



INTERNATIONAL ASSOCIATION FOR THE STUDY OF TRADITIONAL ENVIRONMENTS

WORKING PAPER SERIES

TRANSLATING INFRASTRUCTURE, MOBILITY, AND URBAN LANDSCAPES

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2026

Volume 365

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TRANSLATING INFRASTRUCTURE, MOBILITY, AND URBAN LANDSCAPES

From an Academic Enclave to an Integrated Hub: Reimagining the Edges of Spokane's University District <i>Kanghyun Lee, Xiao Hu, Shauna Corry</i>	1
The Politics of Translating Tradition: Continuity and Reinterpretation of Auto-Centric Planning Traditions <i>Shanshan Hu</i>	20
Infrastructure Reconfigured: The Zhang Meizhi Alley Water Tower as a Site of Translation <i>Xinrui Wang</i>	40
Foreign-Oriented Tourism and Zhuhai's Architectural and Urban Modernization in China's Early Reform Era (1978-2001) <i>Yihan Wang, Liran Chen</i>	62
The Formation of a "Global Sense of Place": A Case Study of Pujiang New Town in Shanghai <i>Yanwen Xue</i>	85

Traditional Dwellings and Settlements

Working Paper Series

FROM AN ACADEMIC ENCLAVE TO AN INTEGRATED HUB: REIMAGINING THE EDGES OF SPOKANE'S UNIVERSITY DISTRICT

Kanghyun Lee, Xiao Hu, Shauna Corry

FROM AN ACADEMIC ENCLAVE TO AN INTEGRATED HUB: REIMAGINING THE EDGES OF SPOKANE'S UNIVERSITY DISTRICT



This study examines the relationship between Downtown Spokane and the Spokane University District through the lens of dual-core urbanism. Moving beyond monocentric and broad polycentric models, it interprets Downtown as a civic-commercial core and the University District as an academic-innovation core. Using spatial analysis, field observation, stakeholder-informed discussion, and a collaborative design studio, the study investigates how the edge between these two cores can be transformed from a fragmented seam into an active threshold. The findings suggest that mobility, mixed-use civic-institutional interfaces, and ecological infrastructure can support integration without absorption, preserving distinct identities while strengthening urban connection.

1. INTRODUCTION

The changing relationship between Downtown Spokane and the Spokane University District challenges a purely monocentric interpretation of the city. A monocentric reading assumes that the downtown or central business district remains the single dominant core, while adjacent districts are peripheral, secondary, or dependent. This assumption is rooted in classical urban economic models that conceptualize the city around a dominant center of employment and land value.¹ Within this framework, the University District would be understood primarily as an institutional enclave attached to Downtown rather than as an urban center with its own role. However, the recent growth of higher education, health sciences, research activity, and institutional investment in the Spokane University District suggests a more complex urban structure.

Polycentric urban theory offers a useful alternative by recognizing that contemporary cities often contain multiple centers connected through flows of people, capital, infrastructure, and knowledge.² Yet the polycentric model remains too broad for explaining the specific spatial, institutional, and design relationship between two adjacent cores: a downtown and a university district. To address this condition, this study proposes a more focused interpretation: dual-core urbanism. In Spokane, Downtown Spokane and the Spokane University District can be understood as two distinct but interdependent urban cores. Downtown Spokane functions as a civic-commercial core, organized around governance, commerce, public life, entertainment, and regional connectivity, while the University District functions as an academic-innovation core, organized around higher education, research, health sciences, institutional investment, and knowledge-based development.

This interpretation builds on scholarship that understands universities as urban anchor institutions with significant roles in employment, real estate, purchasing power, knowledge production, and local economic development.³ It also relates to work on innovation districts, which emphasizes compact, transit-accessible

urban areas where anchor institutions, firms, start-ups, and civic actors cluster and interact.⁴ From this perspective, the Spokane University District should not be treated as a peripheral extension of Downtown or as a self-contained institutional enclave. Rather, it represents a distinct form of urban centrality that must be understood in relation to Downtown.

Within this dual-core framework, the boundary between Downtown Spokane and the University District becomes especially important. This boundary should not be understood simply as a line of separation, nor should it be erased in the name of integration. A boundary is necessary because each core has a distinct identity, rhythm, governance structure, and development logic. Urban space is often structured through both physical and symbolic boundaries, which shape access, identity, encounter, and degrees of publicness.⁵ The issue, therefore, is not whether the two cores should be connected, but how they can be connected without one being absorbed by the other.

