

Progression of Vernacular Architecture in the Konkan Region: Case-Study of Ratnagiri District

Vinit Mirkar¹, Adil Ahmad², S. M. Akhtar³

¹PhD Scholar, Department of Architecture, Faculty of Architecture & Ekistics, Jamia Millia Islamia, New Delhi, India
Email: vmirkar[at]gmail.com

²Associate Professor, Department of Architecture, Faculty of Architecture & Ekistics, Jamia Millia Islamia, New Delhi, India
Email: aahmad1[at]jmi.ac.in

³Architect and Academician, New Delhi, India
Email: drsmakhtar[at]gmail.com

Abstract: The 'vernacular' in architecture is often stereotyped as static or unchanging, bound to materials and construction techniques found only locally. Through the investigation of the vernacular built environment of the Ratnagiri district in Maharashtra's coastal Konkan region, this paper argues that, contrary to popular stereo typification, the vernacular is constantly-evolving and adapting with contemporary situations. The research largely uses a qualitative methodology to study: the semi-structured interviews with local builders and homeowners, along with mapping the contexts on field. The paper analyses how shifting socio-cultural practices, the usage of newer, mass-produced materials - like steel frames, concrete slab roofs and profiled roofing sheets is adopted along with the existing laterite wall masonry. An additional component is the declining availability of specialized local labour who have so far contributed to the spatial and structural expressions, with traditional wisdom thus far. The newer clients are seen to be influencing these decisions with their exposure to easily-available international media and development narratives, which give rise to newer spatial manifestations, keeping in line with growing urban aspirations. The study demonstrates that the contemporary vernacular expression in the Ratnagiri district is representative of the negotiation between function and economics in order to stay affordable and culturally relevant, as an inherently dynamic process.

Keywords: Progressive Vernacular, Konkan Architecture, Ratnagiri District, Socio-Spatial Transitions, Material Evolution, Global-Local Hybridization

1. Introduction

Vernacular architecture, arising out of its contextual geography, climate and culture, maintains a close relationship between the local people and their surroundings [5],[7]. The Konkan region comprises a narrow belt on the west coast of the Indian state of Maharashtra. It is bound on the west by the Arabian Sea and on the east by the Sahyadri range (Fig. 1).



Figure 1: Nine Talukas of Ratnagiri district in Konkan division of Maharashtra state, India
(Source: Adapted from Maharashtra State Data Bank, 2014 [3])

1.1 Aim

The aim of this study is to investigate and establish the evolving nature of vernacular architecture of Ratnagiri district, with the focus on interpretation of traditional building practices in response to changing socio-cultural conditions, emerging materials and the aspirations of an increasingly interconnected world.

1.2 Objectives

The objectives for this study are:

- 1) *To analyze socio-spatial transformations:* Reinterpretation and reorganization of traditional spaces, such as the *oti* (verandah) and *majghar* (living room) to meet contemporary lifestyles.
- 2) *To evaluate the incorporation of industrial materials:* The shift from high-maintenance traditional resources to sturdy, cost-effective and low-maintenance materials, such as RCC slabs, MS framing and profiled roofing sheets, in keeping with the local climatic conditions.
- 3) *To assess changing craftsman practices and the role of mechanization:* Documenting the impact of evolving labour patterns and the increasing role of industrial mechanization, such as wire-cut laterite blocks and pre-cast concrete components, are reshaping vernacular construction processes.
- 4) *To examine the hybridization of regional and local influences:* Evaluation of the incorporation of inherited climatic wisdom and practices and regional building traditions with regional architectural ideas, contemporary

urban aesthetics and emerging lifestyle aspirations.

2. Literature Review

The built environment in this region has evolved as a direct response to the heavy monsoon rains, lateritic terrain, dense vegetation and the local ways of life. The Konkani *ghar* or home, is characterized by thick *chira* (laterite) walls, sloping timber roofs covered with clay tiles, which allow the intense rainfall to drain away easily [2]. However, far from being static relics, these houses are living examples of the dynamic processes of adaptation.

