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FILTERED MODERNITIES:
Architecture at the Edge of Tradition and Transformation

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Abstract

Architecture in the rural northeast of Mexico reflects an ongoing negotiation between inherited building traditions and contemporary aspirations for modernity. In many settlements, vernacular construction practices developed through interactions between communities, materials, and environmental conditions continue to shape the built environment. At the same time, increasing access to industrial materials and changing cultural perceptions of modern living have begun to transform these traditional building systems. These adaptations constitute a form of spatial [re]claiming, in which modernity is filtered through vernacular principles and the lived experience of place, reflecting not only practical needs but also a deeper, implicit assertion of cultural identity.

This paper examines how vernacular architecture in the rural settlement of Jamé, located in northeastern Mexico, adapts to these changing conditions. Through a qualitative analysis combining contextual site research and a review of key literature on vernacular architecture and cultural practice, the study explores how local dwellings incorporate new materials while retaining elements of traditional construction knowledge.

The findings suggest that recent architectural transformations in the region are characterised by hybrid material strategies, where earthen construction techniques coexist with industrial materials such as concrete block and corrugated steel. These hybrid forms reflect not simply the replacement of vernacular traditions but rather a process through which communities reinterpret architectural practices in response to evolving environmental, social, and cultural conditions.

By analysing these material transformations, the paper explores different lenses through which vernacular architecture can be understood through transforming and adapting processes rather than preserving a static historical condition. The case of Jamé illustrates how architectural modernity in rural contexts is often locally filtered through existing building traditions, producing built environments that negotiate between tradition and transformation. It contributes to broader conversations about how architecture is [re] imagined at the edges of mainstream frameworks and how built form becomes both a reflection of and a critique of dominant narratives of development.

FILTERED MODERNITIES:
Architecture at the Edge of Tradition and Transformation

Introduction

Architecture in rural contexts often emerges from a complex interaction between traditions and contemporary ideas of transformation, where both construction practices and the buildings themselves are frequently passed down across generations within families. In many regions, particularly those located outside formal centres of architectural production, built form is shaped less by professional design discourse and more by the cumulative knowledge, material practices, and cultural values of local communities. These processes produce architectural environments that continuously adapt to environmental conditions, economic realities, and shifting cultural meanings.

The rural settlement of Jamé offers a compelling context in which to examine these dynamics. The region's architecture has historically relied on locally available materials such as earth, timber, and stone, as well as construction techniques developed through long-standing interactions between inhabitants and their environment. These vernacular practices have traditionally enabled buildings to respond effectively to climatic conditions, daily routines, and local patterns of life, although such performance is not universal and requires empirical validation in each specific context.

In recent decades, however, these material and spatial traditions have increasingly been modified through the introduction of industrial materials such as concrete block, aluminium window frames, and prefabricated construction elements. These changes reflect broader cultural aspirations associated with modernity and improved living standards. Yet such interventions often disrupt the environmental logic and cultural continuity embedded within vernacular architecture.

This paper examines how vernacular architecture in Jamé responds to the interplay of tradition and transformation. Vernacular architecture can be perceived as a static or nostalgic condition. However, it can also be explored as a dynamic system of knowledge, evolving through adaptation, reinterpretation, and material substitution. Through a contextual analysis of local building practices, materials, and recent architectural modifications, the research explores how rural dwellings mediate between inherited construction knowledge and contemporary architectural aspirations.

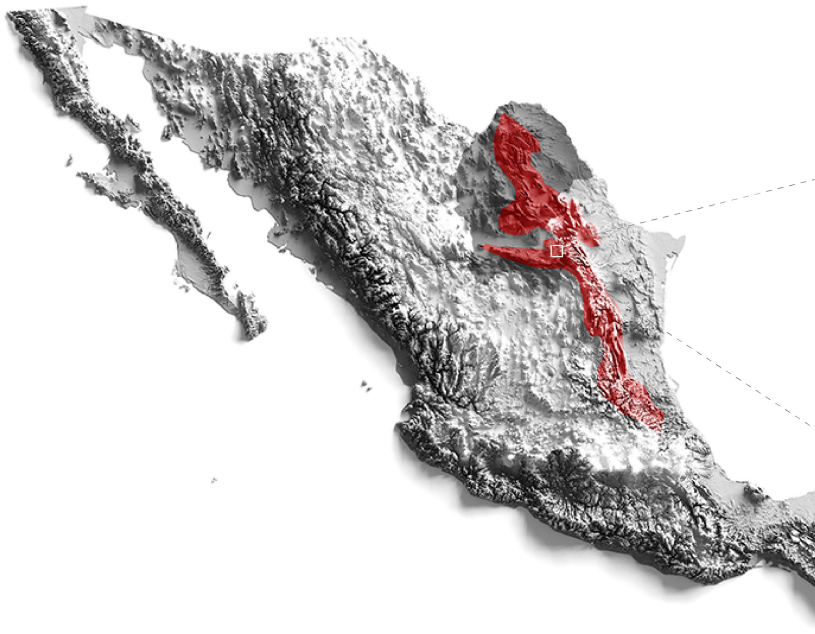
By examining the material transformations taking place within the built environment of Jamé, this study contributes to broader discussions on vernacular architecture, cultural identity, and the role of local knowledge in shaping context-responsive design practices. In doing so, it argues that the hybrid architecture emerging in this region should not be understood as failures of tradition or incomplete forms of modernity, but rather as situated responses to changing environmental, social, and cultural conditions.