This study argues that the edge between Downtown Spokane and the University District should be reimagined as an active threshold. An active threshold is not a hard barrier, but a designed zone of exchange where difference and connection are both maintained. This idea draws on threshold thinking in urban theory, where thresholds are understood as spaces of transition, negotiation, and social encounter rather than merely as boundaries between fixed territories.⁶ In design terms, an active threshold can support movement, public life, ecological connections, and civic-institutional exchange while preserving the distinct identity of each core. In this sense, the boundary becomes a spatial instrument for managing integration without absorption.

Accordingly, this study asks how the boundary between Downtown Spokane and the Spokane University District can be redesigned as an active threshold that supports connection, exchange, and mutual reinforcement without dissolving the distinct identity of either core. Using Spokane as a case study, this research examines how the edge between Downtown and the University District currently operates and how it might be redesigned to support a more reciprocal urban relationship. The study combines spatial and morphological mapping, field observation, stakeholder-informed discussion, and a joint architecture and landscape architecture design studio. By reframing Spokane as a dual-core urban structure, this study contributes to broader discussions on university districts, downtown revitalization, and the design of urban boundaries.

2. THEORETICAL FRAMEWORK: FROM MONOCENTRIC CITY TO DUAL-CORE URBANISM

Understanding the relationship between Downtown Spokane and the Spokane University District requires a theoretical framework that moves beyond a conventional monocentric reading of urban form. This section first reviews monocentric and polycentric interpretations of the city, then situates university districts as urban anchors and academic-innovation cores. Building on these discussions, the section develops the concept of dual-core urbanism as a focused analytical framework for examining the spatial, functional, and institutional relationship between Downtown Spokane and the University District. It concludes by reframing the boundary between the two districts not as a barrier to be removed, but as an active threshold through which connection, difference, and exchange can be negotiated.

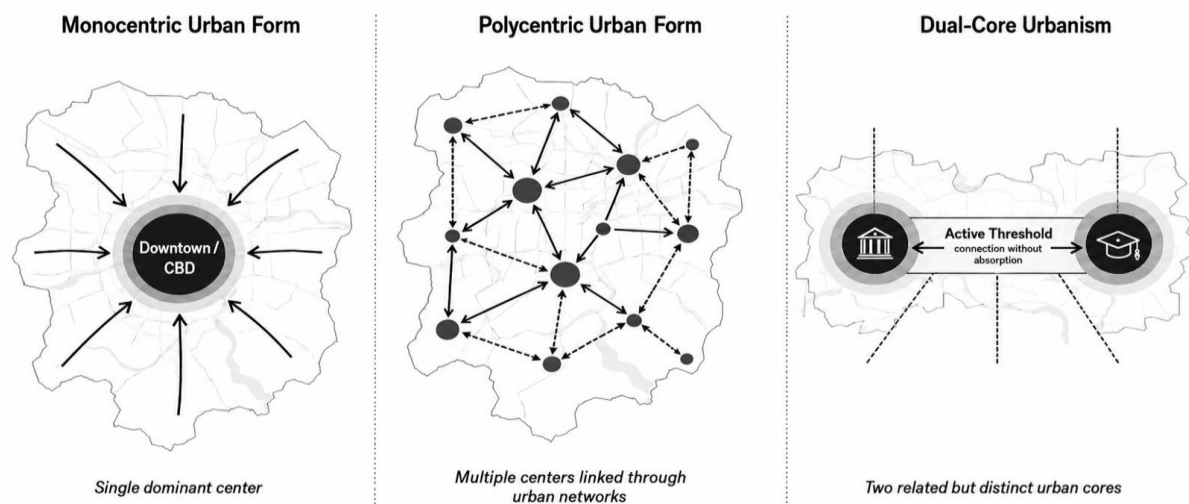


Figure 1: Conceptual framework: from monocentric urban form to dual-core urbanism. The diagram compares monocentric, polycentric, and dual-core urban models, framing Downtown Spokane and the Spokane University District as distinct but connected cores linked through an active threshold. (Source: Author).

