

# Changes in Culture and Architecture from Vernacular to Modern: M.P., India

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## ABSTRACT

*India is known for its rich cultural heritage. The culture plays an important role in defining the architecture of a place or people with time. Madhya Pradesh is one of the states of India. The objective of the paper is to study the changes in culture and architecture from vernacular to modern of Madhya Pradesh. Vernacular architecture has been evolved through a process of trial and error for ages. In Methodology the vernacular and urban dwellings are documented and analyzed on various parameters of culture and architecture. The dwelling of potters and bamboo workers are selected from vernacular and urban settlement. The two typical dwelling from BHEL, Bhopal is selected from an urban settlement. The result focuses on influences of urbanization and globalization which brought threat to cultural identity. The urban settlements are designed according to the economic status of the residents without considering their culture. The analysis is to adapt the appropriate technology using locally available material and construction techniques for a sustainable development. It requires an innovative and creative approach to integrate vernacular into the modern architecture. The paper concludes by learning and appreciating the principles of vernacular architecture and integrating them with the contemporary knowledge and technology.*

*Keywords: culture, architecture, vernacular, modern, sustainable development*

## INTRODUCTION

Madhya Pradesh is one of the states in India which is centrally located. It is also known as heart of India due to its geographical location. Bhopal is the capital of Madhya Pradesh was formed in 1956. The border of this state touches five states: Gujarat, Rajasthan, Uttar Pradesh, Chhattisgarh and Maharashtra. The influences of these states are prominent in zones and architecture of Madhya Pradesh. Its culture can be divided in four zones such as Bundalkhand, Baghelkhand, Malwa and Nimar. Each zone has its own cultural identity such as language, dialects, customs, rituals and beliefs. The state is famous for its tribal arts and crafts. As per 2011 census of the state the population was 72 million and the tribal population is approximately 20 % of the total population.



**Figure1** Map of India



**Figure 2** Map of Madhya Pradesh

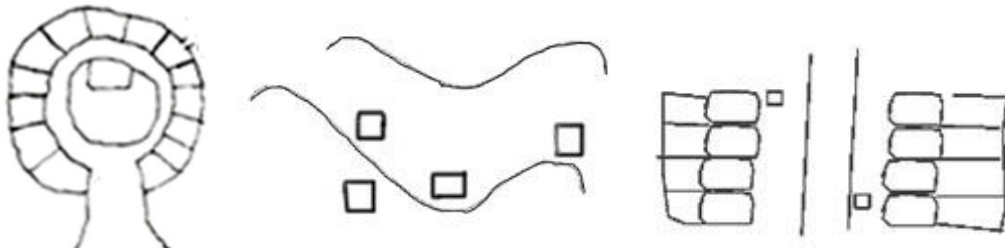


**Figure 3** Map of Bhopal city

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## CULTURE AND ARCHITECTURE OF MADHYA PRADESH

The tribal and folk traditions of Madhya Pradesh are reflected in the vernacular architecture. The state is known for its visual and performing arts, these art forms are closely associated with their beliefs, customs, religion and values. The singing and dancing are part of their day to day life. It is a community activity performed each day after the work to relax and enjoy. These activities have evolved the necessity of a community space like a courtyard or chaupal in their settlement pattern. These patterns resulted in a strong social binding within the community. Each tribe has its own way of settlement pattern on the basis of their culture and lifestyle like Saharia has circular, Bhil has scattered and Korku has linear. The central space in Saharia is 'chaupal' where grandparents chat and look after grandchildren while the parents are working on fields.