Ratnagiri district has seen several social and economic changes due to forces of the migration economy, increased urban connectivity and access to information about globalization alterations, leading to inevitable metamorphoses in the built environment [1].

This paper argues that the vernacular architecture of Ratnagiri is not a static phenomenon. Instead, it is representative of a constantly-evolving vernacular that continues to keep pace with the progressing spatial and structural language, while retaining its regional identity.

Contemporary changes in house form and construction are being shaped by evolving lifestyles, changing socio-cultural practices and use of industrial materials optimized for their low maintenance. These changes are also accompanied by the declining availability of traditional craftsmen and the aspirations of a visually-literate generation exposed to, and aware of global trends [6]. This has resulted in an architectural idiom that reflects both continuity and change, negotiating between inherited traditions and emerging realities.

3. Methodology

This study utilizes a qualitative research approach: empirical evidence from field observations is collated along with the experiential narratives of the local stakeholders. The methodology is carried out in three sequential stages:

Step 1: Field Mapping and Documentation

The fieldwork was undertaken in selected rural and semi-urban settlements of Ratnagiri district, based on parameters of traditional and rapidly changing zones in Guhagar, Sangameshwar, and the rural outskirts of Ratnagiri city. The following studies were conducted:

- Spatial Documentation:* Traditional Konkani *ghars* (houses) were surveyed to understand how their layouts have changed over time, especially with respect to how various spaces in the household have been reduced, expanded, modified, or assigned new functions.
- Material Documentation:* The study documented the various ways in which the houses combined traditional building materials and construction methods, such as laterite masonry, with newer industrial materials like steel trusses, reinforced concrete elements, and factory-made roofing sheets.

Step 2: Qualitative Stakeholder Interviews

Primary data in order to understand the influence of human

factors was collected through semi-structured interviews with two key stakeholder groups.

- Local Builders and Gawandis (masons):* For the purpose of understanding shifts in construction practices, to wire-cut laterite blocks, pre-cast building components, and hence the gradual decline of traditional apprenticeship-based skills.
- Home-owners as Decision-makers:* Discussions with homeowners helped identify the practical considerations shaping design choices, such as maintenance concerns, financial constraints, lifestyle aspirations, and the influence of urban design trends.

Step 3: Analysis and Comparative Synthesis

The collected qualitative data was collated and analysed elementwise. Thus, instead of evaluating the Konkani *ghars* as static artefacts of traditional architecture, the study undertook the comparison of the physical documentation of the houses with the narratives and testimonies of the householders themselves. This approach helped understand the socio-economic and cultural factors driving the transformation and progression of vernacular architecture in the Konkan region, while highlighting how traditional forms continue to adapt to contemporary needs.

4. Literature Review

This study is based on data collected from 45 documented residential houses and 30 in-depth interviews with homeowners, artisans, builders and other stakeholders from the selected regional clusters. The data collected includes details of layouts, materials and interview responses. These provide insights into how traditional residential architecture is adapting to contemporary needs and construction practices.

4.1 Field Mapping Dataset: Spatial & Material Audits

The multi-variate matrix in Table 1 shows the physical transitions across three micro-climatic zones of the Ratnagiri district.

To ensure regional representation, spatial and material audits were carried out across different parts of the district. This allowed the study to record the specific geographical and environmental influences that shape local building practices and architectural character, as shown in Fig. 2.

4.2 Qualitative Stakeholder Interview Data

Salient points and recurrent aspects were identified from the information transcribed from the interviews. This data (Table 2) was categorized thematically and analyzed to understand underlying patterns, motivations, perceptions or behaviours.