2.1. Monocentric and Polycentric Readings of Urban Form

Classical urban economic theory has often conceptualized the city through a monocentric model. In this view, the central business district or downtown functions as the dominant center of employment, commerce, land value, and regional accessibility, while surrounding areas are understood as secondary or peripheral. The monocentric model is strongly associated with urban land rent theory, in which distance from the central core shapes land value, density, commuting patterns, and spatial organization.⁷ This model remains useful for understanding the historical importance of downtowns as concentrated centers of economic and civic life. However, contemporary urban forms are rarely organized around a single dominant core. Polycentric urban

theory offers an alternative by recognizing that cities and metropolitan regions often contain multiple centers linked through infrastructure, labor markets, institutional networks, economic flows, and knowledge exchange.⁸ From this perspective, urban centrality is not limited to the traditional downtown. Instead, different districts may acquire central functions through specialized roles, institutional concentration, transportation access, employment clusters, or cultural and civic activity.

Yet polycentric theory can remain too broad for explaining the specific spatial and institutional relationship between a downtown and an adjacent university district. A metropolitan region may contain multiple centers, but not all centers share the same degree of proximity, interdependence, or boundary tension. In Spokane, Downtown Spokane and the Spokane University District are not simply two nodes within a larger polycentric field. They form a more specific dual-core condition: two neighboring centers with distinct but interrelated roles, one civic-commercial and the other academic-innovation oriented. This condition requires a more focused framework for understanding how adjacent urban cores can remain distinct while becoming more actively connected.

2.2. University Districts as Urban Anchors and Academic-Innovation Cores

University districts have historically been understood as educational enclaves or campus-oriented zones. However, scholarship on universities and cities increasingly emphasizes the role of universities as urban actors with significant spatial, economic, and civic influence. Universities are not only institutions of teaching and research; they also shape employment, land development, housing markets, public space, transportation demand, cultural activity, health infrastructure, and local economic development.⁹ The concept of the university as an anchor institution is especially important for understanding this transformation. Anchor institutions are large, place-based organizations that are unlikely to relocate and that exert long-term influence on surrounding urban areas through employment, purchasing, real estate, research, health services, and community partnerships.¹⁰ Universities, hospitals, and research institutions often play this role, particularly in districts where academic, medical, entrepreneurial, and civic functions overlap.

This change in the role of university districts is also related to the emergence of innovation districts. Katz and Wagner define innovation districts as compact, transit-accessible urban areas where anchor institutions, firms, start-ups, research organizations, and civic actors cluster and interact.¹¹ Unlike isolated suburban research parks, innovation districts are often embedded within existing urban fabric and depend on proximity, walkability, mixed uses, public space, and informal exchange. In this sense, a university district may become more than a campus district. It may function as an academic-innovation core that contributes to the city's economic, civic, and spatial structure. This perspective is important for the Spokane case because it reframes the Spokane University District not as a peripheral extension of Downtown, but as a distinct form of urban

centrality: one that is academic, institutional, medical, and innovation-oriented rather than primarily commercial or administrative.

2.3. Dual-Core Urbanism: Downtown and University District

This study uses the term dual-core urbanism to describe a city structure shaped by two nearby but distinct centers. Unlike broader models of polycentric urban regions, dual-core urbanism focuses on the relationship between two neighboring cores. It does not simply argue that a city has more than one center. Rather, it asks how two centers with different identities and roles can work together while remaining distinct. In Spokane, this framework allows Downtown Spokane and the Spokane University District to be understood as two related but different urban cores. Downtown Spokane functions as a civic-commercial core, shaped by commerce, governance, public life, cultural activity, transportation, and the historical image of the city center.¹² The Spokane University District, by contrast, functions as an academic-innovation core, shaped by higher education, research, health sciences, institutional investment, student life, and knowledge-based development. It does not replace Downtown, nor should it be treated simply as an extension of Downtown. Rather, it represents another form of urban centrality within Spokane.

This perspective is important because it shifts the interpretation of Spokane from a downtown-centered model to a dual-core model. The goal is not to merge the University District into Downtown or to separate it into an isolated institutional area. The key question is how the two cores can be connected in ways that allow interaction while preserving their different civic-commercial and academic-institutional identities. This question leads directly to the issue of boundary.

