

Typo-Morphology Approach: A Strategy for Upholding Cultural Continuity in Architectural Design

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Abstract: Urbanization threatens the preservation of cultural heritage, leading to the loss of historical identity in built environments. This study explores the typo-morphology approach as a design strategy to uphold cultural continuity while accommodating urban development. Typo-morphology approach provides a framework for integrating cultural and historical characteristics into architectural design by analyzing the relationship between typology (building forms and types) and morphology (urban structures and spaces). Focusing on the San Fernando Heritage District in Pampanga, Philippines, the research examines dominant typo-morphological characteristics of heritage structures to integrate into contemporary architectural design. The research adopted a qualitative methodology, utilizing field observation, photographic surveys, and archival research, the study identifies recurring façade elements, spatial patterns, and structural configurations that define the architectural identity of the district. Through typo-morphological analysis, the study establishes a systematic approach to interpreting and applying these elements in new developments, ensuring design solutions that are both contextually grounded and adaptable to current needs. Further, the findings emphasize the significance of culturally responsive planning and sustainable conservation practices in maintaining architectural identity. The study underscored the importance of utilizing the typo-morphology approach in architectural design. The principles of contextual continuity, cultural preservation, spatial harmony, and sustainability were identified as guiding factors that can help integrate new architectural designs with the historical and cultural context of the heritage district. The research highlights the importance of balancing modernization with heritage preservation, ensuring that cultural narratives remain intact. Finally, this study provides valuable insights for architects, urban planners, and policymakers in fostering urban growth while protecting historical integrity and contributing to the broader discourse on sustainable development and cultural conservation.

Key Words: cultural heritage; cultural continuity; typo-morphology; heritage conservation, facade analysis

1. INTRODUCTION

1.1 Rationale

Urban design plays a crucial role in shaping a city's layout and aesthetics, significantly affecting

the quality of the community's physical environment (Lutfiana, 2023). It reflects cultural heritage, which embodies the values and histories of the communities (Syalan & Gürer, 2024). However, urbanization often neglects cultural sustainability, which Haripriya (2023) defines as the preservation of existing cultures

and their continuity. Cultural continuity is vital for maintaining historical traditions and is linked to cultural identity (Brown, 2003). Urbanization in the Philippines has led to the loss of architectural and cultural identity, with many historic buildings being demolished for new developments. Despite the recognition of these challenges, research and interventions in architectural preservation are limited. To address this, the study proposes using the typo-morphology approach, which Daher (2014) identifies as essential for preserving cultural identity and guiding interventions in heritage sites, thus enhancing the understanding of urban morphology in the face of urbanization challenges.

1.1.1 Typo-morphology Approach

The typo-morphology approach was a product of urban morphology and was used by researchers to examine the concepts of the built environment and building design many years ago (Jiao et al., 2023). The typo-morphology approach provides a framework for integrating cultural and historical characteristics into architectural design by analyzing the relationship between typology (building forms and types) and morphology (urban structures and spaces).

1.2 Objectives

The study addressed the gap in applying the typo-morphology approach to building design within the Philippine context, specifically contributing to the City of San Fernando, Pampanga. This research sought to identify the dominant typo-morphology characteristics of the City's heritage district and to apply these characteristics in the design of proposed buildings. It also identified the principles of the typo-morphology approach and utilized them to develop an architectural design relevant to contemporary architecture.

2. METHODOLOGY

The research adopted a qualitative methodology. It employed tools and methods, all guided by the principles of typo-morphology, to effectively apply this approach within architectural design.

2.1 Data Collection and Tools

The research utilized the following tools, which generated data that enabled the researchers to develop architectural solutions aligned with the application of the typo-morphology approach in architectural design.

2.1.1 Mapping Tool

The study used cultural heritage mapping and spatial mapping techniques to analyze the architectural characteristics of heritage buildings in selected locales. This method helped in understanding the contribution of architectural heritage to cultural identity and urban evolution (Pinzon Cortes, 2009; UNESCO, 2009; Jiao et al., 2023; Z.H Song et al, 2023) . The researchers used Google Street View, Google Earth, and local Comprehensive Land Use Plan to gather data and analyze architectural styles, materials, and spatial organization.

2.1.2 Field Survey, Building Facade Inventory and Photo mosaic

The researchers conducted a field survey to document heritage building facades' physical characteristics, focusing on architectural elements, material composition, and decorative details (Nelson, 1982; Jiao et al., 2023). A building facade inventory framework was developed using a checklist and frequency analysis to classify and validate structures (Nelson, 1982; Tang et al., 2019; Jiao et al., 2023; NHCP).

3. RESULTS AND DISCUSSION

This section analyzes and presents the findings to address the two research questions: (1) What are the dominant typo-morphology characteristics of the heritage district of San Fernando, Pampanga that can be utilized in designing the selected building types? and (2) What principles from the typo-morphology approach can be utilized in coming up with an architectural design?

3.1 Predominant Typo-Morphological Characteristics of Heritage Building Facades in the Heritage District of San Fernando, Pampanga

3.1.1 In terms of typological elements

The heritage district in San Fernando, Pampanga, is mapped for its architectural heritage. Twenty (20) architecturally influenced heritage buildings showcase the city's past. The investigation also revealed eleven (11) red-framed heritage sites with American Colonial architecture (Figure 1). The

façades of the year-grouped structures show all typomorphology qualities. Figure 2 shows how the photomosaic groups structures by building type and age. This architectural style enhances San Fernando's heritage district's visual character, making it important for tourism and historical preservation.

