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LATENT URBAN HERITAGE ASSESSMENT IN SAIGON HO CHI MINH CITY THROUGH HISTORICAL CARTOGRAPHY AND URBAN MORPHOLOGY

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SUMMARY

Ho Chi Minh City, historically known as Saigon, is being redeveloped at a pace that places pressure on heritage values located beyond protected monuments and colonial-era buildings. This study examines how earlier hydrological, settlement, commercial, defensive, administrative, and metropolitan structures remain visible or latent in the present urban fabric. It applies a qualitative historical-cartographic and urban-morphological design informed by the Historic Urban Landscape approach. Historical maps and plans, archaeological and historical scholarship, contemporary morphological research, heritage studies, and current planning documents were compared across three analytical periods: the pre-colonial riverine landscape, the Nguyen dynastic city of Gia Dinh, and the modern metropolitan period. Five attribute groups were coded by form, function, association, continuity state, evidence confidence, vulnerability, and planning relevance. The analysis identifies four modes of survival—persistence, adaptation, overwriting, and latency—and shows that two long-duration systems provide the strongest cross-period continuity. The hydrological-commercial system linked waterways, landing places, markets, production, mobility, and everyday life. The defensive-administrative system linked citadel geometry, strategic routes, institutional compounds, and later street organization. Their traces are uneven and often fall outside conventional building inventories. The study contributes an operational use of the urban-palimpsest concept by connecting historical evidence to specific planning responses. It recommends a georeferenced multilayer heritage atlas, hydrological heritage corridors, archaeological sensitivity zones, interpretation of verified citadel lines, ensemble-based adaptive reuse, graded development controls, and participatory monitoring. These measures provide a practical basis for integrating layered urban history into metropolitan planning without Treating the city as a fixed historical artifact.

Key words: *historic urban landscape, urban morphology, historical cartography, latent heritage, cultural landscape, Saigon, ho chi minh city, heritage planning.*

INTRODUCTION

Urban heritage is becoming increasingly recognized as an interplay between form, environment, processes, memory, and governance, instead of stand-alone heritage sites. Urban transformation by means of reconstruction, infrastructural changes, immigration, and political reorganization transforms urban areas and leaves traces of former spaces such as streets, plots, rivers, toponymies, and culture [3][4].

Urban palimpsest theory offers a relevant conceptual tool to explore the process of cumulative urban development in which traces of the past can be preserved, adapted, overridden, or latent through spatial and collective memory. Traces of past spaces can have continuous influence on drainage networks, movement networks, land parcelling, and neighbourhood identity despite the disappearance of original spaces [8][9]. HUL research highlights the importance of inventorying heritage resources, identification of heritage values with the participation of stakeholders, vulnerability assessment, integration of results in the planning process, and monitoring of urban transformations [5][6][7]. Participatory and indicator-based approaches also show that community values and practices have to accompany heritage inventories of professionals [10][11][12].

Saigon offers an important example because of its rapid change in its metropolization process through a deltaic landscape influenced by the Saigon-Dong Nai River network and the extensive canal networks. Recent literature has identified changes in urban density, settlement patterns, open space distribution, and formal-informal morphology, as well as increasing pressure from infrastructural development and land-value transformation [13][15][16]. However, despite the progress in the area of heritage conservation, there still exist coordination problems with conservation, planning, and development efforts [17].

The terms “Saigon” is used for historical periods while the term “Ho Chi Minh City” refers to the present-day situation. In this research, three periods are selected for examination: riverine landscape of pre-colonial times, Nguyen administration and fortified-commercial landscape of Gia Dinh, and metropolitan landscape of modern times. These periods are not only analytical categories but also reflect overlapping environmental, cultural, and social dynamics.

A number of existing studies offer important information on the history, morphology, and heritage conservation of Saigon, Gia Dinh, and Cho Lon [13][14]. Nonetheless, history, morphology, and conservation have always been considered independently. Little research has been done concerning cross-period urban systems in which heritage value is sustained via spatial associations instead of individual buildings. It is with these considerations in mind that this paper has sought to present a methodology for analyzing layered urban heritage systems. The study addresses this gap through three questions. First, which spatial and cultural attributes characterize the principal historical layers of Saigon? Second, how have these attributes persisted, adapted, been overwritten, or become latent in the contemporary city? Third, which planning and conservation instruments are appropriate for each form of survival? The contribution is threefold. It operationalizes the palimpsest concept through observable continuity states; it identifies two long-duration morphological systems that connect the city’s major historical periods; and it links evidence confidence and vulnerability to feasible planning responses. Chronological sequence of the various layers of history is presented in figure 1, showing the progression from the riverine settlements and kingdoms to the modern metropolis.

This analysis addresses the historical core, along with its functional expansion into Cho Lon and the major canal networks. This region exhibits the most pronounced convergence of elements relating to riverfront settlement, Nguyen defensive and commercial structures, colonial reorganization, post-conflict development, and present-day redevelopment. The purpose is not to assess Outstanding Universal Value or to suggest a nomination for World Heritage Site listing.



Figure 1. Analytical timeline of major urban-cultural layers from preynokor to contemporary ho chi minh city

Source: Authors

Rather, this analysis offers an objective assessment of urban features which can serve in municipal inventory, archaeology, urban design, adaptive reuse, and development control. The policy environment makes the research more relevant. The Ho Chi Minh City Planning for 2021–2030, with a vision to 2050, was approved in December 2024, and the adjusted General Plan to 2040, with a vision to 2060, was approved in June 2025 [1]. These plans create a current opportunity to connect cultural landscape evidence with spatial development, river-corridor management, climate adaptation, and public-space provision. The city's historical relationship with water is also relevant to present flood exposure, land subsidence, drainage, and ecological resilience.

The following sections describe the evidence protocol, present the three historical layers, synthesize the two long-duration systems, and translate the findings into planning actions. The central argument is that heritage significance in Saigon–Ho Chi Minh City lies not only in surviving buildings but also in the relational morphology that connects waterways, markets, routes, institutions, and community practices across time.

In general, this study advances the body of literature in the field of architecture and urban planning with respect to creation of the comprehensive methodology to recognize and manage the latent heritage urban systems in addition to traditional conservation approaches which concentrate solely on monuments. As opposed to traditional heritage evaluations that pay attention only to individual building structures or protected territories, the proposed methodology implies evaluation of the historical spatial relations which include such components as water bodies, settlement patterns, commercial links, administrative structure and others.

The rest of this paper is structured as follows. The section 2 provides the literature review of recent research, the section 3 provides the materials and methods which include the protocol of historical cartographic evidence, comparison analysis procedure, and heritage attributes evaluation framework. The section 4 considers the identified urban heritage layers as well as synthesizes the main long-duration systems. The section 5 examines the significance of these systems, provides planning recommendations, implementation mechanisms and monitoring procedures. The conclusion is provided in Section 6.

LITERATURE REVIEW

Recent research on urban heritage management highlights the need to move beyond monument-based conservation toward integrated approaches that consider historical landscapes, urban morphology, social values, and sustainable development. The Historic Urban Landscape (HUL) approach provides a comprehensive framework for managing heritage within rapidly transforming cities by integrating cultural, environmental, and socio-economic dimensions into planning processes [3][5][6]. Furthermore, recent research stresses that an appropriate urban heritage management process is based on systematic recognition of heritage values, stakeholder participation, and decision-making procedures supported by scientific evidence [7][10][11].