Foundations of a Contextual Knowledge

In the early stages of human settlement, as the first civilisations began to take root across diverse regions, inhabitants instinctively sought forms of shelter that could offer both comfort and protection within the constraints of their immediate environment. A form of natural analysis took place, whereby communities observed the elements from which they needed to shield themselves, as well as those from which they could draw benefit. This process represented an intuitive and harmonious dialogue between the human body and the surrounding landscape, gradually giving rise to architectural expressions that evolved not only due to environmental demands but also in response to shifting social and political conditions.

Beyond their function as shelter, buildings in villages reflect what their inhabitants have in common, which, in addition to ideologies and culture, reflects the physical factors that surround them. Settlements cannot be understood solely as mapped places; they become lived environments through the activities and interactions of their inhabitants, continually shaped by both social practices and environmental conditions. While a place refers to the fixed configuration of elements within a stable environment, it is transformed into space through the movements, routines, and daily practices of its inhabitants (De Certeau, 117). This highlights the importance of understanding a settlement's physical and geographical characteristics, which both provide the framework for lived experiences and actively shape the form of its buildings.

The village of Jamé is situated in the mountainous terrain of northeastern



Mexico, in the municipality of Arteaga, Coahuila, nestled within the Sierra Madre Oriental, an extensive mountain range that runs along the eastern side of the country, stretching from the north towards the central region (Figure 1). The elevations in this range reach approximately 3,000 metres above sea level, with the municipality of Arteaga home to the region's highest peak, along with Santiago, Nuevo León, the Cerro de la Viga, standing at 3,715 metres.

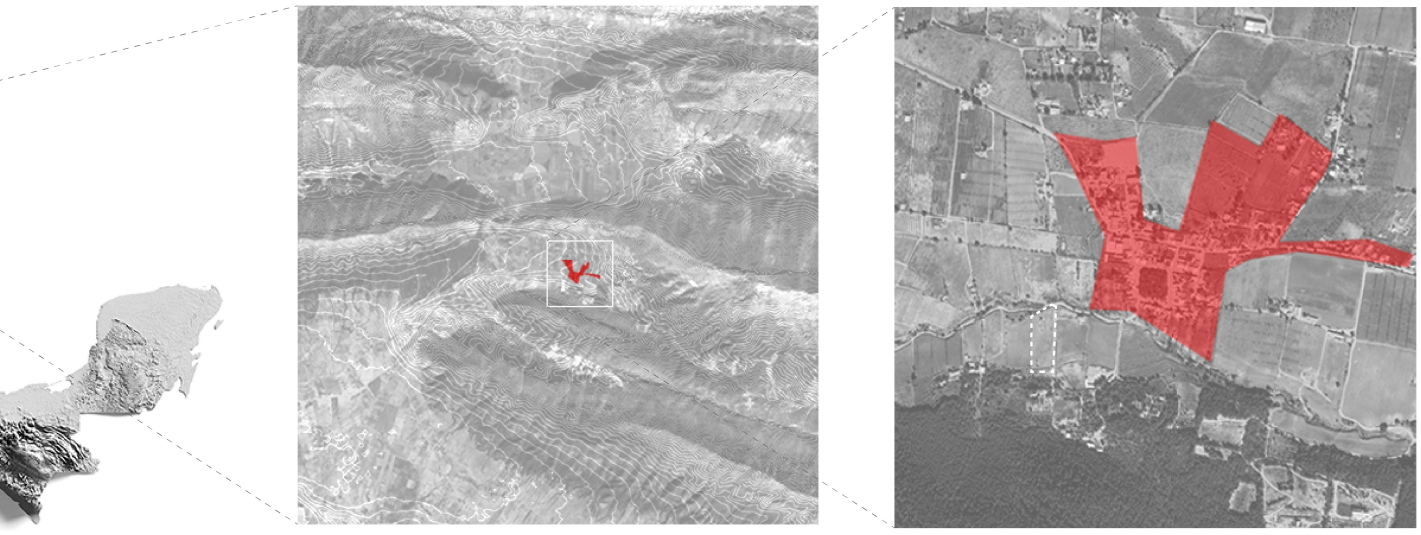
The municipality is located between the parallels 25°09' and 25°32' north latitude, and the meridians 100°57' and 100°14' west longitude, with an elevation ranging from 1,300 to 3,700 metres above sea level. Average temperature ranges vary between 8°C and 20°C, while extreme averages may fall outside this interval. Annual precipitation ranges from approximately 300 to 700 millimetres. The climate is predominantly temperate sub-humid with scarce rainfall throughout the year, and these altitudinal conditions produce a temperate mountain climate and regular snowfall typically occurring in December and January (INEGI 2010, 1).