2.4. Boundary, Edge, and Threshold

The boundary between Downtown Spokane and the Spokane University District is central to this study. In conventional urban design discourse, boundaries are often treated as barriers, gaps, or problems to be overcome. However, boundaries also help organize urban identity, access, governance, publicness, and spatial experience. Urban space is shaped by both physical and symbolic boundaries, and these boundaries influence how people move, gather, encounter others, and understand the identity of different districts.¹³

For this reason, the boundary between Downtown Spokane and the University District should not be understood simply as a line of separation to be erased. A boundary is necessary because each core has its own identity, rhythm, institutional structure, and form of urban life. If the boundary becomes too rigid, the two districts remain disconnected. If it disappears entirely, the University District may be absorbed into downtown-oriented commercial and real estate development, while Downtown may be weakened by inward-

facing institutional expansion. The issue, therefore, is not whether the boundary should exist, but what kind of boundary it should become.

This study argues that the edge between Downtown Spokane and the University District should be understood as an active threshold. A threshold is not a hard barrier, but a transitional space where different users, programs, territories, and identities meet.¹⁴ In urban design terms, an active threshold can support movement, public life, institutional exchange, and social interaction while still preserving the distinct character of each side. Applied to Spokane, this concept reframes the Downtown–University District edge as a design and planning opportunity rather than a simple problem of separation. In this sense, the boundary becomes the spatial basis for integration without absorption.

3. CASE CONTEXT: DOWNTOWN SPOKANE AND THE SPOKANE UNIVERSITY DISTRICT

Spokane, Washington, provides a useful case for examining the relationship between a traditional downtown and an emerging university district. As a mid-sized city in the Inland Northwest, Spokane has a relatively compact urban structure in which Downtown Spokane and the Spokane University District are located in close proximity. The University District is located east of Spokane’s Downtown and includes approximately 770 acres divided into three distinct sections, bounded in part by the Spokane River and the BNSF railroad corridor.¹⁵ This spatial closeness makes the relationship between the two districts especially important. The issue is not simply that the two areas are adjacent, but that they represent different forms of urban centrality within the same city. The Spokane case therefore provides an opportunity to examine how two nearby urban cores can remain distinct while becoming more actively connected. To support the case-context discussion, Figure 2 presents one student group’s illustrative analysis of the Downtown–University District edge. While the studio included four group projects, this example helps visualize the dual-core relationship and the fragmented overlap zone discussed in this section.

Downtown Spokane has long served as the city’s civic-commercial core. The Spokane Downtown Plan identifies Downtown as the city and region’s center, including the largest employment area, Riverfront Park, the financial district, major retail, the historic urban core, and portions of the growing university and medical districts.¹⁶ Based on these functions, this study interprets Downtown Spokane as a civic-commercial core shaped by governance, commerce, public life, cultural activity, transportation connections, and symbolic urban identity. Although downtowns in many cities have changed in response to suburbanization, institutional growth, and shifting economic patterns, Downtown Spokane continues to operate as an

important center of urban activity. Its streets, public spaces, cultural institutions, and commercial areas continue to shape how residents and visitors understand the city's public image.

The Spokane University District, located immediately east of Downtown, has developed a different but increasingly significant role. The University District Strategic Master Plan Update describes the district as home to two medical schools and six higher education institutions, with nearly 12,000 undergraduate and graduate students.¹⁷ The district's recent planning also frames its future around academic vibrancy, sustainability, livability, commercial viability, and a transition from an industrial past toward a knowledge-based economy.¹⁸ Based on these conditions, this study interprets the University District as an academic-innovation core. Its centrality is not primarily commercial or administrative, but academic, medical, institutional, and innovation-oriented. For this reason, it should not be understood simply as an extension of Downtown. It functions as a distinct urban core with its own spatial character and development logic.

