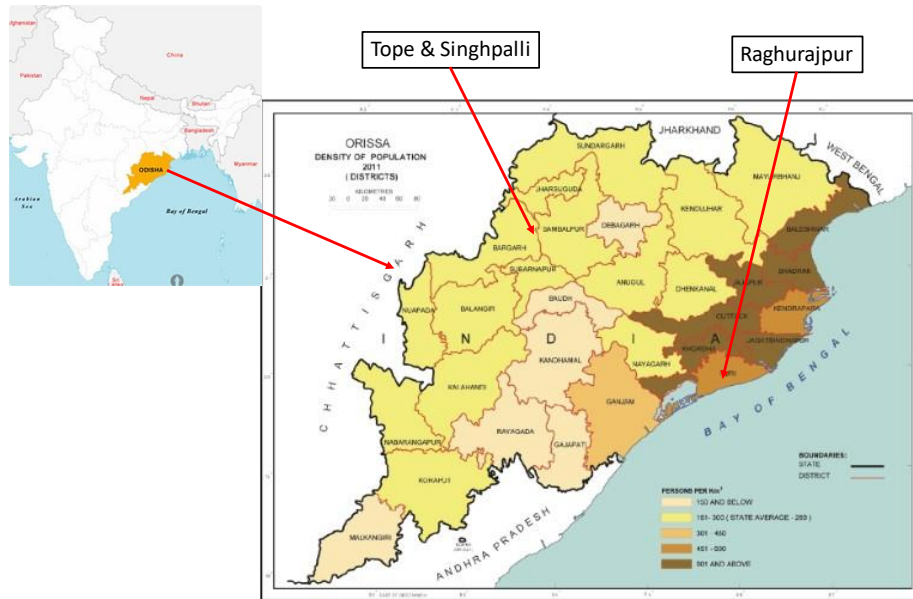


Fig. 1: Location Plan of Raghurajpur, Tope and Singhpalli

A qualitative approach is adopted, with drawings and photos used sequentially and analytically across the village streets to determine the temporal dynamics of technology and spatial characteristics. The conceptualization of the transitions is categorized under morphological, environmental, and identity themes and these thematic aspects are intensively discussed with respect to the places within the two villages.

It employed the following data gathering techniques during the primary fieldwork.

1. Non participant observation
2. Measurement data of built-up spaces
3. Unstructured interview for conducting explorative research to understand the unanticipated reality and for better assessment of the community aspirations and perspectives towards development and interventions in the vernacular context.

Findings and the Analysis

The history and traditions of the people of each region are continuously portrayed in the built environment that is today part of our cultural landscapes, constituting a heritage that needs to be preserved and appreciated along with the culture and tradition of the place.

Vocabulary of the built environment

While nurturing the unrivaled artistic heritage, the two villages have witnessed a rapid transition in their built environments, from the vernacular building construction methods to modern materials and techniques in order to fulfill the community's needs, which they primarily consider for having a secure and durable habitation.

In Raghurajpur, the phenomenon of transformation is due to two forces; internal by the residents of the village and external intervention in the rural fabric by different agencies like the Indian National Trust for Art and Cultural Heritage (INTACH) and government bodies. The ambitious initiative to develop Raghurajpur for the promotion of rural tourism has significantly contributed to the transition in the built and natural environment of the rural setting.

Raghurajpur has a linear pattern oriented on the East-West axis, which is similar to a few other villages like Birabhadrapur, a Brahmin village in the Puri district. The entrance to the village had a distinct character of public space; as an outdoor square or *Danda* as said in *Odiya* with a temple as the focal point and a later built platform, where village meetings and regular

Gotipua (a traditional dance form) performance for the visitors are held. The village has a main straight street that is abutted by dwelling units on either side, but the center of the street in the entire stretch is dotted with axially aligned temples and *Bhagabat Tungi*, which is a community space for religious discourse (Fig. 2). This forms the main spine of religious and social spaces and acts like a public space avenue within the rural setting (Fig. 3).