The use of digital technologies and GIS applications has become crucial for comprehensive documentation and heritage management of complex heritage sites. Application of the trends of digitalization, spatial databases and participatory mapping methods allows increasing the efficiency of heritage documentation and integration of historical data into contemporary planning systems [1][10][11]. Urban morphology research shows that spatial patterns of history such as streets, plots, watercourses and buildings allow to understand urban transformation and create conservation strategies.

Research on Ho Chi Minh City demonstrates a considerable transformation of urban form, water-based spatial system and cultural heritage landscape due to the colonial past, modernization and fast metropolitan development [22]. In addition, the problem of preservation of historic urban structure and cultural identity in conditions of rapid development is discussed [16][17]. Furthermore, comparative heritage research also suggests that sustainable urban development should be based on adaptive reuse and climate-responsive planning and take into account local community values [12][17]. Even though current literature provides useful perspectives on heritage conservation, urban form and digital documentation, not much consideration has been provided in regards to concepts which systematically link multi-period evidence to assessment of continuity and vulnerabilities. Therefore, this study addresses this gap by proposing an integrated approach for identifying latent urban heritage systems and translating historical spatial knowledge into sustainable urban planning interventions.

MATERIALS AND METHODS

Research Design and Case Boundary

The study used a qualitative historical-cartographic and urban-morphological design. Urban morphology was used to examine relationships among waterways, routes, plots, blocks, built forms, centers, and institutional locations. Historical maps were treated as situated documents produced for particular administrative, military, or planning purposes rather than as neutral records. The study boundary comprised the historic central area, the Saigon–Cho Lon connection, and the main river and canal corridors where they shaped settlement, trade, defense, or metropolitan expansion. The entire process chain from the gathering of historical evidence, through heritage attributes appraisal, to systems identification and strategies formulation is depicted in figure 2.

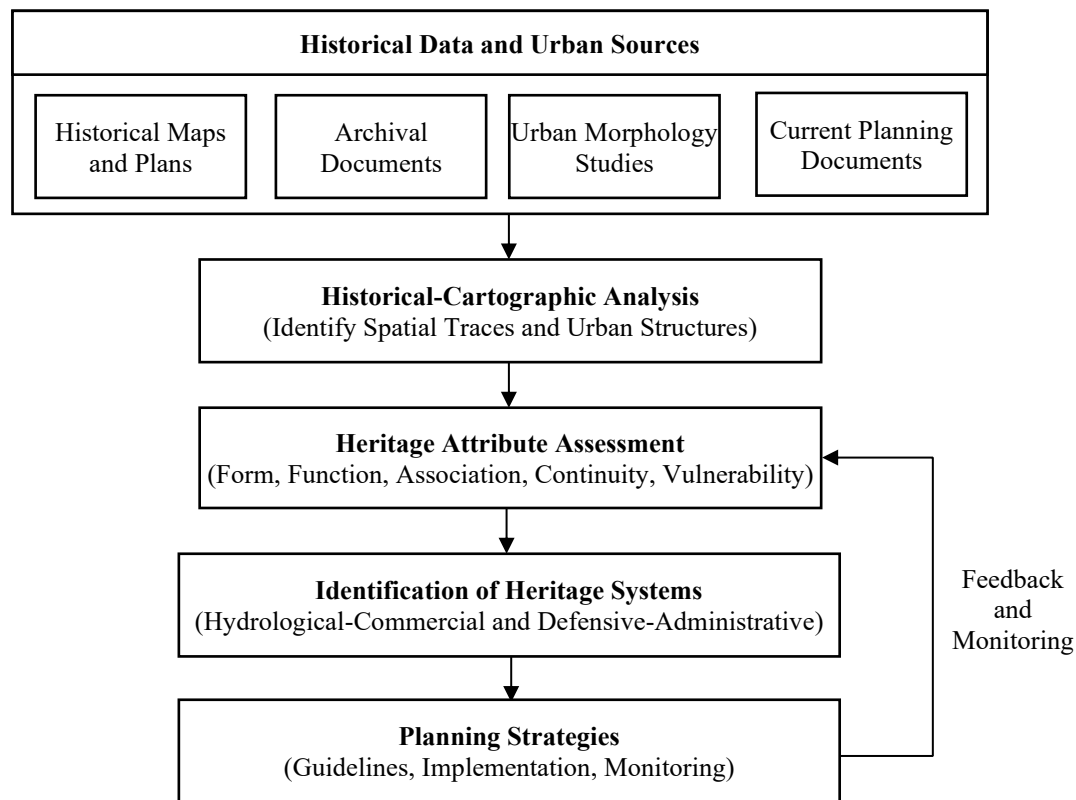


Figure 2. Conceptual framework for latent urban heritage assessment and planning

Figure 2 shows the proposed methodology for the identification and management of the latent heritage system in urban contexts. This methodology starts from the historical evidence collection that consists of the collection of maps, archives, studies of urban morphology, and planning documents. The collected evidence undergoes historical cartography analysis to uncover spatial evidence and urban structures. After that, the heritage system attributes are evaluated according to form, function, association, continuity, and vulnerability. The heritage systems identified are assessed in order to develop the planning strategies that consist of implementation guidance, monitoring, and conservation intervention.

Evidence Corpus and Selection

The evidence corpus comprised four source groups: historical maps and plans reproduced in traceable scholarly or archival publications; historical and archaeological studies of southern Vietnam, Gia Dinh, Saigon, and Cho Lon; peer-reviewed research on urban morphology, water systems, heritage, climate risk, and planning; and current government planning documents. Sources were included when they offered dateable evidence concerning spatial form, function, cultural association, or institutional change. General-interest websites were not used as analytical evidence unless they provided access to an identifiable original document. Where accounts differed, the analysis used cautious wording and prioritized interpretations supported by more than one source group.

Comparative Cartographic Procedure

The comparative analysis involved four stages. The first stage was the identification of constant natural features such as the Saigon River and Ben Nghe-Tau Hu and Thi Nghe-Nhieu Loc corridors. The second stage entailed the recognition of man-made features such as fortifications, roads, canals, markets, ports, civic enclaves, and settlement concentrations. The third stage involved relative orientation between the maps to determine consistency, adaptation, displacement, infill, and superposition. The fourth step involved cross-checking the cartographic findings with the historical accounts and contemporary morphological studies. As the maps vary in scale, projection, orientation, and purpose, visual inconsistencies on the maps were not treated as physical disappearance.

Coding, Continuity States, and Evidence Confidence

The attributes were classified into five categories: built environment and public spaces; social fabrics and identities; culture and daily lives; business and industries; and governance, defence, and public orders. Every attribute was evaluated using criteria including location, form, function, meaning, continuity state, current legibility, vulnerability, and planning significance. Four continuity states were identified: persistent, in which the key spatial relation was visibly legible; adapted, in which the spatial relation was still preserved despite any changes in the form or function; overwritten, in which the recent development largely replaced the previous one; and latent, in which the former structure is identifiable through alignment, subsurface, names or memories.