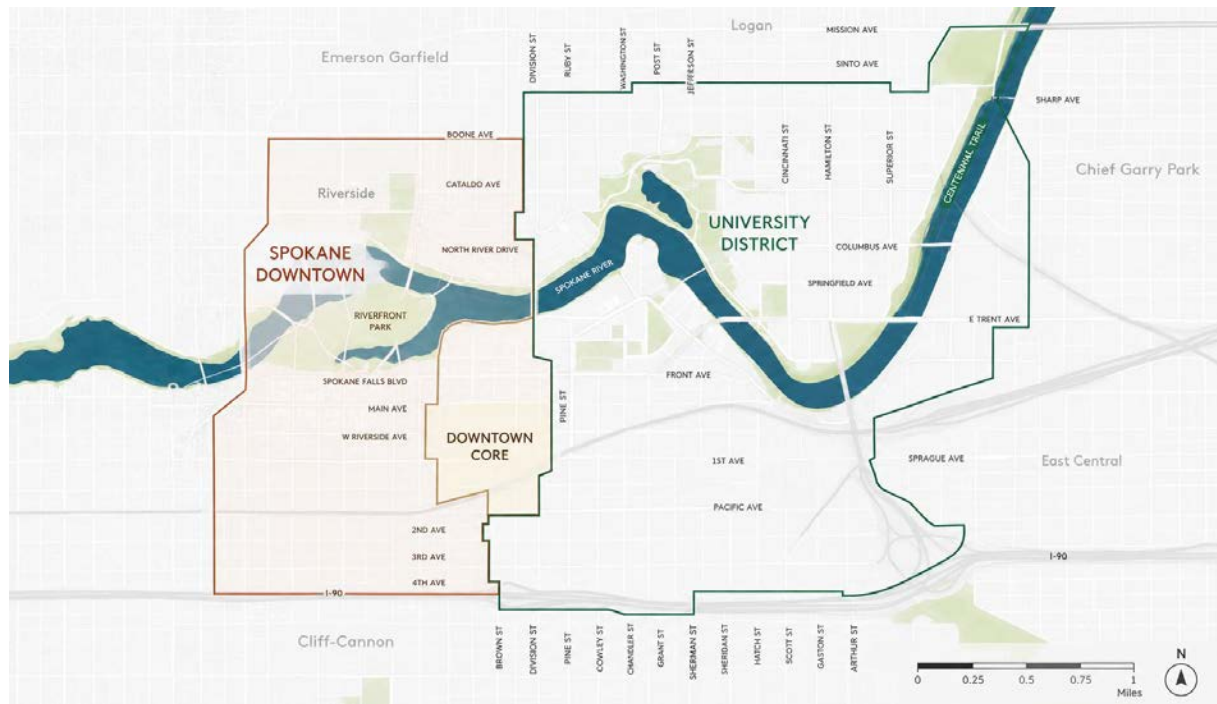


Figure 2: Illustrative student analysis of the Downtown–University District relationship. The diagram shows Spokane Downtown, the Downtown Core, and the Spokane University District as adjacent but distinct urban areas, highlighting their shared edge and spatial relationship. (Source: Student work, adapted by author).

The relationship between these two cores is shaped most clearly by the edge between them. Although Downtown Spokane and the University District are geographically close, the area between them does not consistently function as a strong civic interface. Instead, the edge is marked by infrastructural barriers, fragmented parcels, surface parking, underused land, uneven pedestrian conditions, and weak public realm

continuity. The South University District Subarea Plan identifies related planning priorities, including improving bike and pedestrian transportation, improving livability, preserving existing businesses, attracting new businesses, and addressing brownfield contamination.¹⁹ These conditions make movement between the two districts possible but not always clear, comfortable, or active. As a result, the two cores can feel more separated than their physical distance suggests. The edge therefore becomes more than a simple transition zone. It is the critical spatial condition through which the relationship between the civic-commercial core and the academic-innovation core is experienced. For this study, the Downtown–University District edge is understood as both a problem and an opportunity. On one hand, it reveals the physical and perceptual separation between two important parts of Spokane’s urban structure. On the other hand, it provides a site where a more reciprocal relationship between the two cores can be imagined. Because the edge contains infrastructure, vacant or underused parcels, parking areas, and weak public spaces, it also contains potential sites for new connections, public programs, ecological improvements, and shared civic activity. This makes the Spokane case especially relevant to the broader question of how adjacent urban cores can be connected without being collapsed into a single identity. The following sections examine this edge through mapping, field observation, stakeholder-informed discussion, and design studio work.

4. METHODS: CASE STUDY AND RESEARCH THROUGH DESIGN

This study uses a qualitative case study and research-through-design approach to examine the relationship between Downtown Spokane and the Spokane University District. The study investigates whether this relationship is better understood through a downtown-centered monocentric model or through a dual-core framework in which Downtown and the University District operate as two related but distinct urban cores. At the same time, the research-through-design process examines how the boundary between these two cores could be transformed into an active threshold.