**Figure 4** Circular pattern, Saharia **Figure 5** Scattered pattern, Bhil **Figure 6** Linear pattern, Korku

Madhya Pradesh is famous for its traditional crafts like bamboo, wood, pottery, painting, metal casting, terracotta and textiles. The sarees from Mahaeshwar and Chanderi are famous for weaving whereas Bagh and Ujjain are famous for printing. The designs are evolved and inspired from the surrounding environment. The weaving pattern in Maheshwari sarees 'Laharia' is most dominating which is inspired from the holy river Narmada. These patterns of textiles are also reflected in the vernacular architecture. The sculpture and murals in the houses are not simply for decoration but are part of their rituals and beliefs. During the festivals and rituals the murals depicted on the walls are Pithora, Sanjha and designs on the floors are Mandana, Alpana and Rangoli. The tribals adorn their roof tiles with animals, human images and some figure which have something to do with witch-craft and evil spirits. Horses occupy a significant status in tribal life as symbol of power and force. It is depicted in different forms in murals, sculpture and even in the structural members of the built form. The bas relief figure of birds, flowers, trees and animals are depicted on the interior walls of houses. The clay figures are prevalent to mark both auspicious as well as inauspicious occasions. The paneled doors of single plank and wooden pillars are carved with the motifs of flora, fauna and geometry designs. The Bas relief figure of animals, birds, trees, flowers and god-goddess are depicted on the interior walls. The trees are integral part of a house like a Tulsi chura in middle of a Hindu house, they also have medicinal values.

### REFLECTION OF CULTURE IN ARCHITECTURE

The communities of potters, textiles, printer, weavers and bamboo workers are well placed in their native places like textile printers in Bagh; weavers in Mahaeshwar, they have their own settlement pattern as per their trade. When they come to a city in search of employment they have to adopt a new trade or either continues with their own. Their cultural identities are well defined in the traditional settlements in their built forms, decorations and lifestyle. The settlement of Bhil or Gond tribe can be easily identified through these identities.



**Figure 7** Tribal house



**Figure 8** Bamboo workers



**Figure 9** Gond painting

## TRANSITION FROM RURAL TO URBAN

In Bhopal there is a planned urban settlement BHEL, a township developed for the workers. The planning of the settlement is done on the basis of economic status of the workers from one bedroom unit to four bedrooms unit. The township is designed with facilities like schools, colleges, sports complex, market places and other amenities. The spaces are provided for their religious and community activities although a township developed for the secular and democratic society as per Nehru's vision. There is no such defined culture or identify of the settlement. It has a concept of global village which has a similar character of any other planned city of India. The cultural identities are vanishing from the modern cities. In the urban planning there is no place for traditional settlements and vernacular patterns. Parallel to this industrial development there are also traditional crafts and trades which are integral part of the society, for example a refrigerator could not replace an earthen pot in an Indian house. When a pot is brought in the house, a ritual is performed to fill the water. This shows that the potter is an integral part of the society and the tradition continues in this manner.

## METHODOLOGY

The vernacular and urban dwellings are documented and analyzed on different parameters of culture and architecture. The dwellings of Potters and Bamboo workers are selected from vernacular and urban settlements. The dwellings of workers from BHEL Township, Bhopal are selected from an urban settlement. The parameters of changes in culture are characteristics, aesthetics, planning and community living. The parameters of changes in architecture are site planning, response to climate, material, construction method & techniques and cost effectiveness.

## VERNACULAR SETTLEMENT OF POTTERS (KUMAHAR)

Potters community lives in separate clusters in village settlement due to their work culture. A traditional dwelling of potters at Damnod, District Dhar, Madhya Pradesh is selected for a case study. In the dwelling the spaces are required for storage of raw material and finished products, preparation of clay, creation of pots, roof tiles or bricks and firing. In the front there is an open space for working and selling and on the backyard for private space like washing, bathing and other household works. The enclosed spaces are used for sleeping, cooking and living. The toilets are not attached with the dwelling. A separate room for donkey is provided. These communities are associated with ceremonies of birth, marriage and death. The three to four generations live together which forms a strong social binding. The walls are constructed by rammed earth or brick masonry with mud mortar. The brick piers or wooden post are the vertical structural members. The attic is made of bamboo matting with mud mortar or wooden planks and is used as storage space. The stone slabs are rarely used because of site conditions. The roof consists of rafters, purlin with the covering of country tiles. The decorative figures of bird or animal are placed at the ridge. The tiles are moulded and casted or made on potter's wheel. The plastering is done by mud plaster, red clay, white clay and yellow ochre. The flooring has rammed earth covered with cow dung. The wooden door and windows are double leaf. The niches are used for storage.

