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A Typological Analysis of Hainans Urban Market Spaces and Strategies for Environmental Art Design Reconstruction from the Perspective of Cultural-Tourism Integration

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Abstract: Under the national policy initiative to vigorously develop the nighttime economy, Hainan Province has actively implemented the Several Measures for Promoting Consumption in Hainan Province, with urban market spaces rapidly evolving into key platforms for deep cultural-tourism integration. Grounded in typological theory and employing a mixed-methods approach that combines systematic literature analysis, extensive field research, and in-depth case studies, this study comprehensively examines the typological framework and underlying design logic of urban market spaces across Hainan Province. The empirical findings reveal that these markets can be systematically categorized into four distinct types based on spatial location and functional attributes: characteristic street-based markets, historical-cultural site-oriented markets, commercial shopping center markets, and urban square markets. The analysis indicates that their spatial designs urgently require the organic integration of cultural narratives and immersive tourism experiences, while simultaneously enhancing functional versatility and sustainable resilience. Within the strategic context of the Hainan Free Trade Port policy framework, this study establishes a comprehensive four-dimensional strategic framework encompassing site selection planning, spatial development, design implementation, and management operations. This framework is rigorously validated through exemplary cases such as Haikous Qilou Old Street and Sanyas Luhuitou Trunk Market. These findings not only address a significant systemic gap in urban market design research but also provide replicable practical models for advancing Hainans Tourism Island and Health Island strategic vision, sustaining urban spatial vitality, and fostering high-quality development of street vending economies nationwide.

Keywords: cultural-tourism integration; urban markets; typology; environmental art design; nighttime economy; spatial design

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1. Introduction

Strategic emphasis on circulation and commercial consumption has accelerated the development of the nighttime economy. A policy document issued in 2019 explicitly proposed the goal of enlivening nighttime commerce, providing institutional support for urban consumption innovation [1]. In alignment with national priorities, Hainan Province introduced measures to promote consumption in May 2022, incorporating the nighttime economy into provincial strategic planning and systematically advancing the development of nighttime consumption clusters and spatial infrastructure. Under this impetus, urban markets—characterized by strong social and cultural appeal—have rapidly emerged as core platforms for deepening cultural-tourism integration. Representative cases such as the trunk market at Sanya's Luhuitou Scenic Area and the commercial district market at Haikou's Shangbang Baihui City have not only reshaped urban cultural landscapes but also generated substantial socio-economic benefits through the seamless integration of diverse consumption scenarios, serving as key catalysts for enhancing the cultural depth and spatial vitality of tourism cities.

Existing academic research reveals notable theoretical gaps: current studies largely concentrate on historical trajectories and economic impacts of markets, while lacking a systematic spatial framework rooted in design theory [1]. Domestic scholarship has traced the evolution of market trade, examined the functional roles of market towns from rural consumption perspectives, and analyzed interactions between markets and urban development; however, these works do not establish practical frameworks for spatial design. International research has documented the historical development of European market spaces and underscored their social value as public spaces, yet neither strand integrates cultural-tourism practices into design-oriented analysis. As a result, a structural disconnect persists between theoretical discourse and applied design practice for urban markets within cultural-tourism integration contexts, calling for a systematic design theory framework centered on cultural narratives and oriented toward tourism experiences.

This study selects urban market spaces in Hainan Province as empirical cases, situated within the broader context of free trade port initiatives, to systematically investigate optimization pathways through typological analysis and environmental art design reconstruction [1]. Addressing core challenges—including disordered spatial layouts, underdeveloped symbolic cultural expression, and monolithic functional structures—the research proposes a 'culture + tourism'–driven design framework and establishes a comprehensive strategic system covering planning and site selection, spatial development, design implementation, and management operations, thereby contributing theoretical innovation to urban renewal. Further, in synergy with Hainan's strategic positioning as a Tourism Island, Health Island, Longevity Island, and Duty-Free Island, this study leverages market space revitalization to strengthen urban cultural soft power and advance high-quality economic development, offering replicable models and actionable pathways for public space transformation under China's cultural-tourism integration framework.

2. Analysis of the Development Trajectory and Current Status of Urban Market Spaces in the Context of Cultural-Tourism Integration

Review of Current Research Status Domestically and Internationally:

Current research on urban markets primarily draws upon theoretical frameworks from history and economics, while systematic investigation from a design-oriented perspective remains underdeveloped. Domestic studies have traced the historical evolution of market trade and clarified the functional roles of market towns within rural economic systems, offering valuable empirical foundations; however, these analyses seldom engage with spatial design considerations in urban contexts [2]. Other contributions have identified interactive mechanisms between markets and urban spatial structures, yet practical guidance for spatial design implementation remains absent. Overall, theoretical inquiry remains at an early stage, and the lack of integration between spatial design theory and practice has resulted in persistent gaps between scholarly understanding and real-world application.