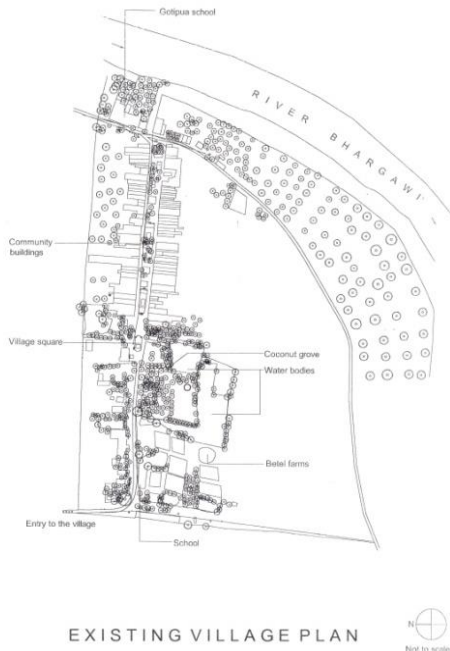


Fig. 2: Layout Plan of Raghurajpur
Source: Interim Report, Integrated development Plan of Raghurajpur (INTACH, 2002)



Fig. 3: Main Street of the village with temples dotting the central space
Source: Author

The second case study, Tope and Singhpalli primarily inhabited by the weavers' community has an organic settlement pattern with sprawling agricultural farmland around the village (Fig. 4). The main village street of Tope winds with a certain degree of linearity within the closely aligned dwelling units and culminates with a school and panchayat office. There are few houses of different communities like potters and farmers scattered beyond the village near the crop field. Raised verandahs of dwelling units feature in only a few dwellings in the street, unlike Raghurajpur where the street is lined with houses having similar types of entrances (Fig. 3). Although Tope and Singhpalli have cultural significance, there are not many developmental interventions from the public authority.

The transformation in the spatial environment is brought about by the use of modern building materials mostly in the construction of individual dwellings and a few public amenities like the school, temple, and community building. The street edge is defined by houses with earthen tiled slope roofs intervened by occasional flat roof houses.

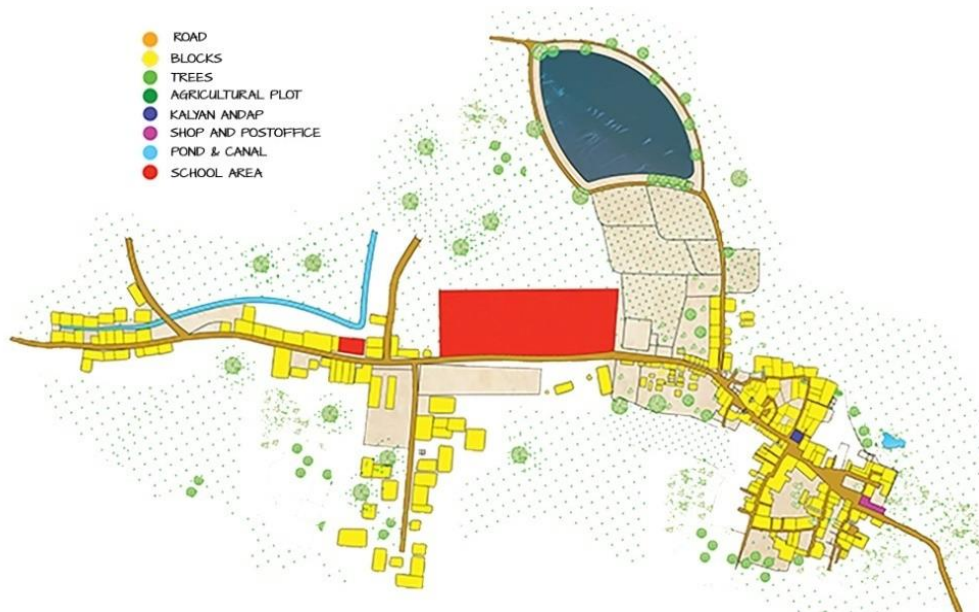


Fig. 4: Layout plan of Tope village.