Views from most buildings in the town open onto pine trees and dense forest vegetation, reflecting the settlement's integration with its natural surroundings. Situated at an altitude of approximately 2,275 metres, the town's architecture is predominantly composed of earth-based materials, with more recent interventions constructed primarily from concrete block. While traditional designs may not always meet the practical demands of contemporary living, they continue to offer valuable inspiration. When thoughtfully reinterpreted, these forms can lead to architectural solutions that are both functionally effective and culturally meaningful.

In this region, early twentieth-century houses in nearby cities often incorporated colonial architectural elements, which were later emulated in the dwellings built along the mountainous slopes. According to King (2001, 14-15), both

Figure 01:
From Left to Right: Mexico with the State of Coahuila Shaded and the Sierra Madre Oriental Highlighted in Red; Part of the Municipality of Arteaga, with Jamé Shown in Red; Jamé.

Gómez, 2025.



in northeastern Mexico, and in some regions of southern Spain, similarities can be seen, especially in dwellings. These elements include flat roofs, door and window openings strategically placed and formed, single-story houses with adjoining small barns, a zaguán, which is a patio-corridor used to connect all rooms, relatively large kitchens, as these are the hubs of family activity, and a patio with a water well or cistern.

Although the architectural elements were adopted stylistically, they were implemented pragmatically to respond to the environment. As shown in Figure 2, the largest openings face south, while the east façade has only minimal openings.

However, due to distinct climatic conditions and differing patterns of daily life, these features required adaptation. The mountainous terrain experiences much stronger air currents than the semi-arid valleys below, demanding alternative strategies for climate control (Figure 3). In rural areas, where daily routines typically began early to accommodate agricultural labour, such architectural elements remained both functional and symbolically significant. As a result, these features were reinterpreted to respond to environmental conditions while still preserving key aspects of traditional design and reinforcing the cultural identity of the house.

Figure 02:
Dwelling with Main Door and
Big Windows Facing South.

Gómez, 2025.

Figure 03:
Mountainous Landscape of the Region.

Gómez, 2025.

Conceptual and Analytical Approach

This study adopts a qualitative and interpretative approach grounded in architectural and anthropological scholarship. It draws primarily on literature review and contextual analysis to examine vernacular architecture from perspectives that understand the built environment as a cultural artefact shaped through lived practices, social relations, and material engagements. This approach positions the research as a critical reading of how vernacular knowledge is constructed, interpreted, and transformed within a specific context.

By analysing foundational texts and impactful research, the study seeks to uncover the relationships between vernacular architectural practices and broader cultural and environmental considerations, while also exploring their role in sustainable design. This process serves as the primary means of contextualising the research within the broader academic dialogue, building a comprehensive understanding of how these concepts intersect in the context of rural architecture in the north-east of Mexico.

The Cultural and Material Dimensions of Vernacular

A distinction has been made between key dimensions of vernacular architecture, including material properties, environmental performance, and cultural meaning. While these domains often intersect in practice, they are not inherently equivalent, and their relationships require critical examination rather than assumption.

To describe a building as vernacular, as Glassie (2000, 20) suggests, is to acknowledge the inherently cultural and context-dependent nature of all building. The term vernacular reflects a movement from the unfamiliar to the familiar; it is used to describe buildings that embody values distinct from those typically upheld in academic or formal architectural discourse. Once referred to as folk architecture, these structures were regarded as a counterpoint to the ideals of refinement and progress often promoted by institutional narratives, rooted instead in shared knowledge, tradition, and everyday practice. They represent a different kind of value, one that is grounded in lived experience.