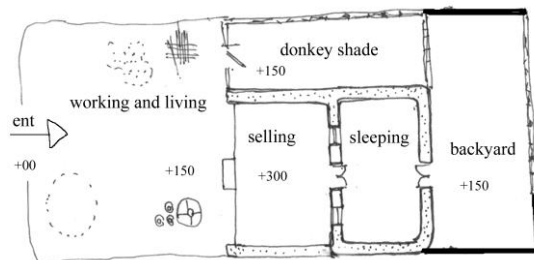


Figure 10 Plan

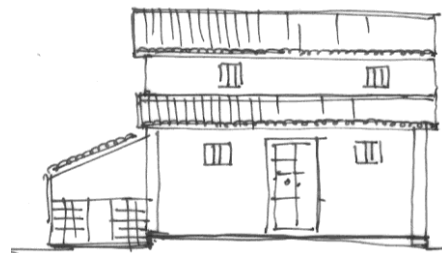


Figure 11 Elevation

When they migrate to cities, they do not have space to settle down as per the work culture. Therefore, they are forced to live on the "eyeshores", 'Jhuggis' or on the pavements. In the planned residential zones, the firing is not allowed where such living and working can be performed together.

The potter's community residing on the pavements of Link Road No.3 in Bhopal is documented. There is a planning proposal for resettlement for these dwellers under JNNURM, which is a multistoried housing in the same locality. In the new dwellings they cannot live and work per their work culture. If they are not given an opportunity to work, they are forced to switch over to another trade. As a result this craft will slowly vanish from the society.



**Figure 12** Roadside settlement



**Figure 13** Living space



**Figure 14** Working space



**Figure 15** Selling space



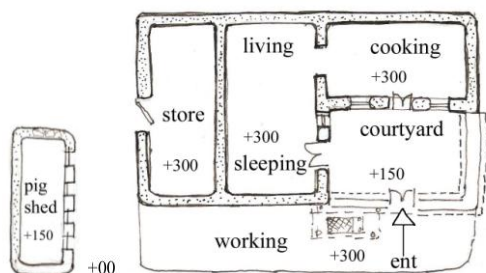
**Figure 16** Interacting space



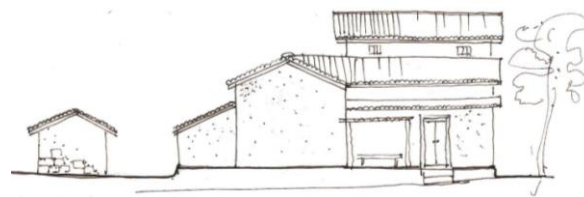
**Figure 17** By new settlement

### VERNACULAR SETTLEMENT OF BAMBOO WORKERS (BASOR)

Bamboo workers community lives close to the forest. The Basods are the people belonging to community of bamboo craftsmen who are traditionally dependent on bamboo for their livelihood. They are mostly engaged in construction work like scaffolding or temporary structures. Variety utility items are made like furniture, basket, ornaments, musical instruments, effigies, totems etc. A traditional dwelling of bamboo worker at Churhat, District Satna, Madhya Pradesh is selected for a case study. They have living and sleeping spaces along the courtyard and the working space is outside the courtyard in front of the dwelling. The courtyard is used for household works, storage space for raw material and a pig house adjacent to the dwelling. This community is also closely associated with the society, when a girl is married; the essential utility items are given to her in a basket called 'pitara' or 'dori'. It is very auspicious. The walls are made of thick bamboo matt covered with mud plaster, thick bamboos are used for vertical support. The attic floor is made of bamboo mating, covered with mud plaster. The roof consists of wooden trusses, rafters and purlins of bamboo and covering of country tile or thatch. The mud is used for plastering; flooring is done by rammed earth, covered with cow dung. The timber doors and window frames with bamboo shutters, bamboo jail used for lighting and ventilation.