Source: Author

The modest scale of the street in these three villages is characterized by the single-storied houses and a few with the newer addition of the first floor which defines the edge of the street. The main street is abutted by continuous stretch of attached dwellings that define the movement pattern (Fig. 5). The continuity of the street wall and the height-to-width ratio determine the sense of spatial enclosure and narrow alleys create interesting pattern of light and shade (Fig. 6).

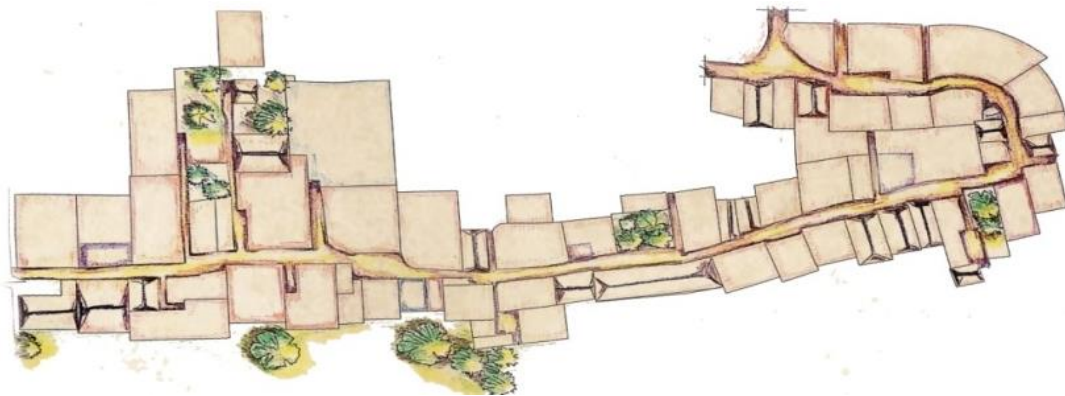


Fig. 5: Layout plan of Singhpalli

Source: Author



Fig. 6: Weavers' dwellings abuts narrow lanes in Singhpalli village

Source: Author

Transitions in the Built Fabric

Table 1. Pre and Post Transformation in the Built Environment

Source: Author

Attributes	Traditional Village Before Intervention	Modernising Village Post Intervention
Morphology	Organic pattern of settlement with compactly aligned dwelling units along narrow winding lanes and by-lanes.	<ul style="list-style-type: none"> Organic pattern is retained. Three-dimensional form of the street is altered with the construction of additional floors on the dwellings.
	Narrow winding muddy street.	Narrow winding paved street
	Streets perceived at the human scale	The human scale of streets retained
	Homogeneity in the character of the street facade	Hybrid characterization of the street facade
	Continuity in roof profile	Discontinuous roof profile. Thatched roofs intervened by double-storeyed RCC roofs and metal sheet covered sloped roofs
Functions	Slow informal activities on the pedestrian street	Community activities are interrupted by the movement of motorized two-wheelers on the street.
	Streets and adjoining open spaces were used for drying painting cloth canvas (patta) in Raghurajpur, drying dyed threads (Ikat) for handloom in Tope village and also for drying food grains.	Street cannot be used for these activities due to the movement of motor vehicles. Adjoining open spaces are used for these activities.
	Minimal private realm where street is perceived as community living places with verandahs defining the edge of the street	The community activities are continuing in the open spaces available along the streets.

The main street of Raghurajpur is subjected to substantial interventions in a bid to develop the village under the rural tourism promotion project. The degree of enclosure and spatial containment has changed due to the addition of new structures. The intervening constructions have also reduced visual connectivity between the two rows of dwellings. The street width will subsequently limit the sky view if the present trend of transition continues without considering the impact. The scale of the street in these villages has not altered

considerably as the physical extent of the boundaries of the dwellings along the road has not changed. The street is visually dynamic as the horizontal flow of space has not changed significantly. The principal aesthetic concern of a built environment is the manner in which the facade defines the limits to a space and how it is viewed from the space, which is the street in the present case.