The primary research setting was a Spring 2025 collaborative architecture and landscape architecture design studio focused on the Spokane University District Gateway. The studio brought together upper-level undergraduate and graduate students to examine the Gateway area through spatial analysis, field observation, stakeholder engagement, and design experimentation. The project focused on the Gateway area near the Division Street Gateway and I-90 off-ramp, extending from 3rd Avenue to the Spokane River. Its scope also included the Division Street Bridge and the North Bank–University District connection. The studio was framed as a place-based visioning project connected to the University District, Downtown Spokane Partnership, Spokane Business Association, and University of Idaho faculty and students.

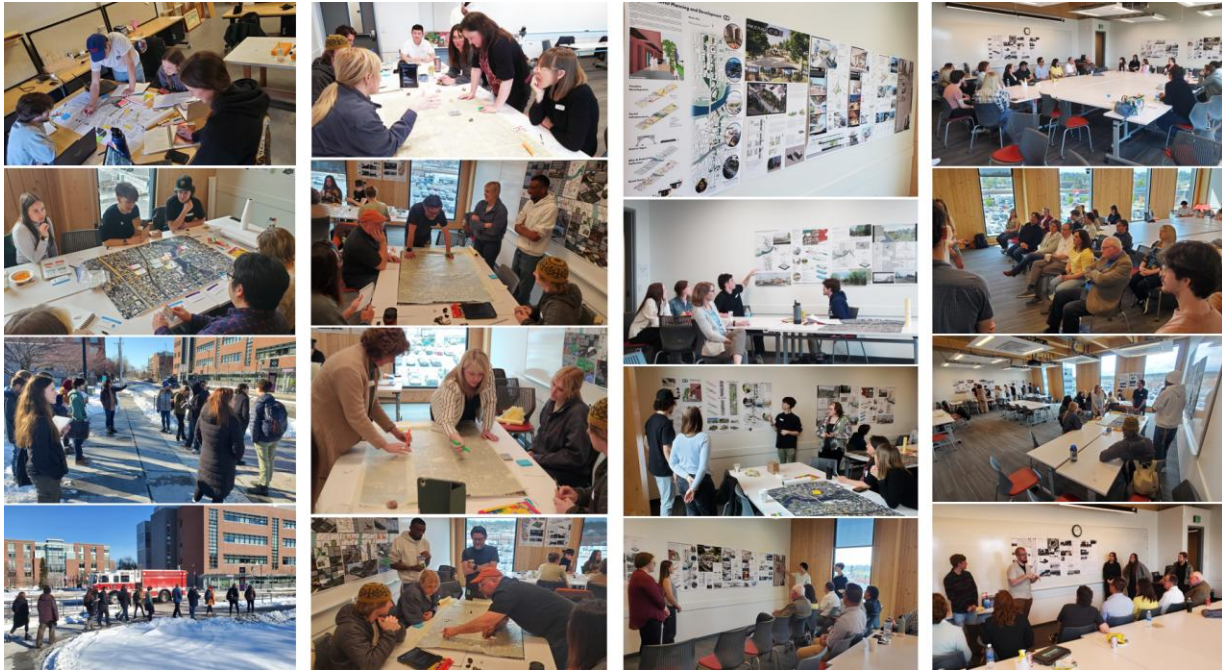


Figure 3: Collaborative studio process. Photographs document field observation, stakeholder-informed discussions, design charrettes, interim reviews, and collective design development conducted during the Spokane University District Gateway Development studio. (Source: Authors).

The collaborative design studio was used not only as a pedagogical setting, but also as a research-through-design platform. Through spatial mapping, field observation, stakeholder-informed discussions, design charrettes, and invited reviews, the study examined the spatial, institutional, and experiential relationship between Downtown Spokane and the University District. Stakeholder-informed discussions and reviews involved representatives from the Spokane University District, Downtown Spokane Partnership, the City of Spokane, Spokane Regional Transportation Council, Spokane Transit Authority, Gonzaga University, Eastern Washington University, Spokane Business Association, and local design professionals. These exchanges helped situate the Gateway area within broader concerns related to transportation planning, institutional development, downtown revitalization, public space, safety, connectivity, and community needs.

The design process generated multiple forms of research material. Mapping and field observation documented existing urban conditions, including land use, circulation, infrastructure, parking, vacant or underused parcels, public space, pedestrian experience, and the physical relationship between Downtown and the University District. Within the studio, students moved from research and site analysis to master planning and focused area development. This process included urban condition analysis, case study research, programming studies, long-term planning scenarios, and more detailed design proposals for selected areas. The project description identifies these phases as research, master planning, and focused area development,

with outcomes including critical research discoveries, scenario comparisons, and planning and design visions for future development.