Table 1. Analytical framework for identifying and assessing layered urban heritage attributes

Attribute Group	Observable Evidence	Assessment Focus	Planning Use
A. Built environment and public space	Waterways, streets, plots, buildings, markets, and public spaces	Identify persistent, adapted, overwritten, and latent spatial relationships	Inventory, adaptive reuse, urban design, development control
B. Social fabric and identity	Communities, institutions, memories, place names, and cultural networks	Assess continuity of social associations and meanings	Participation, social impact assessment, community protection
C. Culture and everyday life	Religious sites, festivals, practices, routes, and traditions	Examine continuity and transformation of cultural practices	Heritage interpretation, access, culturally compatible reuse
D. Business and industry	Markets, ports, workshops, shophouses, and production networks	Evaluate economic influence on urban form and identity	Commercial heritage, mixed-use planning, small-business support
E. Governance, defense, and public order	Citadels, boundaries, institutions, and strategic routes	Assess remaining administrative and defensive spatial traces	Archaeological review, institutional reuse, heritage-sensitive controls.

The confidence of the evidence was categorized into high, moderate, and low. The criterion of high confidence is the independent evidence converging on an interpretation or the relation between dated map and verified history.

Table 2. Operational rules for continuity states and evidence confidence

Dimension	Category	Operational Rule	Interpretive Caution
Continuity state	Persistent	Spatial form and relationships remain legible over time.	Does not imply unchanged fabric or use.
Continuity state	Adapted	Earlier relationships continue through modified form or function.	Requires evidence of continuity
Continuity state	Overwritten	Earlier layers are replaced but retain historical relevance.	Avoid unsupported survival claims.
Continuity state	Latent	Earlier structures are inferred from traces, memory, or alignments.	Requires uncertainty mapping and verification.
Evidence confidence	High / Moderate / Low	High: multiple sources; Moderate: partial evidence; Low: indirect or contested evidence.	Measures interpretation strength, not cultural value.

Moderate confidence means that the interpretation is credible and partially verified but there are alterations and insufficient evidence. Low confidence refers to indirect, localized or contested evidence. The classification system ranks the reliability of the interpretation but not the importance of the epoch. Procedures for assessing layered urban heritage attributes have been described in tables 1 and 2.

Lastly, cross-period analysis was conducted on the basis of attribute comparison to detect reoccurring systems as opposed to survivals. Emphasis was placed on those attributes that were still applicable to planning even though their physical forms had been destroyed. These findings formed the basis of the conservation strategies discussed in Section 4.4. This research has the following constraints: inconsistent accuracy of maps; reproduction of several historical images from secondary sources; and lack of oral history, archaeology, and parcel-level GIS data.

RESULTS

The Pre-colonial Riverine Landscape: Regional Exchange and Prey Nokor

The earliest layer relevant to Saigon is better understood as a riverine cultural landscape than as a dense city comparable to later periods. During the Funan and Oc Eo eras, waterways connected inland production, delta settlements, and maritime exchange across southern Vietnam and mainland Southeast Asia. Archaeological distributions indicate a networked regional landscape rather than a single dominant urban center at the location of present-day Ho Chi Minh City [18]. The Saigon–Dong Nai system nevertheless had strategic value as a passage among the coast, the lower Mekong, inland areas, and routes toward Cambodia and Champa. Figure 3 shows the geographical location of these initial cultural systems while figure 4 depicts the archaeological evidence associated with the Oc Eo culture.



Figure 3. Regional position of the funan and khmer polities in relation to the lower mekong and the saigon area

Source: Adapted by the authors from [18]

Historical accounts commonly associate the later settlement of Prey Nokor with a Khmer trading place near the waterways that framed the future urban core. Place-name meanings and locations vary across languages and later sources, so they should not be treated as precise archaeological coordinates. From the morphological perspective, the better-argued interpretation is that of settlement logic; i.e., occupation clustered along the bends of rivers, natural levees, canal openings, and landing sites where the activity of fishing, farming, transport, and trade could be combined.

The toponymic evidence provides proof of the influence of Khmers and other regional groups by names related to rivers, vegetations, landing sites, and local practices. Names have intangible value insofar as they are associated with the knowledge and language used for navigating the landscape. Their survival, translation, or replacement is a part of the palimpsest, even if there is not much tangible evidence around.



Figure 4. Distribution of documented oc eo-related archaeological sites in southern Vietnam.

Source: Adapted by the authors from the archaeological synthesis in [18].

Evidence also implies a socially diverse frontier landscape where Khmer, Chinese, Cham, Vietnamese, and local people intermingled through time.

The increasing migration and trade of the Vietnamese at this time took place in the context of political arrangements between the Nguyen Lords and the Cambodian court. As described in the historical literature, customs stations and settlements were established along the Saigon River and its channels, leading to a gradual process of administration and incorporation [18]. The crucial transformation did not involve any event of foundation but rather the consolidation of a water-based contact zone into an organized settlement and economic environment. There are three features that proved to be lasting: reliance on water routes, inter-ethnic interaction, and a scattered system of marketplaces, shrines, and productive settlements. Synthesis of the evidence of all these features, together with the aspects of persistence and vulnerability, is provided in table 3, while confidence level and verification procedures are shown in table 4.

Table 3. Evidence synthesis for the pre-colonial riverine layer

Attribute	Evidence and Principal Function	Continuity State	Main Vulnerability
Hydrological structure	Rivers, canals, levees, and landing places supported movement and exchange.	Persistent; locally adapted.	Canal loss, pollution, and edge redevelopment.
Settlement and public space	River-oriented settlement nodes shaped early urban development.	Latent to adapted.	Limited archaeological mapping and channel loss.
Social fabric and identity	Diverse communities formed shared cultural landscapes.	Persistent in association.	Loss of memory and place identity.
Culture and everyday life	Water-based practices, livelihoods, and traditions shaped daily life.	Adapted and latent.	Weak documentation and knowledge loss.
Business, governance, and defense	Trade, agriculture, and strategic routes connected regional networks.	Persistent at route scale.	Unverified locations and archaeological disturbance.

The pre-colonial layer is one for which there are few architectural relics that can be definitely linked to this time, although its geographical form retains significance. The Saigon River and the Ben Nghe/Tau

Hu and Thi Nghe/Nhieu Loc waterways continued to dictate patterns of later settlement, commerce, and fortification. Successive regimes would channelize, expand, fortify, or infill aspects of this pattern while still preserving its essence. This dichotomy between physical preservation and morphological preservation is key to the research. Where structures have not survived, preservation involves landscape connections, archaeology, toponymy, public access, and interpretation.

Table 4. Evidence confidence and verification needs for the pre-colonial layer

Claim Type	Available Evidence	Confidence	Verification Need
Major river corridors	Stable geographic features across maps and urban development.	High	Link historical channels with current hydrological data.
Prey Nokor settlement logic	Historical records, place names, and environmental evidence.	Moderate	Archaeological and historical-GIS validation.
Specific early building locations	Limited direct material or cartographic evidence.	Low	Avoid fixed claims without verification.
Multiethnic exchange	Historical accounts and settlement studies.	Moderate to high	Participatory mapping and documentation.
Early strategic functions	Regional routes and later defensive use.	Moderate	Separate strategic interpretation from unverified sites.