The skyline has become somewhat irregular not due to a remarkable change in the heights of the buildings, but because of the periodic transition in the profile of the form of the roofs from sloped thatch roofs to flat RCC roofs. Although the continuous outline of the street is not broken due to the compact arrangement of houses, visually the street scene is somewhat modulated into a number of discrete sections because of the different modern construction materials which are intruding into the rural fabric (Fig 7). The texture of the street facade has undergone both visual and tactile changes due to the usage of modern construction materials like plastered brick walls and reinforced concrete and metal roofs. Laterite stone structures made by public authorities in Raghurajpur, and brick and RCC constructions within the limited space have increased the built mass, and have created a counterbalance in the visual experience with the improper usage of these materials. Earlier houses in both Raghurajpur and Tope were made of adobe and wattle daub, and few dwellings had cob walls.



Fig. 7: Transition in the profile of roofs of dwellings abutting the street

Source: Author

Typical Dwelling

Table 2. Dwelling units - Pre and Post Transformation

Source: Author

Attributes	Traditional Village Before Intervention	Modernising Village Post Intervention
Layout	Layout - Narrow linear houses with the household activities spilling over to the outside veranda	Layout - The house is divided between the family members with a partition wall along the longitudinal direction.
Materials	Locally available materials, mud, bamboo, wood, straw, long grasses and cow-dung Brick and mud walls, thatch roof, flat tile roof supported on wooden rafters,	Materials - Both locally available materials and modern construction materials. Addition of brick walls, RCC columns, RCC roofs, and metal sheet covered sloped roofs
Interior	Spaces arranged in a linear direction	The width of the interior spaces is reduced. Additional rooms are created on the upper floor for sleeping spaces.
Activities	Painting, craft making, and handloom weaving are done inside the house.	Same as before

The village acquires its image and cultural identity from the narrow linear dwellings lining the street, which are not only private places to live but also working spaces for the artisans. These dwellings nurture the traditional roots and make the artwork visible, provide settings for activities, remind people what these activities are, signify simplicity, and determine living patterns. Some of the houses are more than 150 years old. The houses are tightly packed having a common wall with their adjacent house. The territoriality of each house is defined by a raised colonnade verandah, approachable directly from the street through a flight of steps. The sequence of space is along a linear axis, one space leading to another, very compact and narrow with streaks of daylight flickering through the narrow open courtyard (Fig. 8). The house forms are simple and devoid of any ornamentation, except the traditional paintings on the walls of almost all the houses, which characterizes the village as an artisan habitat. The width of the dwelling units is very narrow and is long towards the backyard without any side setbacks for the houses to change their form along the width.

Any division in the family further reduces the width of the house by dividing it along the lateral direction. Partition walls are constructed that divide the dwelling unit in a linear direction and create narrow living spaces.