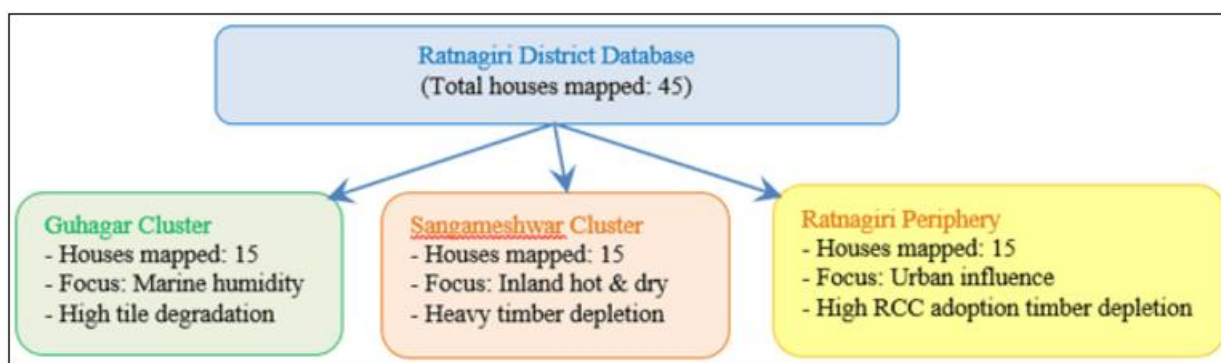
4.3 Spatial Reconfigurations and Structural Junctions

The shift from the traditional house, inhabited by the members of a joint family, to a contemporary one for a nuclear family can be clarified by comparing the architectural and spatial transformations, as shown in Fig. 3

Table 1: Spatial and Material Modifications Cross-Section

(Source: Field studies by Authors)

Settlement Cluster (Taluka)	Typology Category	Core Wall Material	Roof Structural System	Avg. Oti Width (m)	Status of Majghar (core)	Primary Maintenance Constraint Reported
1. Guhagar (Coastal Rural)	a) Traditional (Pre-1990)	Hand-dressed Laterite (Mud Mortar)	Timber Truss with Mangalore Tiles	2.4m	Intact; Core node	High annual tile realigning cost; termite vulnerability.
	b) Hybrid Contemporary	Machine cut Laterite (Cement Mortar)	MS Frame with Profiled Metal Sheets	1.2-1.5m	Converted to living room with TV unit	No leakage from roof; Heated environment in summer; minor fading of polymer sealant.
2. Sangameshwar (Midland)	a) Traditional (Pre-1990)	Hand-dressed Laterite (Lime Plaster)	Timber Truss with Country Kavlu Tiles	2.1m	Intact; used for storage	High scarcity of local master carpenters
	b) Hybrid Contemporary	RCC Frame + Laterite Infill	Flat RCC Slab with Decorative MS Slope Roof	0.8m (Enclosed)	Replaced by open-plan dining area	None reported; complete structural rigidity.
3. Ratnagiri (Periphery)	Semi-Urban Hybrid	Machine cut Laterite (Exposed Cladding)	Flat RCC Slab with Aluminum Sliders	0.5m (Gated)	Completely absent; replaced by central corridor	High internal humidity if synthetic exterior coats peel.

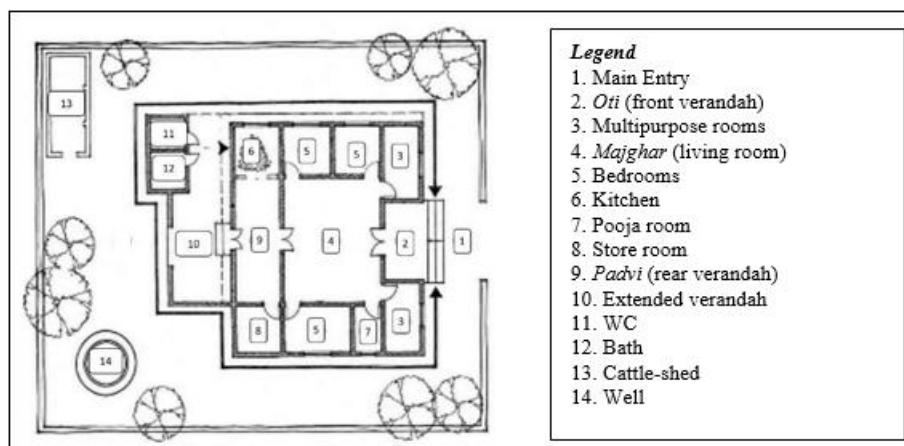
**Figure 2:** Field Mapping and Survey Distribution Layout