The Nguyen Dynastic Layer: Canals, Commerce, and the Fortified City of Gia Dinh (Seventeenth Century–1859)

Migration of the Vietnamese and the consolidation of the territorial/administrative system under Nguyen control changed the inherited landscape of the rivers into that of a more official territorial and urban landscape. The creation of administrative divisions by Nguyen Huu Canh in 1698 marks the inclusion of Gia Dinh into the state of southern Vietnam [18]. This did not lead to the formation of an urban landscape in a blank space. Rather, it increased the existing landscape of the routes, landing sites, agriculture, and multiethnic trade as show in figure 5 (a)(b).

Canal construction and improvement were central to this transformation. The Ruot Nguia Canal, associated with Nguyen Cuu Dam in the eighteenth century, and later improvements to the Tau Hu system strengthened links among the Saigon River, Cho Lon, and the Mekong Delta [18]. These works supported the movement of rice and other goods, drainage, settlement expansion, and defense. Markets, warehouses, workshops, boat landings, and narrow commercial plots developed along the waterways. The canal network therefore operated simultaneously as infrastructure, economic space, and cultural landscape. Built form responded to climate, materials, water access, and mixed economic use.

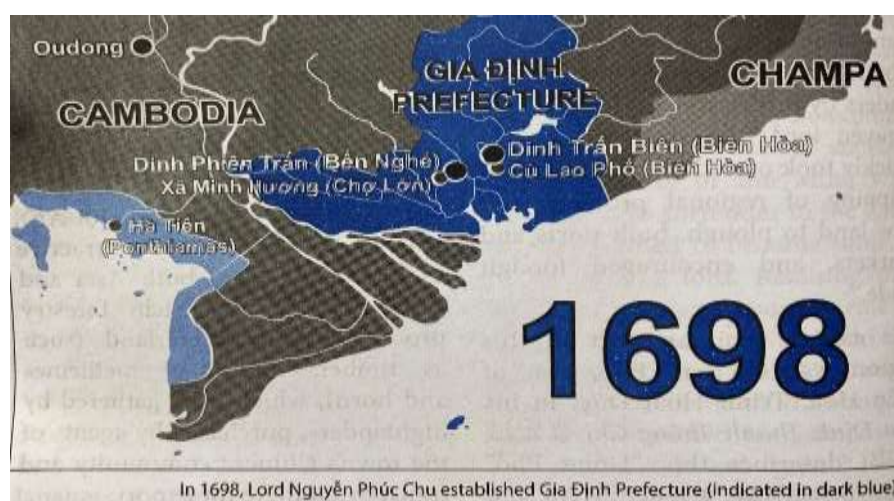


Figure 5(a). Administrative expansion of gia dinh in 1698



Figure 5(b). Expansion of nguyen administrative control in 1770

Source: Adapted by the authors from [18].

River and canal settlements used raised or stilted construction in low-lying locations, while denser commercial areas developed narrow plots with shopfronts, rear production or storage spaces, and access to landing places. Religious buildings and community halls reflected the presence of Vietnamese, Chinese, Khmer, and other groups. Although most structures have been replaced or altered, the relationship among narrow plots, mixed use, neighborhood commerce, and water access remained influential in Cho Lon and older districts [2][19].

The dynastic city also developed a strong defensive-administrative structure. Fortifications did more than enclose military compounds: they controlled approaches, organized roads, concentrated institutions, and defined relations between the state center and surrounding settlements. This combined system of fortified authority and commercial activity distinguishes Gia Dinh from a simple citadel settlement and helps explain why later governments continued to use nearby strategic and institutional locations after the fortifications disappeared.

Nguyen Phuc Anh ordered the construction of the Bat Quai Citadel in 1790. Bat Quai Citadel along with its geometry reconstruction and association with urban roads are illustrated in figures 6 and 7 whereas the evolution of Gia Dinh Citadel is demonstrated in figure 8. Historical accounts describe an eight-sided fortification influenced by European military knowledge but adapted to local political and environmental conditions [18]. The growth of the administrative system of Gia Dinh is shown in Figures 5(a)(b). Its geometry, gates, internal axes, and surrounding routes established a strong spatial order. The citadel was later destroyed and replaced by a smaller nineteenth-century fortification, but the successive defensive landscapes continued to affect routes, large parcels, and the concentration of civic and military functions.

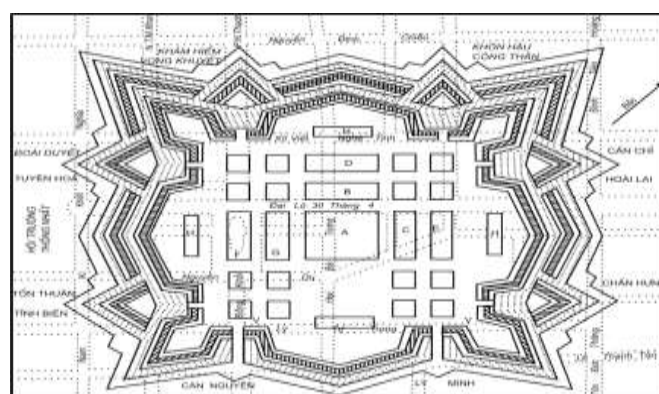


Figure 6. Reconstructed plan of the bat quai citadel, 1790

Source: Historical reconstruction discussed in [18].

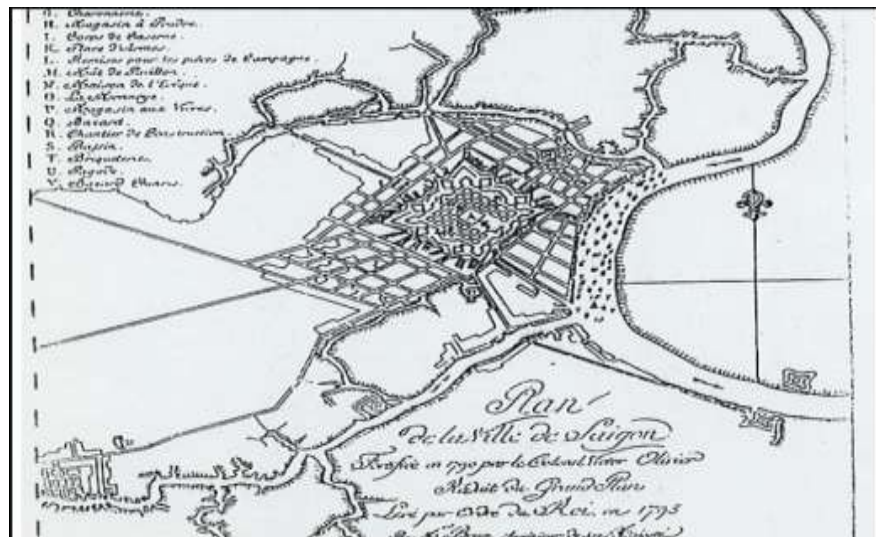


Figure 7. Le brun's 1795 plan showing the bat quai citadel in relation to the saigon river and surrounding routes

Source: Historical plan reproduced in [18].

Outside the citadel, Gia Dinh developed through specialized production and trade. Historical accounts identify neighborhoods associated with fishing, pottery, metalwork, textiles, boat services, food processing, and other occupations [19]. Chinese commercial communities became increasingly concentrated toward Cho Lon, which developed as a major market and distribution center. The urban landscape was therefore polycentric: the administrative-military center, the river port and markets, and the commercial-production landscape toward Cho Lon were connected by canals and roads. This arrangement anticipated the later Saigon–Cho Lon metropolitan structure.