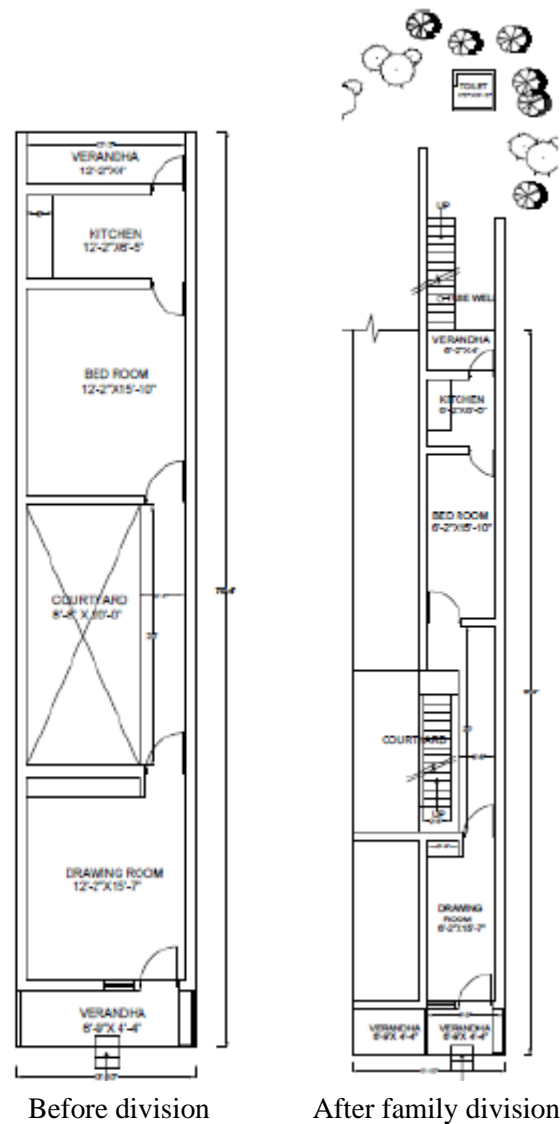


Fig. 8: Plan of dwelling unit in Raghurajpur
Source: Author

The traditional dwellings in Bargarh village are compact: made of mud walls, and sloped roofs made of bamboo rafters and earthen tiles. Some houses have flat roofs with slate stone slabs laid on wooden joists. The dwellings have interesting space arrangements with the weaving work areas on the ground floor along a small narrow courtyard, and a kitchen on the upper level accessed by narrow mud stairways (Fig. 9). The kitchen area is in a cozy attic space, good enough to accommodate both cooking and dining activities. The weaving area is the nucleus of the house. Spinning is done within the house near the courtyard and thread dyeing is done in common open spaces (Fig. 10). The usage of spaces is quite interesting as they are optimally used, conveying the message of simplicity and promulgating minimalist design concepts.



Fig. 9: Weaver's Dwelling units in Singhpalli
Source: Author



Fig. 10: Verandah and courtyard used for cotton spinning and dyeing activities and indoor spaces for handloom weaving unit
Source: Author

Environmental Impact and Adaptability

Table 3: Environmental Condition - Pre and Post Transformation
Source: Author

Attributes	Traditional Village Before Intervention	Modernising Village Post Intervention
Thermal environment	Cool indoors with natural ventilation Lower heat island effect	Increased indoor temperature Hotter micro-climatic conditions
Green cover	Less built footprint with large tracts of vegetation cover	Reduced green cover with increased built footprint and concrete hard surfaces
Water	Ample surface water (river) and underground water available for household use and irrigation.	Drying bed of river Bhargavi and receding underground water level.

Until the late 20th century, the villages had not received enough exposure and the artisans lived with their traditional profession. The community lived on minimum resources for basic survival within the natural settings of the village with negligible demands on energy and process-intensive materials for sustenance. With government intervention, increased affordability, and exposure to urban lifestyles, the aspirations of the villagers are responding to modernized living.

A steady transition from traditional local-materials-based buildings to energy-intensive material-based dwellings is observed in these villages. Earlier building materials used were mud, bamboo, thatch, stone, and wood, which were locally available. Walls and attic roofs of some of the houses which still exist used wattle daub construction, where mud reinforced with bamboo and wooden twigs is used as a composite material and is made by the community in response to prevalent climatic and environmental conditions (Fig. 11). These vernacular dwellings regulate the indoor thermal environment and provide adequate occupant comfort without the need for modern amenities like fans. Over the past decade, transitions in their dwellings are seen primarily in the adoption of modern building materials, while there has been no significant alteration in the basic form of the dwellings. The thatch and earthen tile roofs are replaced by RCC roofs and metal sheet roofs, pre-cast RCC joists are used in place of wooden and bamboo rafters for supporting stone covering for roofs, and mud walls are replaced by kiln burnt bricks or fly-ash bricks. The dusty muddy streets have given way to paved concrete roads. From the survey conducted in the village, it was observed that there is a unanimous response of increasing thermal discomfort within the altered dwellings and outside, due to increased built footprints and reduction in the natural environment.