The study of vernacular architecture, motivated by an inclusive approach, seeks to foreground cultural diversity by drawing attention to relegated building practices and forms. It recognises the layered realities of conflict, adaptation, and difference within the built environment.

Popular architecture emerges as a direct response by communities to their own needs and values. Relying wherever possible on local materials and techniques, they draw upon historical models that have been reiterated over time, consistently addressing the environmental constraints imposed by climate with remarkable ingenuity; these structures demonstrate a heightened sensitivity to their surrounding natural and built contexts, and prioritise practical adaptation over theoretical or aesthetic ambition (Coch 1998, 67). In this sense, vernacular architecture has long embodied forms of technical intelligence embedded within everyday building practices.

Rudofsky (1964, 5) observed that many solutions developed within so-called ‘primitive’ environments anticipate or rival modern technological approaches, revealing that features often considered recent innovations have long existed

within vernacular architecture (Figure 4). By foregrounding these overlooked practices, architectural narratives that privileged monumental works and professionally designed buildings can be questioned, drawing attention instead to the intelligence embedded in anonymous and community-based construction.

While there is much valuable knowledge to be gleaned from vernacular architecture, it's important to recognize that, like everything, it has its limitations. Oliver (2007, 124) states that the enthusiasm for vernacular architecture permeates and objectively veils its benefits. It is often considered,

Figure 04:
Revisiting Vernacular Materials for their Thermal Performance and Cultural Significance: Traditional Adobe Wall alongside Contemporary Adobe Architecture.

Gómez, 2025.

by its enthusiasts, superior to modern architecture, as is the use of traditional materials. Although the latest have many advantages, their capabilities compared to modern materials cannot be evaluated lightly, whether structurally, ecologically, or aesthetically, to name a few. For instance, the production of steel consumes fossil fuels and water, while the extraction of timber places pressure on forest resources. Consequently, meaningful comparisons require clearly defined criteria when assessing which material, or even which type of construction, may be considered more appropriate in a given context.

Rapoport (1969, 83) argues that dwellings should not be understood merely as responses to climate or the availability of materials, but also as expressions of cultural values, social organisation, and patterns of everyday life. From this perspective, vernacular buildings emerge from the interaction between environmental constraints and culturally embedded ways of inhabiting space. Within this context, traditional builders often demonstrate remarkable skill in responding to climatic conditions, carefully selecting sites and materials suited to local microclimates and adapting established building models to specific environmental circumstances.

Therefore, materials play a fundamental role in vernacular architecture, not only because of their practical and environmental suitability but also due to their cultural significance and local availability.

In the mountainous regions of northeastern Mexico, the widespread use of earth in construction emerged from the abundance of soil deposits naturally occurring along the slopes. This readily available resource, combined with straw, formed the basis of local building techniques. When mixed, these materials enhanced the structural integrity and flexibility of walls, resulting in constructions well-suited to both the environmental conditions and the rhythms of rural life.

The volumes used are primarily rectangular with straight lines, which complement the use of traditional materials in construction. The walls were predominantly made of adobe, while the roofs were made of terrado, a layer of inorganic soil covered with lime and sand mortar to prevent water infiltration. These roofs were supported by beams or logs (Figure 5), and in some cases, additional reinforcement was provided through tejamanil, shingles laid transversely or diagonally across the beams, or by entablerados, planks placed over the beams (King, 2001). Tejamanil, derived from the Nahuatl word tlaxmanilli, gained popularity by 1580 in certain towns of New Spain (Butzer and Butzer 2000, 21), making it well-established by the time it was implemented in Arteaga, which was founded in 1591.

Most dwellings in Jamé are still constructed using earth-based materials, a tradition that has endured for over a century. In recent decades, however, some structures have undergone modifications reflecting a local reinterpretation of modernity in pursuit of improved domestic conditions, residents have introduced materials such as concrete blocks and corrugated steel, interventions that, somewhat paradoxically, have often diminished the buildings' thermal performance under these specific climate conditions. These changes mark a rupture in the intrinsic relationship between the built environment and the cultural values of its makers and inhabitants. This break is manifested in a variety of ways, including altered spatial configurations, shifts in material use, structural changes, building extensions, and, in some cases, overtly expressive architectural forms.