**Figure 18** Plan



**Figure 19** Elevation

This community is residing on the pavements of Link Road No.2 in Bhopal. In the similar way, for resettlement for these dwellers under JNNURM, a multistoried housing is provided in same locality, which is not as per their work culture and will result in vanishing of the craft from the society.



**Figure 20** Roadside settlement



**Figure 21** Living space



**Figure 22** Working space



**Figure 23** Selling space



**Figure 24** Interacting space

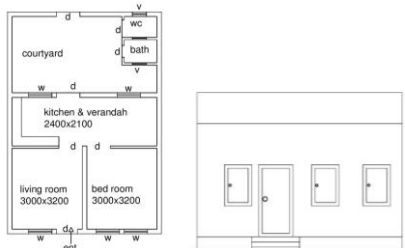


**Figure 25** By new settlement

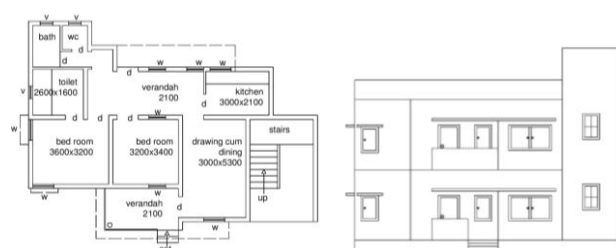
These communities have a tendency to call his family members or relatives when one gets an employment in the city. They start living in close vicinity; form a community, quite similar to the village pattern. This result in the formation of basti's (informal settlement) like potters basti, basoor basti, lohar basti etc. and are named after their trade. They face hardship in daily life; their biggest strength is social binding. Similarly the construction labors also form basti, named after their state as Chhattisgarhi basti, Orriya basti etc. Their lives are challenging; even a birth or a death can take place at the site. Sometimes they come across serious incidences like Gas tragedy, Bhopal in 1984, the residents of Orriya basti were among the victims. It was one of the biggest industrial disasters; lakhs of people lost their life.

### URBAN SETTLEMENT IN BHEL TOWNSHIP, BHOPAL

This township has been designed for an organized sector for industrial workers with modern amenities and facilities. It is a RCC framed structure, use of modern materials and construction techniques, technical experts, skilled labor were the prime concern. There is monotony in form and character which has similarity with any other planned urban settlement in India. The dwellings are designed as per the economic status of the worker. There is not a defined character and does not reflect a particular culture. Hence there is a change in living pattern and lifestyle. We have selected two type of dwelling units of the township, Type A and Type C. Type A is one bedroom unit with living room, kitchen, verandah, courtyard with bath and wc with an area of 454 sq ft. Type C two bedroom unit with two verandahs, kitchen, one common toilet and one attach toilet with an area of 883 sq ft.