Fig. 11: Traditional Building construction techniques used earlier for the houses in the villages

Source: Author

The visual and physical transition of the village has brought distortion to the built and natural environment of the village. However, the changes in the village have been positively viewed by the community with respect to the functional adaptation of the newly built spaces. The dwelling units are adaptive to the functional and lifestyle transitions. In Raghurajpur, the

traditionally treated cloth canvas used for *Pattachitra* painting was earlier dried in front of the house on the street before being painted. However, with the change in lifestyle and movement of two-wheeled vehicles on the street and the transformation of the sloped thatched roofs to flat RCC roofs, the terrace is being used for all drying purposes.

Cultural Identity and Sense of Community

Table 3: Perception of place - Pre and Post Transformation

Source: Author

Attributes	Traditional Village Before Intervention	Modernising Village Post Intervention
Sense of place	Strong sense of place affiliated with the community spaces - village chowks, pond, <i>Chabutaras</i> (platform for social gatherings)	Moderate sense of place Incoherent addition of built spaces and materials causing disruption of the modest grounded vernacular setting
Place identity	Strong identity - Unique elements in the community spaces and dwelling units <ul style="list-style-type: none"> • Temples • <i>Mandapa</i> (raised platform for performance) • <i>Toranas</i> (Traditional Arches) • Living tradition of patta paintings, crafts and weaving that identify the villages 	Place identity is sustained in the villages with the existence of unique elements and living traditions of artisans still continuing to impart a distinctive character to the villages. <ul style="list-style-type: none"> • Likely to weaken over a period with inappropriate addition of built spaces and the use of incompatible materials and superficial aesthetic embellishments to fulfil personal and government aspirations.

The narrative of a place is embedded in the built edifice which can be read as a multilayered text in its signs and symbols. The cultural identity of the villages is preserved, as the functional dependence on the place and the sociocultural identity of the communities of the place is still retained (Fig. 12). The notion of identity is positively influenced by infusing plurality and inclusiveness and ensuring well-being. Place identity is retained not entirely through its built environment, but, because of its strong socio-cultural identity as an artisan village, where most of the households are engaged in the traditional art and craft profession.



Fig. 12: Traditional method of weaving and pottery work practiced in the village

Source - Author

Rootedness and a conscious sense of association or identity with a place can develop from the personalization of spaces and elements even in the community spaces, modest and low-profile architectural motifs, and small-scale design details that contribute to the symbolism and significant spiritual and psychological attachment. The presence of designed *Torans* (small arched gateways with intricate floral carvings), *mandaps* and temples which are inherent characteristics of the village, carved motifs on the front doors, and the village pond, all contribute to preserving the sense of place (Fig 13). The narrow facades with the traditional paintings on the external walls of most of the houses in Raghurajpur display the artistic skill of the inmates and add meaning and imageability to the street and the community domain. However, recent developments and construction activities are leading to the gradual loss of familiar surroundings, as these contemporary buildings have a relatively weak sense of place.

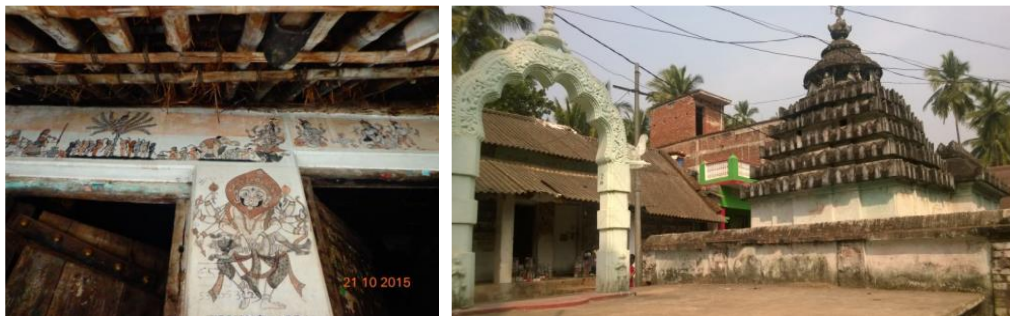


Fig. 13: Traditional *Patta* paintings, shrines, architectural motifs and *Torans* preserve the place identity in Raghurajpur
Source- Author

The study shows that both the artisan villages are being shaped by continuous attempts of addition and alteration in the built fabric while responding to technological, economic, social, and cultural changes. This has posed an irreversible impact on the traditional setting of the place, but at the same time, the built fabric has also accommodated the history of the place, its traditional practices, beliefs, and customs.