Due to limitations in transportation, vernacular architecture depended largely on materials readily available within the immediate environment and on locally rooted construction knowledge. This reliance not only encouraged the conservation of resources but also fostered the development of regionally distinctive architectural expressions. The physical and aesthetic qualities inherent to each material shaped building techniques that were carefully adapted to their specific characteristics, resulting in solutions finely tuned to both place and practice.

As economic conditions, technologies, and cultural aspirations change, vernacular traditions evolve through processes of reinterpretation and material transformation. In many contexts, these changes produce hybrid architectures that combine inherited building knowledge with new construction materials and techniques.

In this light, vernacular architecture is not merely a stylistic expression but a living system of knowledge, shaped by generations of trial, adaptation, and response to specific environmental and cultural conditions. It reflects a form of slow, adaptive intelligence, one that mediates through climate, material, and daily life with quiet resilience. By recognising its value beyond aesthetic nostalgia, we begin to understand vernacular architecture and the way it has been approached into modernity trying to be as context-responsive to contemporary design.

Changes within the built environment of Jamé can be observed most clearly through shifts in construction materials and building techniques. Over time, traditional earth-based materials such as adobe, stone, and timber have increasingly been supplemented or replaced by industrially manufactured

Figure 05:
Dwelling Roof Structure Supported by Wooden Logs.

Gómez, 2025.

elements including concrete block, corrugated metal roofing, and aluminium window frames (Figure 6).

These material substitutions are rarely driven solely by technical considerations. Instead, they are often shaped by changing cultural perceptions of modernity and progress. Industrial materials are frequently associated with durability, status, and contemporary living standards, leading many residents to incorporate them into existing structures or new constructions. However, these interventions do not always produce improvements in environmental performance. In many cases, replacing thick earthen walls with lightweight masonry or concrete blocks reduces the thermal mass of buildings, increasing indoor temperature fluctuations and diminishing the climatic responsiveness that characterised earlier vernacular constructions. The resulting architecture is therefore neither purely traditional nor fully modern. These hybrid constructions illustrate how vernacular architecture evolves through adaptation rather than simple continuity or replacement.

Tradition and Innovation: A Cultural Dialogue

The relationship between tradition and innovation is often shaped by sociocultural perceptions that influence how communities build, adapt, and ascribe meaning to architecture. Tradition is frequently seen as old, impoverished, or static, particularly in marginalised or rural contexts, while modernity is framed as aspirational, progressive, and materially superior. These dichotomies, however, obscure the complex and often dynamic interplay between inherited practices and new influences. Within the built environment, innovation does not simply replace tradition but transforms and redefines it, often producing hybrid expressions that reflect both continuity and change.

Tradition is understood as the repetition of practices rooted in accumulated knowledge and procedures developed over time within a particular society. Innovation, by contrast, refers to the introduction and application of new products, methods, or conceptual frameworks (Do Rosário and Kong 2021, 1). However, these two forces are not oppositional.

As traditions are shaped and transformed by innovation, new traditions are continually adapted and adopted. Tradition consistently emerges from acts of invention, and both constitute intrinsic components of culture. Many of the traditions recognised in the present day originated as innovations that were assimilated through cultural exchange, subsequently preserved and disseminated across time and space from diverse origins. Consequently, all imaginative or necessary creation is initiated by an external stimulus, whether geographical, ideological, or otherwise.

Building on this understanding, Zumthor (1988, 16-17) observes that contemporary life is increasingly characterised by the normalisation of contradiction, driven by multiple factors. The erosion of traditions has contributed to the fragmentation of cultural identities, while the complexities of economic and political systems often elude comprehensive understanding or control. Boundaries between domains become blurred, and

Figure 06:
Traditional Adobe House with Concrete Block Intervention and Modern Aluminium Windows.

Gómez, 2025.

mass communication contributes to the construction of an artificial world of signs and representations. Within this context, arbitrariness tends to dominate. Hence, the importance of buildings as objects that enable the resurfacing of memories embedded in the depths of time. Such perceptions offer a sense of calm and evoke an intuitive awareness of the world in its entirety, grounded in the belief that nothing lies beyond the scope of understanding.

Therefore, the question of agency becomes central in understanding vernacular architecture and its relationship between continuity and transformation. Unlike formally designed architecture, which is often attributed to individual authors or professional institutions, vernacular buildings typically emerge through collective processes of making, use, and adaptation. Construction knowledge is transmitted through practice rather than formal training, and buildings are frequently modified by their inhabitants over time in response to changing needs and circumstances. In this sense, the built environment reflects the accumulated decisions, skills, and experiences of communities rather than the intentions of a single designer. Through this distributed authorship, traditions are not simply preserved but continuously reinterpreted, allowing innovation to emerge from everyday practices and reinforcing the close relationship between vernacular architecture, lived experience, and the evolving cultural identity of a place.