**Figure 26** Plan and Elevation of 'Type A'



**Figure 27** Plan and Elevation of 'Type C'

## ANALYSIS

**Table 1. Parameters of Changes in Culture and Architecture**

<b>Parameters of changes</b>	<b>Details</b>	<b>Vernacular Architecture</b>
Culture	Characteristics	Different cultures of tribal and folk are well defined.
	Aesthetics	Murals, painting, sculpture are integral part of architecture.
	Planning	Settlement planning as per their lifestyle like circular, squatter and linear.
	Community living	Choupal, ota, chowk, courtyard for social interaction. Strong social binding.
Architecture	Site planning	Planning as done as per topography and landscape.
	Response to climate	Plan form and built form are evolved as per the climatic conditions of the region.
	Materials	Locally available material like stone, mud, bamboo, timber and lime are used.
	Stone	It is used in masonry, roof, flooring, in-built furniture, Chajjas and Jharakhos are provided for shading.
	Mud	Rammed earth, adobe, mud mortar used in random rubble masonry, helps in acoustics and heat resistant.
	Bamboo	Because of strength and flexibility widely used as structural skeleton, roofing structure, composite construction and utility items like jaails, baskets etc.
	Timber	Used as a structural component, in the construction of beams, rafter, trusses, doors, windows and furniture.
	Lime	Used in brick masonry as a binding material, for plastering and fresco painting.
	Brick and Terracotta	Brick is used for masonry walls, piers, jaalis, etc. Terracotta is used in roofing tiles, roof gutters, pottery.
	New materials	Adaptability to new material.
	Cost-effective	Because of locally available material, saves the cost of transportation
<b>Parameters of changes</b>	<b>Details</b>	<b>Modern Architecture</b>
Culture	Characteristics	Universal characteristics, no reflection of local culture
	Aesthetics	Contemporary art is depicted.
	Planning	People live in isolation, less interaction with others, no place for local arts and crafts.
	Community living	Cultural hubs, sports complex are interaction spaces, intimate relationship and social binding is less.
Architecture	Site planning	Planning is as per the economic status of the user like HIG, MIG, LIG and EWS.
	Response to climate	Eco-friendly materials are in market but are expensive.
	Materials	The market ones are given priority than local ones.
	Stone	With modern techniques it's used in a better way.
	Mud	Rammed earth, adobe are used in modern design.
	Bamboo	It is used as a new material in modern construction.
	Timber	Used for doors, windows and not as structural member
	Lime	It is rarely used, limited to conservation
	Brick and Terracotta	Brick is used for masonry walls, piers, jaalis, etc. Terracotta is used in roofing tiles, roof gutters, pottery.
	New materials	Adaptability to new materials is more
Cost-effective	Material and transportation cost are high.	

Source: Author

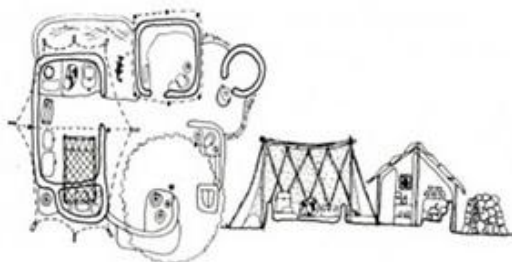
## RESULTS AND FINDINGS

The vernacular dwellings have a special character that the spaces are multifunctional and each craft requires a different pattern of spaces. The dwellings are designed by keeping in mind the future expansion. The form of a building is evolved from its functions. Architectural characteristics are defined by their work culture. Pottery is a traditional craft which transfers from one generation to another. So it is continuously expanding as per their requirements hardly any change is seen in the living pattern and lifestyle. Some of the potters migrate to city for employment. Thus, migration is a major problem of urban settlement. The planned housing is defined by the economic status of the user. The modern material are used which are changing with new construction methods and techniques. In vernacular there is a subtle change in material and character. The acceptability of new material and technique is less. Therefore, they have a specific character and lifestyle. In urban settlements the changes are easily noticeable; acceptability to new material and techniques is high. A new character is coming up which has no relevance with the vernacular, it has a global character. The data collection and observations there is no space provided in the urban planning for traditional craft like potters, bamboo workers, blacksmith and weavers etc. which are an integral part of the society. Hence in the urban planning the provisions for these settlements should be provided. The research can give vision to policy makers, planner, architects to look into the traditional crafts and trades, understanding the vernacular traditions and incorporating them in the contemporary planning. The impact of globalization has threatened traditional and cultural values by the forces of economic, cultural and architectural homogenization. This has brought disregard for traditional environment and often considered as a symbol of poverty and backwardness. In the race of modernity, values, beliefs, culture are removed from the society. The steps towards sustainable cities are taken at various level such as Earth Summit, Agenda 21 at the international, JNNURM at national and other initiatives include National Habitat Mission, National Action Plan for Climate Change, Water Mission, Energy Efficiency Mission and so on. (Tipnis, 2012)