(Source: Authors)

Table 2: Coded Qualitative Responses from Primary Stakeholders

(Source: Field studies by Authors)

Analysis Variable	Dominant Qualitative Narrative Theme	Statistical Weight (% of Sample)	Direct Sample Quotes from Fieldwork
Material Preference	Preference for machine-processed blocks over hand-cut stone due to compressed construction timelines.	78% of Contractors	"Getting a Gawandi/mason who can dress stone evenly by hand takes weeks now. Machines do it instantly."
Roof Replacement Triggers	Financial unviability of recurrent annual roof restructuring and timber pest management.	83% of Homeowners	"Every May we spent ₹15,000 on tile alignment. With an MS sheet roof, I haven't spent a rupee in 6 years."
Spatial Aspirations	Shrinkage of public frontages in pursuit of indoor privacy and alignment with modern interior aesthetics.	72% of Homeowners	"We want our guests to see the modern sofa set and vitrified tile flooring inside, not sit outside on an open bench."

**Figure 3(a):** Plan of traditional house (pre-1990)

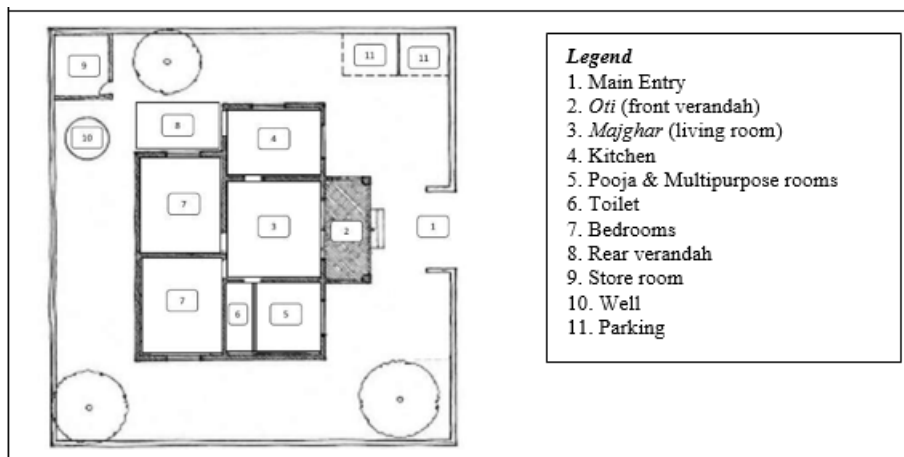


Figure 3 (b): Plan of hybrid house (contemporary)

Figure 3: Schematic plan to show evolution in the architectural layout of homes

(Source: Field documentation by Authors)



Figure 4: Progressive roofing interface

(Source: Field documentation by Authors)

4.3 Spatial Reconfigurations and Structural Junctions

The transition of the roof in its structure and covering material demonstrates how industrial materials are preferred in contemporary times, over the traditional timber frames with clay roofing tiles. However, even the new materials serve the sloping profile essential for appropriate climate response in the region (Fig. 4).

5. Discussion: The Catalysts of Vernacular Progression

This study has shown that various aspects like changing socio-cultural practices, with changing lifestyles and incorporation of contemporary industrial materials have influenced the evolution of the expression of vernacular architecture, keeping the essence of the Konkani region intact.