Reclaiming Vernacular Logics in Contemporary Design

To address today's environmental and cultural challenges, contemporary architecture could rethink sustainability through the lens of vernacular knowledge. This does not mean reverting to the past but rather recognising vernacular architecture as a forward-looking model grounded in centuries of adaptation. Its principles offer not nostalgia, but insight. When understood as strategic rather than static, hybrid architectures, those that blend traditional and contemporary elements, can be reframed not as compromised forms, but as resilient responses to complex realities. In this sense, reclaiming vernacular logics becomes a critical act of design agency: one that bridges heritage with innovation, and locality with sustainability. This approach offers a means of filtering modernity, adapting it to context and tradition, rather than enforcing it.

Moscatelli (2023, 20) highlights the importance of establishing continuity between past and present through the pursuit of identity, without resorting to the falsification of history or the mere replication of tradition. It is essential that designers recognise that any project must begin with an understanding of historical knowledge and local culture, alongside an analysis of the climatic conditions specific to the context. Once historical knowledge has been assimilated, it becomes possible to formulate responses to contemporary challenges. This understanding provides a critical foundation for incorporating vernacular architectural principles into modern design, fostering the development of more resilient structures that are responsive to both the needs of inhabitants and local environmental conditions.

The integration of traditional materials and design principles into contemporary architecture contributes to the preservation of a regions or community's cultural identity. Moreover, such an approach fosters a sense of continuity between historical heritage and present-day architectural

practice (Hu, Suh, and Pedro 2023, 7).

Vernacular principles offer valuable strategies that, when appropriately implemented, can help achieve sustainable design, particularly in the development of environmentally conscious architecture that strives for both functional and aesthetic improvement. Vernacular architecture emerges as a direct response to local conditions, having evolved over time to reflect the environmental, cultural, and historical contexts in which it is embedded. Far from being the product of unsophisticated or coarse design, it demonstrates a high degree of responsiveness to its surroundings and reveals a nuanced understanding of material, climate, and community needs.

Sustainable architecture, broadly defined, encompasses design approaches that are ecologically and energy conscious, aimed at minimising the environmental impact of the built environment. Within vernacular traditions, sustainability is evident not only in the thoughtful use of local materials and climate-responsive design but also in the preservation of heritage and the integration of social and environmental awareness into building practices.

Given the multidimensional nature of sustainability, including environmental, social, and economic considerations, numerous vernacular elements may be adapted to inform contemporary sustainable solutions. There exists an ethical imperative to engage with design strategies that are locally grounded, cost-effective, and proven over time. In this regard, vernacular architecture offers critical lessons and enduring models for building practices that are resilient, inclusive, and environmentally attuned, that should be critically evaluated to be inherently sustainable or transferable.

From Intuitive Shelter to Environmental Awareness: Toward Resilient Futures

Designing with the strategic use of environmental elements through passive systems enables improved building performance and year-round energy efficiency. In the case of Jamé, the area's mild temperatures, moderate humidity, and consistent wind patterns create favourable natural conditions that can significantly enhance occupant comfort when effectively harnessed.

As a result, natural ventilation and orientation can significantly improve thermal comfort and reduce reliance on mechanical systems, although their effectiveness depends on climatic conditions and patterns of use. This reliance on passive climate control strategies not only reduces energy consumption but also mitigates the environmental impact associated with active systems. These environmentally responsive design strategies, rooted in local tradition, have been replicated in recent projects, albeit with appropriate adaptations, to achieve similar outcomes under contemporary conditions.

An illustrative example of vernacular environmental adaptation in this region the use of small wall openings, which, while functioning similarly to skylights, were in fact nothing more than modest apertures located near the upper sections of interior walls (Figure 7). These openings were typically left unprotected and served to allow the escape of warm air from the rooms and the entry of direct or diffused sunlight, depending on the hour and orientation. In doing so, they preserved an uninterrupted connection between interior and exterior environments, facilitating not only light and air circulation but also the entry of ambient natural sounds.

Figure 07:

Wall Opening. Gómez, 2025.