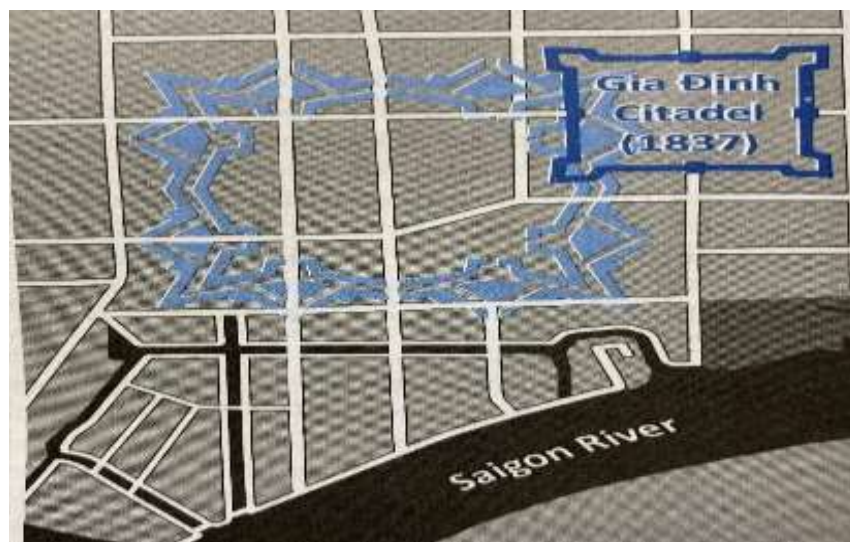


Figure 8. Relative position of the smaller gia dinh citadel of 1837 and the earlier fortification

Source: Adapted by the authors from [18].

The dynastic layer made three durable contributions. First, it converted inherited waterways into a managed transport, drainage, and production network. Second, it established a polycentric relationship among the citadel, river port, markets, craft districts, and Cho Lon. Third, it introduced defensive boundaries and axes that conditioned later streets and institutional sites. Although the citadels have been almost wiped out, the influence can still be sensed in terms of alignments, broken roads, large compounds, and potential archaeology sites. The following table, table 5, shows the necessity of synthesis and verification for the Nguyen Dynasty layer.

Table 5. Evidence synthesis and verification priorities for the nguyen dynastic layer

Feature	Evidence and Principal Function	Continuity State	Main Vulnerability
Managed canal network	Ruot Ngua, Tau Hu, and connected channels supported transport, drainage, trade, and settlement.	Persistent and adapted.	Protect corridor relationships and verify historical alignments.
Citadel morphology	Bat Quai and Gia Dinh fortifications shaped axes, institutions, and strategic spaces.	Overwritten and latent.	Conduct GIS and archaeological verification before boundary marking.
Polycentric urban structure	Citadel, port, markets, craft areas, and Cho Lon formed connected urban centers.	Persistent and adapted; High confidence.	Preserve historic center relationships and morphology.
Social and cultural institutions	Community institutions, temples, associations, and foodways reflected diverse identities.	Persistent in selected areas; Moderate confidence.	Support community-based conservation and documentation.
Commercial-production morphology	Markets, workshops, shophouses, and occupational streets linked water and land routes.	Adapted with corridor continuity; Moderate–High confidence.	Apply form-based controls and support local businesses.

The Modern Metropolitan Layer: Colonial Restructuring, Post-War Change, and Contemporary Redevelopment (1859–Present)

French forces captured Gia Dinh in 1859, and Saigon subsequently became the administrative center of colonial Cochinchina. The destruction of the citadel created a political rupture and enabled large-scale spatial restructuring. Coffyn's 1862 proposal and later colonial plans introduced a more regular street and block system, sanitary works, civic institutions, military compounds, and landscaped public spaces [18][20]. The colonial city nevertheless did not begin from a blank surface. Its port orientation, street directions, canal works, and expansion toward Cho Lon were conditioned by the inherited riverine and defensive landscape.

Colonial modernization changed the relationship between waterways and roads. Figure 9 (a) (b) illustrates how both Saigon and Cho Lon underwent changes during the period from 1865 to 1930, illustrating the relationship between legacy and urban planning. Some canals were enlarged or constructed to support port and commercial activity, while others were filled to create streets, boulevards, markets, railway land, and building sites. In Cho Lon, the systems of Lo Gom and Tau Hu continued to facilitate trading activity. In central Saigon, the filling in of canals and roads lessened the prominence of the amphibian layout. Water was still important for the logistical operations of the metropolis, although the representational heartland placed an increasing focus on avenues, squares, and architecture [18][20][21]. While Saigon and Cho Lon were both characterized with urban identity, there was a distinction between them in terms of their urban identity. In Saigon, the administrative, military, financial, educational, and cultural facilities were located while in Cho Lon, its morphology consisted of commercial and industrial facilities, shaped by Chinese community facilities and markets, warehouse and canals, and shophouses. The integration of the administration did not lead to the elimination of this difference between them [2][18][19].

The grid structure was visibly superimposed upon older forms. At locations where streets had to intersect with existing waterways, village paths, and fortifications, block sizes became irregular, streets changed direction, and large institutions held oddly-sized parcels of land. The importance of these dissonant forms is that they show the interaction between layers of development. It is not in their completion but in their relationship to each other that their significance resides.

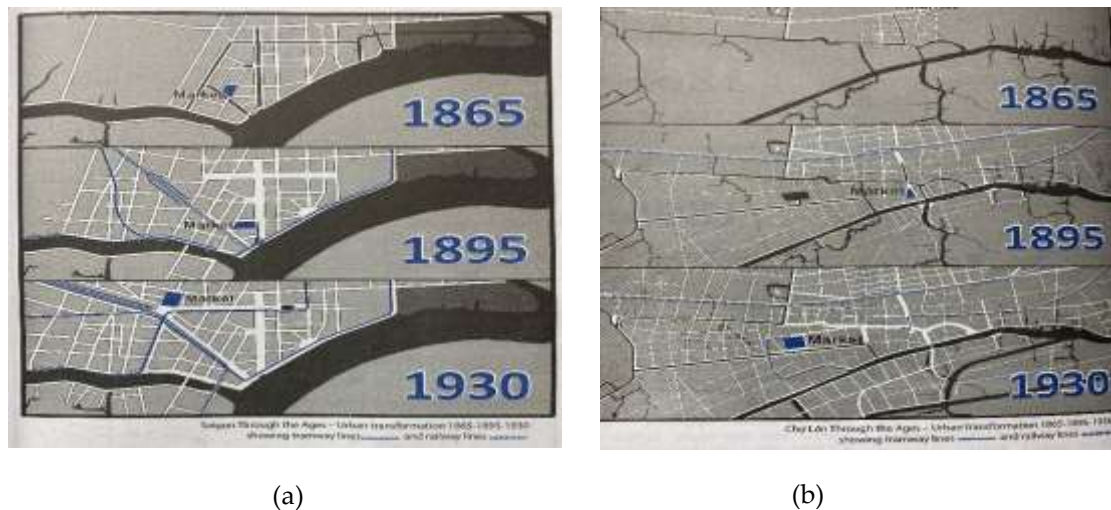


Figure 9(a) & 9(b). Comparative transformation of cho lon (left) and saigon (right), 1865–1930

Source: Maps reproduced in [18].