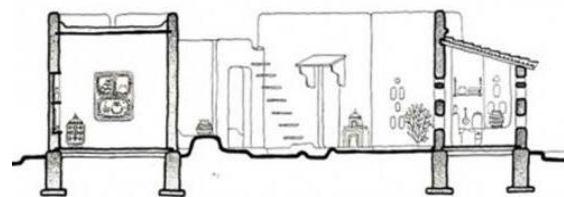
## INTEGRATION OF VERNACULAR AND MODERN IN THE CONTEMPORARY DESIGN

Vernacular traditions lead a way towards the sustainable built environment. The valuable lessons from vernacular can be integrated with the modern to produce sustainable designs. Vernacular traditions can also be used as a design tool for slum re-developments. The designing of these settlements need understanding users' way of life, social and cultural values. LIC housing by Charles Correa, Anandgram by Kamath Design Studio in India are few examples of integration of vernacular and modern. Architects like Louis Kahn, Lourie Baker, B.V. Doshi, Shirish Beri, Revathi and Vasanth Kamath, Satprem Maini have incorporated the principles of vernacular traditions in their contemporary buildings (Tipnis, 2012).

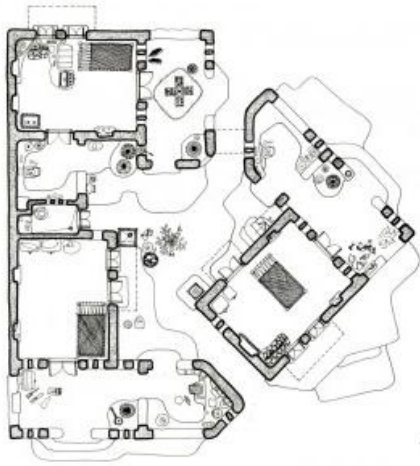
Anandgram in Shadipur, Delhi is selected as an example of resettlement. It is designed by Kamath Design Studio, Delhi, India in 1983. Architect Revathi and Vasanth Kamath their work is a creative synthesis of attitudes and technologies into an aesthetic habitat and a way of life. They believe in using natural resources and utilize them to the most and are on a mission to substitute concrete, cement and energy-consuming systems with sun, water, wind and soil. Ecology must be understood to encompass both nature and culture (kamathdesign.org). The settlement is designed for traditional community of performing artists and craftsmen in their own traditional pattern by integrating values, customs, rituals, beliefs and lifestyle. The challenge was to provide the built-fabric in relation to the urban form. It is one of the best examples of reflection of culture in architecture in the contemporary design.



**Figure 28** The change in unit after 30 years



**Figure 29** The section through a cluster



**Figure 30** The detailed plan of a cluster



**Figure 31** The resettlement plan

## CONCLUSION

The changes in culture and architecture are reciprocal. The impact of one is reflected on the other. India's rich cultural heritage is vanishing due to the influence of urbanization and globalization. In order to protect and conserve our rich cultural and architectural heritage the elements of vernacular should be incorporated in the contemporary planning and architecture. The provision should be made to incorporate vernacular architecture and traditional knowledge in the policies. The policy makers, planners and architects should consider this in their work for betterment of society. The paper concludes by learning and appreciating the principles of vernacular architecture and integrating them with the contemporary knowledge and technology.

"Quality of life is enhanced through good architectural design which responds to the needs and wishes of users and use of natural materials and good urban design which allows creation of green spaces and reduction of noise and pollution." Birkauser, (Tipnis, 2012).

## ACKNOWLEDGMENTS

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## GLOSSARY

**Chaupal:** denotes a common meeting place in a village which is owned by the community.

**Bhil:** one of the main tribes lining in the Jhabua and Dhar region.

**Dwelling:** is the name given to a house form or for living somewhere.

**Jaali:** lattices made of bamboo, grass and clay, used on mud houses in Sarguja, Raigarh.

**Pithora:** votive wall painting made by the Bhils, worshipped with sacrifices.

**Sahariya:** primitive tribe living in Gwalior, Shivpuri and Morena in the north-western part of Madhya Pradesh. The people of this tribe consider Sabari of Ramayana to their first ancestor.

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