These elements were generally confined to interior partitions or walls that faced open courtyards within the property boundary, never those directly exposed to the street. While such features were highly effective in supporting the agrarian lifestyles of the past, they present certain limitations when considered in relation to contemporary modes of living. Unlike modern windows, these openings do not allow for regulated lighting conditions or artificial illumination based on aesthetic or functional demands associated with more varied daily schedules.

Historically, life in the region was centred around agriculture. In contrast, contemporary use of these dwellings has shifted considerably; many have been converted into holiday homes, used predominantly during weekends or vacation periods. Consequently, both daily routines and time-related needs have changed.

Although adobe has proven to be highly effective in regulating temperature and humidity, may also be viewed as impractical due to its considerable thickness, and its performance depends on factors such as construction quality, maintenance, and climatic conditions. As a result, materials such as concrete blocks, despite their inferior thermal performance, are increasingly being used in new constructions. Interestingly, earthen materials have begun to experience a resurgence in popularity, influenced largely by architectural trends emerging from some regions of the United States, where a renewed appreciation for earth materials has emerged (Aspíllaga et al. 2024, 123). These materials are now sometimes perceived, particularly by outsiders, as aligned with contemporary design sensibilities or even luxurious.

In Figure 8, a recent construction shows a holiday house in Jamé featuring a contemporary use of vernacular architecture. Unlike typical local dwellings, which are usually single storey, this house comprises two levels. The design blends with the local built environment while reflecting the renewed popularity of earthen construction in the region. However, this perception of modernity and the revival of earthen materials as a fashionable trend is not necessarily shared by the local population. For residents of these communities, modernity is often associated with the use of industrial or stone-like materials such as concrete and certain types of masonry, which are regarded as symbols of aspirational living.

Yet despite these contrasting perceptions, vernacular solutions remain highly relevant. They are typically cost-effective, as they are grounded in and responsive to local environmental, cultural, and material contexts. In addition to their affordability, such

Figure 08:
Contemporary Intervention in a Holiday House in Jamé.

Gómez, 2025.

approaches offer significant ecological benefits. Drawing inspiration from vernacular architecture, particularly using locally sourced or native materials, can greatly reduce the overexploitation of natural resources, thereby promoting more sustainable construction practices and minimising environmental impact (Dabaieh, Maguid, and El-Mahdy 2022, 7).

Readily available natural materials such as earth, reeds, straw, wood, and jute have long served as the foundation for traditional construction methods, particularly in the widespread use of sun-dried mud blocks and adobe structures. These bricks, being modular in form, are not only easy to fabricate and assemble but also straightforward to repair, given the local abundance of raw materials. To enhance structural stability and reduce the risk of cracking or shrinkage over time, various natural additives may be incorporated into the mixture. Substances such as lime, organic fibres, and plant-based mucilage, extracted from species like *nopal* and *lechuguilla*, are commonly used to improve the cohesion and resilience of earthen constructions.

In comparison to industrially produced materials, vernacular materials generally have a significantly lower environmental impact, making them a viable and often preferable alternative for sustainable construction. The widespread adoption of standardised, industrial materials has contributed to the homogenisation of construction practices across diverse contexts, giving rise to a universal architectural language that frequently neglects local environmental conditions. This shift has not only diminished regional identity in the built environment but has also increased dependency on energy-intensive systems and external resources (Fernandes, Mateus, and Bragança 2014, 623).

Key principles of sustainable design include the optimisation of site potential,

the preservation of regional and cultural identity, the reduction of energy consumption, and the conservation of natural resources. Further considerations encompass the use of environmentally responsible materials, the creation of healthy and comfortable indoor environments, and the adoption of efficient operational and maintenance strategies. In this regard, materials employed in vernacular architecture offer significant advantages, contributing positively to the fulfilment of these sustainability objectives.

Such materials typically require little to no transportation, as they are locally sourced, and involve less energy-intensive production processes. Being natural, they are often organic, renewable, and biodegradable. While the demand for specialised craftsmanship is sometimes perceived as a drawback, it is important to note that the overall expense of these structures remains comparable to that of standard concrete slab construction. In this context, directing a greater portion of the cost towards skilled labour may be seen not as a limitation, but as a meaningful contribution to local economies and the enhancement of construction quality.

It is important to recognise that such materials are not inherently unique to a specific place. While earth construction is frequently associated with local identity, similar soil compositions suitable for construction can be found globally; therefore, their cultural significance emerges not from the material itself, but from the practices, knowledge systems, and meanings attributed to its use.