Following the year 1954, the factors of population growth, war construction, military and residential complexes, and informal settlements modified the colonial city. The banks of canals became places of intensive development, where infrastructure was often insufficient. After 1975, particularly since the economic redevelopment, expansion of the city took place both horizontally and vertically. Widening of roads, large projects, and high-rise constructions added pressure to historic sites [13][14][15][16].

Table 6. Modern metropolitan layer and long-duration heritage systems

Feature / System	Evidence and Continuity	Vulnerability / Current Expression	Planning Response
Colonial grid and civic landscape	Streets, boulevards, public spaces, civic buildings, and compounds adapted earlier structures.	High-rise pressure, block changes, and loss of urban ensemble.	Heritage-sensitive urban design and development control.
Saigon–Cho Lon urban structure	Administrative, civic, commercial, and community functions formed connected centers.	Gentrification, displacement, and weakening community	Ensemble protection, adaptive reuse, and mixed-use continuity.
Canal and hydrological system	Waterways were maintained, modified, filled, and rehabilitated across periods.	Loss of drainage paths, access, and historical interpretation.	Hydrological heritage corridors, blue-green infrastructure, and public access.
Defensive-administrative system	Citadels, routes, and institutional compounds shaped urban morphology.	Archaeological uncertainty and loss of spatial traces.	Historical-GIS verification and archaeological sensitivity zones.
Commercial-production landscape	Markets, warehouses, shophouses, and occupational streets linked water and land networks.	Land pressure and replacement of local businesses.	Adaptive reuse and small-business-sensitive conservation.
Intercultural social landscape	Communities created institutions, practices, place names, and cultural identities.	Decline of community links and living heritage.	Participatory mapping and community-based interpretation.
Latent morphological traces	Former canals, citadel lines, parcel patterns, and memories remain embedded in the city.	Fragmented governance and redevelopment pressure.	Heritage atlas, uncertainty mapping, and design review mechanisms.

Later on, rehabilitation of canals has shown that deteriorated infrastructure may be rehabilitated as a public space and environmental system, yet at the same time, it has brought changes in the social functions and edges. Modern layer is therefore a sequence of restructuring, deterioration, rehabilitation,

and increased redevelopment instead of one continuous period. Table 6 presents a summary of the modern metropolitan layer with relation to the heritage system.

Among the three stages, there are two systems that exhibit significant continuity. Long-standing systems, along with their planning implications, have been depicted in table 6 to establish the relation between history, vulnerability and interventions. Hydrological-commercial system includes rivers, canals, landing points, markets, production areas, and water-related settlements. Defensivadministrative system includes borders, axes, routes, fortifications, civic complexes, and institutional clusters. There was an interaction of these two systems rather than separate development of each one: waterways served both the purpose of commerce and defense; citadels governed the routes and exchanges, while the colonial planning converted the canals but not the orientation.

DISCUSSION

The hydrological-Commercial Morphology: Continuity Through Adaptation

Saigon is frequently referred to as the city next to a river. However, the historical morphogenesis of Saigon should be defined as that of a city created by water. Water, in the form of rivers and canals, structured habitation, transportation, drainage, production of food, manufacturing activities, religious practices, commercial transactions, and even defense. The initial riverine environment created a flexible network of nodes and lines, which were strengthened by Nguyen transformations and selectively engineered, maintained, infilled, or modified by colonial and subsequent planning activities.

This is the reason behind the polycentric growth pattern of the city. The administrative district, the river port, the Cho Lon commercial district, the craft districts, and subsequently the industrial districts were all linked through the waterways prior to the dominance of roads as the mode of transportation. The linkages between the waterways and defense systems may be witnessed from the French reconnaissance map of Saigon (Figure 10). This is because the water-oriented urban system remained relevant in the colonial period as well. The markets emerged at the meeting point of regional waterways and local streets, while the shophouses and warehouses reflected both the land and water orientation [4][21]. Treating these dimensions separately would obscure the historical mechanism that linked them.

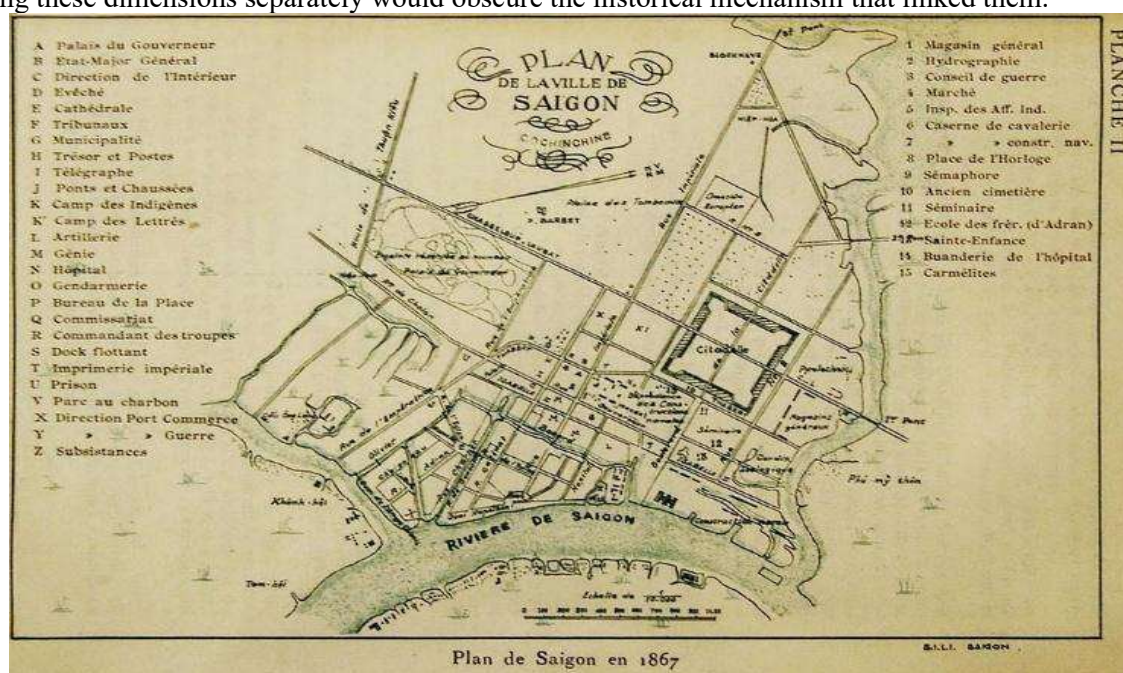


Figure 10. French reconnaissance plan of Saigon, 1867, showing the river, canals, routes, and former defensive landscape

Source: Historical map cited in [18].

Canal infilling produced a hydrological palimpsest. Some former channels survive as streets, open spaces, plot boundaries, depressions, or remembered place names. The modifications made to the canal system and development of the urban street network can be seen once again in the 1892 map of Saigon illustrated in figure 11. Others remain underground or are visible only through historical maps. These latent features have current planning relevance because historical drainage paths may correspond to flood-prone land, opportunities for water retention, ecological connections, and public-space networks. Recent research on water-based morphological change and deltaic risk supports the integration of historical spatial knowledge with contemporary adaptation [22].