Internationally, scholarly attention has centered on the social and spatial significance of market places, examining their historical development, morphological characteristics, and architectural articulation across diverse urban traditions. Emphasis has been placed on their capacity to function as inclusive, socially generative public spaces. Nevertheless, existing frameworks do not incorporate cultural-tourism integration as a core analytical or design dimension [2]. While such international perspectives offer useful conceptual references, they fall short in addressing context-specific design challenges emerging from contemporary urban market transformations.

In conclusion, theoretical research on urban market spaces within the framework of cultural-tourism integration constitutes an emerging and underexplored domain, necessitating the timely construction of a coherent, systematic, and practice-oriented theoretical foundation [3].

3. The Emergence and Core Issues of Urban Market Spaces in Hainan

Hainan Province has aligned its nighttime economic development strategy with national policy guidance by positioning markets at the center of urban vitality. The trunk market at Sanya's Luhuitou Scenic Area fosters fashionable social engagement, while markets in Haikou's Shangbang Baihui City and Youyi Nanhai City are embedded within commercial districts as distinctive urban landmarks. These spaces serve both the leisure preferences of younger demographics and broader goals of stimulating nighttime consumption and generating economic returns. However, persistent challenges include disorganized spatial configurations—some Haikou markets exhibit overcrowding and poorly defined functional zones; shallow cultural representation—relying on decorative motifs of Hainan identity without substantive narrative integration; and excessive commercial focus—undermining opportunities for meaningful social interaction and cultural immersion [4]. For example, certain mall-based market zones, despite high visitor volumes, lack authentic cultural content and have converged into standardized stall clusters. Such limitations impede long-term sustainability, underscoring the need to reconfigure spatial logic through intentional design intervention.

3.1. Typological Analysis of Urban Market Spaces in Hainan

Theoretical basis and standard system for type classification:

This study establishes a typological analysis framework for urban market spaces based on three dimensions: spatial location characteristics, functional attributes, and cultural depth of engagement. The spatial location dimension categorizes types into those embedded within historical districts, integrated with scenic areas, incorporated into commercial complexes, or rooted in public spaces; the functional attribute dimension identifies types oriented toward consumption, cultural storytelling, social interaction experiences, and event hosting; the cultural engagement dimension focuses on the completeness of local cultural narratives and the depth of spatial expression—the dialectical relationship between symbolic representation and immersive experiences [5]. This framework transcends superficial feature descriptions by examining the coupling mechanisms between spatial essential attributes and functional logic, offering both theoretical grounding and practical operational guidance for typological analysis.

3.2. Characteristics and Functional Analysis of Four Types of Spatial Types

3.2.1. Embedded Historical Districts (E.g., the Arcade-Style Old Street Market in Haikou)

The design draws on the historical architectural texture to establish a cultural narrative foundation, featuring strong spatial continuity; however, commercial facilities remain underdeveloped, and the cultural atmosphere is disconnected from commercial activities, resulting in insufficient visitor dwell time and limited experiential depth.

3.2.2. Integrated Scenic Area Types (E.g., Markets Surrounding Sanya Ancient City)

The space demonstrates high openness and a comprehensive cultural narrative framework, featuring thematic spatial sequences aligned with cultural motifs; however, crowd management remains suboptimal, resulting in inefficient spatial utilization during peak periods and constraining the full expression of its dynamic potential [6].

3.2.3. Embedded Commercial Complexes (E.g., Haikou Shangbang Baihui City Market)

Although consumer flow remains stable and the commercial atmosphere vibrant, cultural expressions are relatively superficial, and stall functions exhibit high homogeneity, leading to cyclical fluctuations in spatial appeal and undermining long-term vitality.

3.2.4. Public Space-Dependent Type (E.g., Haikou Wanlv Yuan Market)

Event offerings exhibit high diversity, with frequent co-occurrence of festivals, markets, and social gatherings; however, spatial utilization is heavily influenced by seasonal variations, operational sustainability remains lacking, and the functional value of these spaces fluctuates significantly across seasons.

3.3. Trends in Type Evolution and the Logic of Spatial Reconstruction

The deepening integration of culture and tourism is dynamically blurring genre boundaries, giving rise to a dual evolutionary trajectory characterized by "functional complexity" and "experience-based scenarization".

Functional integration: The embedded market within commercial complexes extends its consumption function into an experiential one by incorporating intangible cultural heritage experience zones and cultural exhibition spaces.

Experience scenario enhancement: The integrated market within the scenic area has evolved into a multifunctional space combining "cultural storytelling, social interaction, and consumer experiences," with significantly improved spatial coherence and smoother visitor flow [7].