5.1 Socio-Spatial Transformations and Structural Reconfiguration

Traditional Konkani houses were specific to a joint-family system of living, along with an agrarian lifestyle. However, changing family structures and economic activities have significantly influenced residential layouts. As a case in point, the previously large and active *oti* (verandah) is seen to shrink from an expansive 2.5m width to just 1.5 m. Its spatial function has been inverted from a semi-public space as nuclear families become the norm [1]. The economy has

pivoted from solely agriculture to horticulture, tourism and service-sector employment. This in turn has led to a shift in spatial priorities: contemporary households are seen to require less space for community interaction or for public interaction, and more for private family use.

Another example illustrating this is the *majghar* which is the central living space. Though previously dimly-lit, it had served as the social and cultural core of the home, used as a shared gathering area. In the contemporary Konkani *ghar*, it has been replaced, in many cases, by an open-plan living-dining lounge (as shown in Fig. 3).

These modifications demonstrate a broader shift in residential design. The earlier community-oriented, multi-generational living arrangements have transformed into enclosed environments that prioritize privacy, security, and contemporary standards of comfort.

This evolving spatial organization of the Konkani *ghar* reflects the changing social structure, lifestyle aspirations and functional needs of modern households.

5.2 Industrial Material Incorporation: The Shift Towards Low-Maintenance Alternatives

As outlined in Table 2, roof maintenance is the foremost concern for the majority of contemporary homeowners due to its high financial consideration: the traditional timber-truss roof covered with clay tiles require regular upkeep, including pre-monsoon cleaning, repairs and realignment to prevent

leakage and weather-related damage. Further, with rising maintenance costs and changing lifestyle expectations, homeowners increasingly prefer more durable and low-maintenance solutions. However, it is observed that even under this framework, builders continue to build the functional pitched roof that has been traditionally effective in deflecting the region's intense rainfall. Instead, contemporary builders have chosen to adapt with the materials used to construct the sloping roof. Traditional timber roof structures are increasingly being replaced by mild steel (MS) trusses and profiled metal roofing sheets, often installed above a flat RCC slab (Fig. 5) This hybrid system combines the durability of reinforced concrete with the lightweight efficiency of steel roofing, ensuring the architectural typology remains climatically viable, reduced maintenance, leak-proof envelope without continuous financial overheads. The integration of industrial materials has therefore enabled the traditional Konkani house form to evolve without losing its suitability for its demanding coastal environment.



Figure 5: New house of RCC construction, covered with sloping steel profile roof for protection from rains and subsequent leakages.
(Source: Authors)

5.3 Artisan Dynamics and the Mechanization of Craft

The decline of traditional craftsmanship, whether master carpenters or masons, has emerged as a major factor influencing the transformation of vernacular construction practices [6]. As a response to reduction in labour-intensive building methods, the construction sector has gradually adopted mechanized processes and materials that require less specialized craftsmanship.

One instance of this is the widespread adoption of Machine cut laterite blocks [4]. The interviews showed that these were preferred by most of the building contractors over hand-dressed laterite stone. This traditional construction method required skilled workers to ensure careful fitting for even mortar thickness and periodic maintenance such as lime washing. On the other hand, machine-cut blocks are uniform due to accurate dimensions and therefore allow faster construction with even cement mortar joints, while lowering dependence on skilled craftsmen.

This transition shows how vernacular building practices in Konkani are adapting to changing labour market realities with the use of mechanized solutions while continuing to employ locally familiar materials and construction techniques.

5.4 Regional-Local Hybridization: Aspirational Expressions

The contemporary houses of Ratnagiri reflect the blend of local architectural wisdom with modern lifestyle aspirations. Most home-owners continue to value features that have proven climatically effective, such as deep roof overhangs, which protect walls from severe weather and improve the overall durability of the structure. Such architectural features are retained and integrated into newer architectural forms. These changing aesthetic preferences are usually shaped by media, exposure to urban lifestyles and proximity to metropolitan centres such as Mumbai.