Figure 11. Saigon in 1892, including the canal de ceinture and the expanding street network

Source: Historical map reproduced in [18].

Canal rehabilitation since the late twentieth century has improved water quality, mobility, embankments, and public space along the Nhieu Loc–Thị Nghe, Tau Hu–Ben Nghe, and related corridors. However, previous eras of informal settlement and environmental damage have radically changed the condition of the canal edge environment, as shown in figure 12, which depicts the degradation of the canal environment in the era of the Republic of Vietnam. These projects demonstrate that water infrastructure can be treated as an environmental and urban-design system rather than as drainage alone. However, standardized embankments can remove landing places, informal uses, vegetation, and neighborhood memory. Rehabilitation should therefore document culturally significant access points, views, activities, and names before design decisions are fixed.

The appropriate conservation response is not the wholesale reconstruction of lost canals. Such an approach would be physically, environmentally, and socially unrealistic. The aim is to recover the logic of the network through differentiated actions: protect surviving corridors; mark selected filled channels in paving, planting, or stormwater design; retain public and visual access; restore ecologically useful water edges; and interpret historical functions.



Figure 12. Informal housing and severe canal degradation during the republic of vietnam period

Source: Authors' image archive.

An example of the integration of heritage, environmental enhancement, and public space design into modern-day city planning is the recent rehabilitation of the Nhieu Loc-Thi Nghe Canal (Figure 13). This approach can combine heritage, mobility, climate adaptation, and public space without freezing the city in an earlier form.



Figure 13. Nhieu Loc–Thi Nghe Canal after environmental rehabilitation and public-space improvement

Source: Authors' image archive.

The 2024 and 2025 planning approvals give this approach institutional relevance [1]. River corridors, floodable landscapes, open-space networks, and urban-design controls can incorporate heritage evidence at metropolitan and neighborhood scales. The immediate requirement is a georeferenced inventory that links historical maps with current parcels, drainage, public spaces, buildings, planning projects, and community values. Without such an inventory, water heritage may be acknowledged in policy while its remaining traces continue to be removed through individual development decisions.

The Defensive-Administrative Morphology: Rupture, Reuse, and Latent Structure

The defensive history of Gia Dinh should not be reduced to a sequence of battles or treated as an abstract symbol of authority. The importance of this monument within the urban landscape is due to the interconnection between defense, administration, transport and settlement. The Nguyen fortifications were created taking into account the location near the rivers and canals, control of access points, concentration of state structures and organization of the routes surrounding the city. The colonial authorities demolished the big citadel but utilized the key points and built military and administrative compounds.

This process created discontinuity and at the same time continuity in the urban landscape. The Bat Quai Citadel vanished, but the site where it was located is still important because of the street orientation, large institutions' lots, the archaeological potential and historical memory of the people. The small citadel of the nineteenth century changed the cityscape before the colonial grid was established. The place where they overlapped kept the changes in orientation, blocks and lots. Luy Ban Bich and Ruot Ngua canal are good examples of how much defensive infrastructure was connected to productive one. It delineated the area, facilitated movements and irrigation, and also affected future western extension [18]. The visualization of the relation between the citadel, defense lines, channels of water, and transport ways in the period of Nguyen dynasty is presented on figure 14. Information is scattered and some connections are still disputable. That is why conservation should start from the cartographic and archaeological verification of the information instead of visualization.

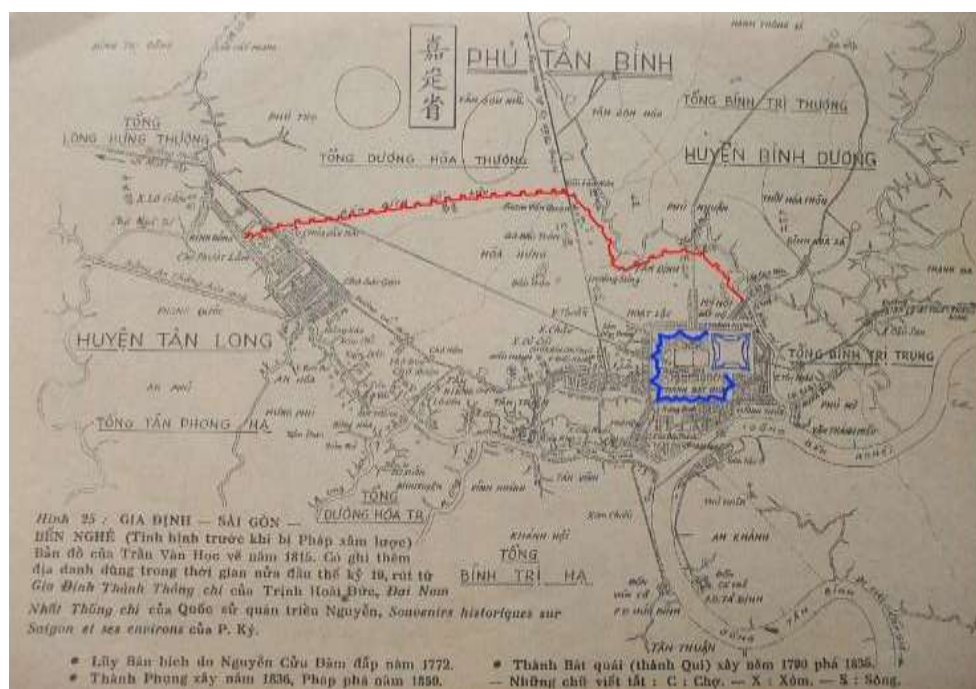


Figure 14. Gia dinh in 1815, showing the citadel, luy ban bich, waterways, and routes

Source: Historical map discussed in [18][20].

Following the French conquest, the project by Coffyn and others would transform the defensive setting into a city that is civic and military. The regular grid became a symbol of new political power but was still constrained in its extent and positioning by the Saigon River, Thi Nghe and Ben Nghe water bodies, and the directions towards Cho Lon [18][20]. It meant that there was an overlaying rather than replacing of the old configuration on the new one.



Figure 15. Military housing on Nguyen Van Thoi Street (now Ly Thuong Kiet Street), 1970

Source: Authors' image archive.

In addition, during the Republic of Vietnam phase, there were also military installations and camps. Figure 15 illustrates the transformation process of military-based spaces where previous defense spaces impacted future urban development processes. In some cases, military-based areas were used for civilian purposes, while in other cases, these areas still belonged to public institutions or military bodies. These spaces could be either sensitive or contested sites that are hard to reach. It is essential to develop an unbiased strategy of conservation that would register both the spatial significance of the space and reuse, along with multiple memories without militarizing the city.



Figure 16. Naval vessel on the Saigon River in 2019, illustrating the river's continuing strategic and ceremonial use.

Photograph: Authors.

The defensive-administrative system is significant at three scales: city-scale boundaries and strategic routes; district-scale compounds and institutional clusters; and site-scale archaeological remains, reused buildings, and memorial associations. The strategic and symbolic association between the Saigon River and urban governance is depicted in figure 16, which illustrates the continued importance of the river beyond its former defensive purpose. Protection of a few standing structures cannot explain these relationships. A landscape-scale approach is required to connect visible fabric with latent geometry and institutional continuity.