Typical cases demonstrate the feasibility of spatial reconstruction: Haikou's arcade-style old street has successfully transformed from a purely commercial consumption space into a cultural experience space by integrating cultural displays, themed dining, and interactive experiences, significantly enhancing its spatial value and vitality. This evolutionary pattern reveals the core logic behind the development of urban market spaces—cultural narrative depth serves as the fundamental guarantee for spatial sustainability, while functional diversity determines spatial vitality.

4. Strategies for Environmental Art Reconstruction in Urban Market Space Design

4.1. Design Philosophy for the Integration of Culture and Tourism

Design should move beyond commercial orientation to establish a narrative framework centered on "culture + tourism." Rather than relying on symbolic representations, it must engage deeply with Hainan's indigenous cultural elements—including Li ethnic brocade, maritime traditions, and the historical experiences of its overseas Chinese communities—and translate them into spatial narrative language. For example, the Sanya Luhuitou Market employs artistic installations to convey the Li people's migratory heritage; visitors encounter this cultural context organically during their visit, enabling the market to serve as a medium for cultural exchange. Designers must prioritize user experience and strengthen the immersive quality of cultural expression, avoiding superficial decorative treatments. In alignment with tourism objectives, thematic guided routes—such as the "Cultural Tracing Route"—should be integrated to support natural, interaction-driven engagement with local culture, elevating the space's function from commodity transaction to meaningful experiential participation.

4.2. Functional Integration and Spatial Contextualization Strategies

Functional integration emphasizes the capacity of spaces to accommodate multiple functional attributes. In characteristic street-style markets—such as arcade-style old streets—cultural exhibition areas, themed dining zones, and social leisure spaces are co-located to prevent functional fragmentation; in commercial shopping center-style markets, intangible cultural heritage craft experience areas and cultural creative retail zones are incorporated to enhance cultural value. Space scenarization focuses on creating immersive spatial atmospheres through thematic environmental design, including lighting, material selection, and spatial layout. For example, a "night market cultural street" employs warm lighting and wooden elements to evoke a vibrant urban atmosphere, optimizes pedestrian circulation to avoid congestion, and strengthens spatial coherence. During the renovation of Haikou's market, the main thoroughfare was widened and integrated with cultural landmarks to guide natural pedestrian movement, thereby improving spatial fluidity and visitor experience quality. The core strategy lies in spatial revitalization—transforming the space into an organic entity that integrates culture and social interaction.

4.3. Elastic Design and Sustainable Development Strategies

Elastic design utilizes modular and mobile facilities to meet diverse event requirements. Vehicle positions at the trunk market can be dynamically adjusted to accommodate peak visitor volumes, while standardized modular stall designs enable

rapid reconfiguration and adaptation. Sustainability is advanced through uniform infrastructure development—such as consistent stall specifications—and innovative event programming—including themed festivals—to enhance spatial longevity. For example, Sanya Market introduced the "Li Brocade New Year Atmosphere" event during the Spring Festival to encourage repeat visitation and deployed a smart management system for real-time spatial optimization [8]. These approaches support the market's transition from a temporary street vendor operation to a resilient, long-term urban entity, sustaining its vibrancy over time. Environmental sustainability is further reinforced by incorporating renewable construction materials, consistent with the Healthy Island development framework.

5. Spatial Design Approaches for Urban Markets Based on Free Trade Port Policies

5.1. The Supporting Role of Free Trade Port Policies in Market Development

The strategic positioning of 'Tourism Island, Health Island, Longevity Island, and Duty-Free Island' outlined in the Overall Plan for the Construction of Hainan Free Trade Port provides systematic policy support for urban market space development. The duty-free policy attracts high-spending consumers; the Health Island concept guides the optimization of leisure-oriented spatial design; and the Longevity Island orientation promotes deep integration of cultural heritage elements. These four pillars jointly underpin the integration of culture and tourism within market spaces. The policy emphasizes coordinated advancement of 'culture + tourism', directing spatial design toward enriched cultural expression and enhanced experiential quality, rather than purely commercial growth, thus offering strategic guidance for market space planning.

5.2. Design Practices under the "6+1+4" Policy Framework

Under the "6+1+4" policy framework—which encompasses six major advantages of the free trade port, one core cultural heritage element, and four supporting components—urban market designs have been systematically implemented. The duty-free advantage has been leveraged in commercial shopping centers through the establishment of duty-free cultural experience zones, where duty-free products are seamlessly integrated with Li ethnic cultural creations to enrich consumer experiences with deeper cultural resonance; cultural inheritance serves as the central design principle, guiding scenario-driven approaches in scenic spot-based markets—for example, Sanya Ancient City Market employs light projection technologies to evoke narratives of ancient port trade history; the four supporting elements—transportation optimization (e.g., dedicated shuttle buses for markets), environmental enhancement (e.g., integration of greenery and landscape features), intelligent management (e.g., real-time crowd monitoring systems), and service improvement (e.g., a dedicated cultural tour guide application)—were jointly deployed during the renovation of Haikou's arcade-style old streets, effectively mitigating spatial congestion while reinforcing the cultural ambiance and ensuring precise alignment between policy goals and design implementation.