The transition of the villages has occurred with the involvement of interventions into the existing rural environment through two processes:

- a) with the creation of new facilities by the government bodies and
- b) with the transformation of the vernacular dwellings brought about by the villagers to fulfill the aspiration and requirement of a having a strong permanent house requiring less maintenance.

The creation of new places has come up with building public spaces:

- a) with different functions to promote the traditional art and craft of the village and encourage rural tourism
- b) spaces to enhance the community life of the villagers.

Inappropriate placements

The interventions in the vernacular settlements have led to the inappropriate placement of new buildings by joining up within the existing built space and amenity developments with the disposition of different built volumes. This has altered the proportion and rhythm of the built edge of the street and breaks the traditional grain of the rural setting. Inconsistency in the proportion of elements in the facade, such as the windows and verandahs which do not complement the existing proportion of solid and void has led to the incoherent transition. However, the continuity of the existing street patterns and unchanged block/plot sizes of dwelling units help to establish harmony to a certain extent.

Change of materials

Materials provide a building with colour and texture. The type of material selection can affect weathering of the building, detailing, visual interest, and facade patterning. Laterite and adobe mud-plastered walls and thatch roofs typically used earlier in the vernacular dwellings of Raghurajpur displayed the above-said characteristics by effortlessly blending with the surrounding agrarian environment, and also demonstrating the art and crafts of the village. The proper use of material can sharpen or soften differences between the various parts of the building and the relation between adjoining structures. However, the newly built additions and alterations in the village have not been sensitively done and impacted the harmonious integration to achieve this sense of unity. Materials also help establish local distinctiveness. Laterite stone has been extensively used in building community spaces in Raghurajpur to attain this effect and create a sense of identity in the place. But the improper usage of different modern materials like cement, RCC, and the plastered brick wall does not integrate visually either with the laterite works or the traditional setting of the village.

Conclusion:

This paper concludes that there is a gradual invisibility of the built forms of the earlier period of the vernacular settlement and as a matter of fact a denial of the valid architectural expression which can still exist.

Raghurajpur is impacted by considerable intervention within the village. The loss of familiar surroundings can be distressing, particularly when experienced over a short period and on a large scale. However, the villagers were tentatively agreeable to the interventions in the rural landscape brought by the public bodies, as they considered this a means of development of their village, promotion of their artistic heritage, and upliftment of their living standard. They have tried to adapt to these changes and orient their activities accordingly. Transformation of the two weaver villages has occurred at individual dwelling levels with upgradation in the use of conventional modern materials and construction techniques. The morphology of the settlement has not significantly changed although there is a requirement of social amenities and place for handloom production. It is observed that residents are motivated towards modern intervention to meet their personal aspirations.

In order to strengthen the process of change, the need is for environments and communities capable of adaptation to these changes, which can accommodate the existing social and cultural systems within the ongoing transitions without disconnecting from the past heritage. Redevelopment and preservation are to be balanced in a way that reflects the history and tradition and inserts new intervention that enhances the past and ensures the wellbeing of the community. In this respect, it can be pointed out that while the designers and decision-makers may have a relatively short-term involvement in the development projects, the created environment is likely to be used over the long term. Long-term issues of environmental sustainability, preservation of community culture and rural character, and at the same time resilience of the built fabric and adaptability of the settlement need to be considered through appropriate institutionalization and legislative system of enforcement in the entire rural development activities.

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1. Students of 2020 BArch Batch, Veer Surendra Sai University of Technology, Burla
2. Sanjana Mohapatra, student of 2016 BTech Batch, Indian Institute of Technology, Kanpur

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