On the other hand, contemporary materials and an industrialised construction culture have contributed to the idealisation of concrete and steel-based systems, leading to their widespread incorporation into vernacular architecture. The blending of industrial and traditional materials (Figure 9), exposure to biotic and abiotic agents, and the lack of formal regulations concerning earthen construction, have resulted in maintenance and restoration efforts that are often inappropriate or incompatible with the original fabric of traditional earth-based architecture (Rotondaro 2004, 28).

Several studies have examined clay and sand deposits in northeastern Mexico to assess their suitability for earthen construction. In a recent study (Aranda, Domínguez, and Jiménez 2023, 631-632), random soil samples were collected from three states, including Coahuila, revealing soils well-suited for adobe production and other earth-based construction techniques. In Saltillo, light beige sandy clays of medium plasticity were identified, while in the Tunal clay bank, that is about six miles from Jamé, black clayey sands with similar plasticity were found. These findings confirm the regional availability of appropriate earth materials, supporting the potential for sustainable construction practices rooted in local resources and vernacular traditions.

Salman (2018, 57) states that elements of sustainable design are inherently embedded within vernacular architecture, which has evolved over time through the use of locally sourced materials and context-specific technologies. Arising from the interplay between natural conditions and cultural practices, these forms establish an optimal relationship between people and their environment.

Formal, material, and spatial changes can be read as signals of transformation, registering both the resilience and the reinvention of local architectural languages. This perspective reframes vernacular-modern hybrids not as transitional or deficient, but as critical artifacts within a design ecology that is continually adapting, learning, and projecting alternative futures.

Figure 09:
Combined Use of Industrial and Traditional Materials.

Gómez, 2025.

At the Edge of Tradition and Transformation

The analysis of vernacular architecture in Jamé reveals that rural built environments are not static remnants of the past but dynamic systems shaped by ongoing processes of material and cultural negotiation. The architectural transformations observed in the region demonstrate how local building traditions adapt in response to shifting environmental conditions, technological availability, and changing perceptions of modernity. Rather than representing

a simple replacement of tradition with contemporary construction methods, these changes illustrate a gradual process through which inherited knowledge and new materials are continuously reinterpreted.

One of the most visible manifestations of this transformation lies in the substitution or combination of traditional earthen construction with industrial materials such as concrete block, corrugated steel, framing in windows, and prefabricated components. While these materials are often introduced in pursuit of durability, status, or perceived modernity, they frequently alter the environmental performance and spatial logic that historically characterised vernacular dwellings. In this sense, the built environment of Jamé reflects an architectural landscape in transition, where material experimentation produces hybrid forms that negotiate between climatic adaptation, cultural aspiration, and economic practicality.

These hybrid architectures should not be understood merely as incomplete modernisation or as the erosion of vernacular traditions. Instead, they represent situated responses through which communities actively reinterpret their architectural environment. Vernacular architecture therefore operates less as a fixed typology than as an evolving system of knowledge embedded in everyday practices of construction, repair, and adaptation.

Understanding vernacular architecture in this way has important implications for contemporary architectural practice. Rather than treating vernacular forms as aesthetic references or nostalgic symbols, designers and researchers can approach them as repositories of environmental intelligence and culturally embedded spatial strategies. When critically engaged, these traditions offer valuable insights into developing architectural responses that are environmentally responsive, materially grounded, and culturally meaningful.

This study navigates the boundary between descriptive observation and interpretative analysis. While certain arguments regarding cultural meaning and identity are necessarily subjective, claims related to material performance and environmental behaviour are treated with caution and framed as context dependent. The case of Jamé illustrates how architectural modernity in rural contexts is often not directly imported but locally filtered through existing building traditions and material practices. These transformations should not be interpreted as failures or losses of vernacular knowledge, but rather as part of a broader, cyclical process of synergy between tradition and change, one that reflects a form of filtered modernity unique to this context. While traditional earthen construction has been replaced or combined with industrial materials, contemporary architectural discourse has also begun to re-engage with earth-based techniques, recognising their environmental performance and cultural significance. This suggests that material transitions in vernacular environments are not simply linear shifts from traditional to modern systems, but part of a recurring process in which older knowledge is periodically rediscovered and reinterpreted.

By situating vernacular architecture as a dynamic system shaped by time, culture, environment, cultural identity, and principles of sustainability, this research advocates for a more nuanced understanding of built form, not as a fixed artefact, but as an evolving practice rooted in place. In doing so, it highlights the value of design approaches that are not only ecologically grounded but also responsive to local needs for adaptation, ultimately bridging tradition and transformation.

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Figures

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