5.3. Construction and Implementation of the Strategic Framework

Within the framework of free trade port policies, a four-dimensional strategic system has been established, covering planning and site selection, spatial development, design implementation, and management and operation. Planning and site selection focus on historical and cultural districts, commercial centers, and urban squares to align pedestrian density with cultural capacity [9]. Spatial development adopts scenario-based design approaches, embedding cultural narratives into spatial configurations to avoid functional fragmentation and spatial disorder. Design implementation utilizes modular facilities—such as mobile stalls and thematic installations—to ensure adaptability and responsiveness. Management and operation integrate smart systems for real-time visitor monitoring and dynamic event scheduling, including monthly themed festivals, to maintain long-term vibrancy. This integrated system forms a closed-loop operational mechanism from conceptualization to execution, offering a standardized pathway for

developing urban market spaces in Hainan and reinforcing its strategic positioning as a tourism and health island.

5.4. Practical Cases and Application Validation

5.4.1. Empirical Study Case of Haikous Archway Old Street

As a typical representative of characteristic street markets, Liqiu Old Street originally possessed a rich cultural atmosphere but lacked strong commercial functionality. Through renovation efforts—including establishing a Li ethnic culture exhibition area, creating a Li brocade-themed dining space, and optimizing the main circulation pathway—the spatial function was effectively redefined [10]. Empirical evidence shows that visitor dwell time significantly increased and satisfaction with cultural experiences markedly improved, successfully transforming the area from a "historical district" into a "cultural experience destination." This case demonstrates the practical effectiveness of functional diversification and spatial scenarization strategies in addressing spatial clutter and enhancing spatial value.

5.4.2. Practice at the Sanya Luhuitou Trunk Market

The Sanya Luhuitou Trunk Market is distinguished by its fashionable social atmosphere, yet limited cultural depth has constrained its sustainable development. During renovation, Li ethnic cultural elements were integrated—such as reconfiguring weaving stalls into interactive cultural hubs—while a modular stall system enabled adaptive spatial reorganization. This approach significantly strengthened cultural integration and functional flexibility. Empirical outcomes indicate marked improvement in visitor participation in cultural experiences, enhanced stability in customer flow, and effective mitigation of homogenized competition. The case underscores how flexible design frameworks combined with authentic cultural integration can advance market sustainability, affirming the practical effectiveness of the 'culture + tourism' design paradigm.

5.4.3. The Universality and Promotion Value of the Strategy

These two cases illustrate the transferability and practical value of the strategic framework. The "culture + function" integration model applied in Haikou's Qilou Old Street and the "flexibility + culture" fusion model implemented in Sanya's Luhuitou have been adapted to market renovation projects in other parts of Hainan. For example, after integrating cultural elements inspired by the Qilou Old Street approach, the Wanlüyuan City Square Market in Haikou experienced a notable rise in visitor traffic. This strategy supports the strategic direction of the Hainan Free Trade Port as a "tourism island" and offers a scalable framework for advancing sustainable development in street vending economies across the country [1, 10]. Within the free trade port policy context, the model facilitates a shift in urban renewal—from physical space upgrading to cultural value revitalization—through cultural empowerment and spatial regeneration, yielding a replicable "Hainan model" applicable to broader cultural-tourism integration efforts.

6. Conclusion

Through typological analysis and environmental art design reconstruction, this study systematically explores development pathways for urban market spaces in Hainan under the cultural-tourism integration framework. It identifies core characteristics and challenges of four distinct market space types, proposes a design strategy system centered on "culture + tourism" with functional diversity and resilient sustainability as key components, and establishes a four-tiered implementation pathway encompassing planning, spatial design, execution, and operation aligned with Free Trade Port policies. Case studies such as Haikou's Qilou Old Street and Sanya's Luhuitou demonstrate the feasibility and scalability of these strategies. This research not only fills theoretical gaps in urban market design but also holds dual significance for Hainan's Free Trade Port development: first, providing practical support for urban public space revitalization to reinforce its positioning as a "tourism island and health island"; second, offering

innovative models for sustainable street vending economies that enhance both urban economic vitality and cultural preservation. Future efforts should focus on leveraging digital technologies in market management, deepening the integration of culture and tourism, and contributing more "Hainan wisdom" to nationwide urban renewal initiatives.

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