The Spanish-American War in 1898, which brought the Philippines under American sovereignty, changed urban planning and architecture. San Fernando City Ordinance No. 2004-003 of Section 4 declares that American and Spanish colonialism influenced important architectural and social systems. Finally, American Colonial architecture dominated San Fernando's history district due to careful urban design, new construction materials and methods, and socio-economic changes.

3.1.2 In terms of Morphological elements

The typomorphological analysis of eleven (11) documented heritage buildings in San Fernando, Pampanga, reveals dominant architectural elements that are characteristic of American Colonial architecture. These elements not only define the structural and visual identity of the city's heritage district but also offer valuable insights into its urban and architectural evolution. The findings are summarized Table 1, the documented morphological characteristics provide a strategic framework for the conservation and adaptive reuse of heritage structures, ensuring that future developments respect and integrate historical design elements while addressing modern requirements. This method was adapted from the study of Tang et al. (2018) which was utilized in facade restoration of heritage buildings. Hence, the result of the study emphasizes the importance of preserving key morphological features such as gable roofs, concrete-and-wood construction, sliding windows, and symmetrical façades.

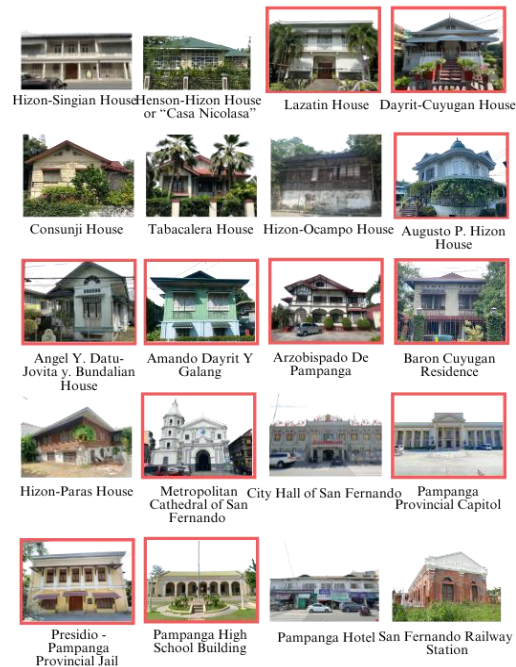


Fig. 1. The Selected Recurring Architectural Style of the Heritage Buildings in San Fernando, Pampanga adapted from the study of Tang et al. (2018).

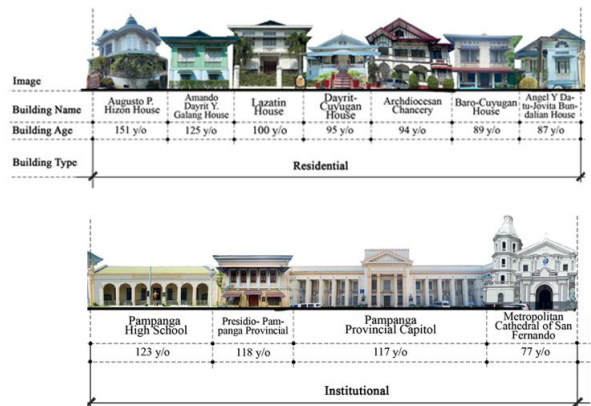


Fig 2. Photomosaic of Classified American Colonial Heritage Structures in San Fernando, Pampanga adapted from the study of Tang et al. (2018).

Table 1. Summary of Typomorphology Characteristics of Eleven (11) Heritage Building of San Fernando, Pampanga

Typomorphology Characteristics	Dominant Typomorphology Characteristics	Number of Occurrences
Typology elements		
Architectural Style	American Colonial	11

Building Type	Residential	7
	Institutional	4
Exterior Facade Condition	Altered	11
	Not Altered	0
Morphology Elements		
Roof		
Roof Style	Gable Roof	6
Material	Galvanized Iron/ Aluminum	11
Second Floor		
Wall	Wood	7
Door Style	Not Present	6
Door Material	Not Present	6
Window Style	Sliding Window	6
Window Material	Glass, Wood	5
First Floor		
Wall	Concrete	11
Door Style	Double Swing	8
Door Material	Wood	9
Window Style	Sliding Window	6
Window Material	Glass, Wood	5
Other Element		
Porch	Not Present	6
Handrail	Not Present	7

4. CONCLUSIONS

The study revealed that San Fernando's heritage district is marked by diverse architectural styles, with American Colonial architecture and features such as gable roofs, symmetrical facades, and wood-glass windows being predominant. These findings highlight the city's rich historical legacy and emphasize the need for its preservation in future architectural developments. Also, it underscored the value of the typo-morphology approach, identifying contextual continuity, cultural preservation, spatial harmony, and sustainability as key principles for integrating new designs within the historical fabric of heritage districts. Continued research will support the advancement of architectural practices that balance historical context with modern needs, promoting the long-term sustainability of heritage districts in the Philippines.

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