Cross-Period Continuity and the Significance of Latent Heritage

The study finds that Saigon's heritage significance lies in the interaction of layers rather than the completeness of any single period. The riverine landscape, Nguyen canal and citadel systems, colonial grid and civic center, Cho Lon commercial morphology, post-war settlement, and contemporary rehabilitation overlap within one metropolitan structure. This result is consistent with HUL scholarship, which defines urban heritage through historical layering, setting, land use, spatial organization, social practice, governance, and perception [4][5][6][7].

Four continuity states clarify how this layering survives. Persistent attributes remain materially and spatially legible, as in major river corridors and selected street grids. Adapted attributes retain their relationship through changed form or use, as in rehabilitated canals, converted compounds, or commercial streets. Overwritten attributes have been substantially replaced but may remain historically relevant. Latent attributes survive through alignments, subsurface evidence, place names, or memory. This typology moves the palimpsest concept from a general metaphor toward a repeatable analytical procedure.

Three forms of significance follow from the analysis. Morphological significance arises from persistent routes, waterways, centers, plots, and institutional locations. Intercultural significance arises from the contributions of Khmer, Vietnamese, Chinese, French, and other communities to language, religious space, commerce, architecture, foodways, and neighborhood identity. Adaptive significance arises from the city's repeated reuse of infrastructure and built form. These qualities are important for local identity and planning knowledge even where architectural integrity is uneven.

The evidence does not support equal claims for all locations or periods. Pre-colonial material evidence is dispersed; citadel locations require further verification; colonial ensembles have been altered; and canal rehabilitation has changed social use and edge form. A credible strategy must therefore match the intensity of intervention to evidence confidence and vulnerability. This avoids both the under-recognition of latent heritage and the overstatement of uncertain historical claims.

From Assessment to Action: Conservation and Planning Strategies

The findings support six linked strategies. Their purpose is to embed layered heritage in normal planning and investment decisions rather than create an isolated conservation enclave. HUL research and UNESCO implementation reports emphasize the need for inventories, coordinated governance, planning tools, participation, economic instruments, climate integration, digital capacity, and monitoring.

The practical relevance of this study is that it makes an attempt to develop planning measures based on historical research of urban landscape. The developed framework offers heritage-sensitive urban design via empirical mapping, adaptive re-use, development control, and sustainable landscape management. This planning-oriented approach for historic urban landscape undergoing fast transformations is achieved through integration of heritage preservation with climate adaptation, public space enhancement, and participatory practices.

Planning Strategies for Heritage-Based Urban Management

Establish a Georeferenced Multilayer Heritage Atlas

Historical maps have to be georeferenced with a documented margin of uncertainty and linked with present-day parcels, streets, canals, buildings, archaeological sites, names, and organizations. Information on each of the items must include the source, date, attribute group, continuity status, level of evidence, vulnerability, and legality. The atlas has to enable development review by providing information about the possible conflicts with former watercourses, citadel remains, historical paths, archaeological areas, and valuable urban complexes.

Create Hydrological Heritage and Blue-Green Corridors

Rivers and canals should be seen as interrelated cultural, ecological, and mobility networks. The conservation of waterways should include embankments, access, vegetation, bridges, urban form and everything else in between. Specific lost canals could be reimagined in terms of landscape architecture, drainage, public space, and digital media while addressing climate change issues.

Verify and Interpret Citadel Lines and Morphological Traces

Bat Quai and Gia Dinh Citadel sections need to undergo historical-GIS and archaeological validation. Verified sites can then be mapped using urban planning, landscaping, exhibitions, and digital techniques. The low confidence regions can be considered as study sites and not as exact demarcations. Digital visualization must separate facts from speculation.

Apply Ensemble-Based Adaptive Reuse and Development Control

Adaptive reuse needs to take into account the buildings within the larger context of their streets, blocks, markets, canals, and community networks. Planning regulations need to ensure that historic buildings are protected, that historic urban patterns are maintained, and that mixed use is continued.

Implementation needs coordination between planning departments, heritage institutions, researchers, property owners, and the community. The monitoring needs to look at demolition, adaptive reuse, public access, canals, impact on the community, and treatment of latent heritage to create a heritage management process.

Implementation Framework and Monitoring Indicators

The implementation strategy for the identified heritage systems involves the identification of responsible stakeholders, guidelines for implementation, and performance indicators to be considered in transforming the heritage systems into urban planning practices. This strategy guarantees the incorporation of heritage management into mainstream planning practices and not just heritage preservation.

Limitations and Research Agenda

The study is interpretive and does not replace a georeferenced municipal inventory, archaeological survey, or community-based values assessment. Several historical images are secondary reproductions, and differences in scale, projection, and purpose limit precise spatial overlay. The absence of systematic interviews also means that contemporary community meanings are identified mainly through published research rather than primary qualitative data. These limitations are made explicit so that supported morphological relationships are not confused with verified site boundaries.

Future research should develop a historical GIS with uncertainty metadata, compare historical alignments with current parcels and drainage data, test selected citadel and canal traces through archaeology and remote sensing where appropriate, and undertake participatory mapping in Saigon and Cho Lon. Comparative studies with other Southeast Asian delta cities could then evaluate whether the two-system pattern identified here is locally specific or transferable to other layered urban landscapes.

Comparative Applicability of the Framework in Southeast Asian Historic Urban Landscapes

This proposed framework can be used in more generalized terms on the historic cities in Southeast Asia characterized by multiple layers of urban development. Urban circumstances similar to those discussed above can be found in cities like Bangkok, George Town, and Jakarta, where water channels, trading routes, colonial history, and cultures contribute to the formation of heritage landscapes. Identifying the presence of persistent, adapted, overwritten, and latent heritage states can offer an easily transferrable process.

CONCLUSION

This study examined Saigon–Ho Chi Minh City as an urban palimpsest through comparative historical cartography, urban morphology, and an HUL-informed attribute assessment. It identified a city formed through repeated adaptation rather than complete replacement. Pre-colonial riverine exchange, Nguyen canal and citadel systems, colonial streets and institutions, Cho Lon’s commercial landscape, post-war change, and contemporary redevelopment remain connected through spatial relationships that vary in visibility and evidential strength. Two long-duration systems provide the clearest cross-period continuity. The hydrological-commercial system shaped settlement, trade, production, culture, drainage, and ecological adaptation. The defensive-administrative system shaped boundaries, strategic routes, institutional locations, large compounds, and later street patterns. Some elements remain constant, while others have been modified or superseded, and many are dormant. Thus, heritage significance cannot be effectively managed with only a list of buildings. This research provides a four-stage framework for continuity—persistent, modified, superseded, and dormant—and links each stage to planning actions. The recommended measures are a georeferenced multilayer atlas, hydrological heritage corridors, archaeological sensitivity zones, verified interpretation of citadel lines, ensemble-based adaptive reuse, graded development controls, participatory mapping, and coordinated monitoring. These measures are compatible with the city’s current planning and climate-adaptation agendas. Further work should georeference the cartographic corpus, test relationships at parcel scale, conduct archaeological verification, and document community values. Such research would strengthen the evidence base needed to accommodate metropolitan change while keeping the city’s layered structure legible.

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