Most homeowners are therefore seen to prefer houses which combine the climatic characteristic visuals of traditional materials with the comfort and appearance of modern interiors. These result in hybrid curations comprising exposed Machine cut laterite walls paired with contemporary finishes such as vitrified flooring, aluminium sliding windows, modular kitchens, and minimalist interior spaces.

This evolving, progressive architectural expression demonstrates that the vernacular is not a rejection of tradition, but a selective synthesis and thoughtful adaptation, combining time-tested, climate-responsive, regional building knowledge with contemporary aspirations, creating homes that are both culturally rooted and suited to modern lifestyles.

6. Conclusion

The architecture of Ratnagiri demonstrates that the vernacular expression is not a 'static' or 'unchanging' tradition. Rather, it is a dynamic, constantly-evolving and resilient system that survives by pragmatically adapting to changing circumstances while retaining its essential character. Due to economic constraints, scarcity of traditional craftsmen, and changing family structures, both builders and homeowners have continually adapted and modified spatial layouts and construction material palettes. The adoption of cost-effective, low-maintenance industrial materials and mechanized construction techniques has enabled vernacular building practices to remain both relevant and economically feasible. At the same time, the current generation of residents have successfully integrated inherited climatic wisdom with modern spatial aspirations.

The evolving Konkani ghar thus represents a progressive synthesis of an architecture that remains deeply rooted in its cultural and environmental context while responding definitively to present and future needs.

References

- [1] Chintamani, B. G., & Kulkarni, L. (2023). Determinants and Effects of International Remittances: Evidence from Ratnagiri District of Rural Maharashtra. *The Indian*

Journal of Labour Economics, 9, 1-21.
doi:10.1007/s41027-022-00426-1

- [2] Lang, J. T. (1997). *Architecture and Independence : The Search for Identity- India 1880 to 1980*. Delhi, New York: Oxford University Press.
- [3] Maharashtra State Data Bank. (2014). *Ratnagiri*. Retrieved 2026, from maharashtra state data bank: <https://mahasdb.maharashtra.gov.in/districtInfo.do?dist=528>
- [4] Maklur, N., & Narkhede, P. G. (2018). Study of Laterite Stone as Building Material. *International Journal of Engineering Research*, 7(Special 3), 223-226. doi:10.5958/2319-6890.2018.00063.6
- [5] Oliver, P. (2006). *Built to Meet Needs: Cultural Issues in Vernacular Architecture*. Oxford: Architectural Press.
- [6] Rao, R. G. (2015). Timber Conservation: A Brief Overview. In S. Jain (Ed.), *Context: Built, Living and Natural* (Vol. XI, pp. 31-34). Dronah. Retrieved 2024, from <https://www.dronah.org/wp-content/uploads/2018/06/Context-19.pdf>
- [7] Rapoport, A. (1969). *House Form and Culture*. Englewood Cliffs, NJ: Prentice-Hall

Author Profile



Vinit Mirkar has completed his G.D.Arch. and M.Arch. from Rachana Sansad's Academy of Architecture, Mumbai. He is currently the Principal of IES's College of Architecture, Mumbai University.



Adil Ahmad has completed his B.Sc. Engg. (Civil) from Jamia Millia Islamia, New Delhi and M.Sc. Engg. (Structures) from Aligarh Muslim University, Aligarh. His was awarded a doctorate from the Department of Earthquake Engineering, IIT Roorkee. He is currently Associate Professor (Structure) at the Department of Architecture Faculty of Architecture & Ekistics Jamia Millia Islamia.



Dr. Syed Mohammad Akhtar is an environmentalist, architect, town planner, interior designer and social scientist. He has been Professor and Dean at the Department of Architecture Faculty of Architecture & Ekistics Jamia Millia Islamia.