In this study, the studio outcomes are not treated as individual student projects or final development plans. Instead, they are interpreted collectively as design experiments that generated spatial propositions for the Downtown–University District edge. The four studio group projects were reviewed comparatively to identify recurring spatial themes, programmatic strategies, and design logics. Rather than evaluating the projects as individual design solutions, the analysis focused on repeated patterns across the proposals, including mobility connections, mixed-use civic-institutional interfaces, ecological systems, gateway identity, and public-space strategies. These recurring patterns were then synthesized as design strategies for interpreting the Downtown–University District edge as an active threshold. In this way, the collaborative design studio served as a method for testing both the dual-core interpretation of Spokane and the possibility of redesigning the existing boundary as an active threshold.

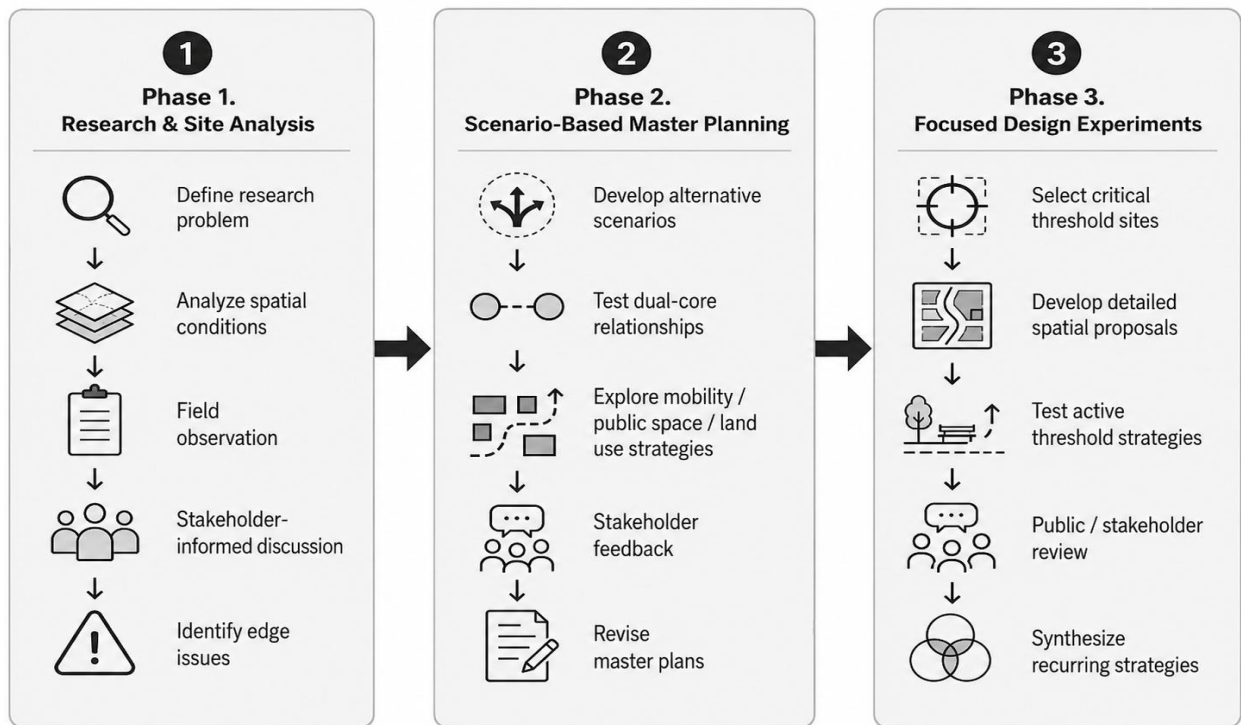


Figure 4: Research-through-design process of the collaborative studio. The diagram summarizes the three-phase process: research and site analysis, scenario-based master planning, and focused design experiments. These phases generated spatial observations, stakeholder-informed insights, planning scenarios, and recurring design strategies for examining the Downtown–University District edge as an active threshold. (Source: Authors).

5. EXISTING EDGE CONDITIONS AND DESIGN STRATEGIES

This section connects the existing edge conditions identified through mapping, field observation, stakeholder-informed discussion, and the collaborative design studio with the recurring strategies that emerged from the studio outcomes. The purpose is not to evaluate individual student proposals, but to synthesize the design experiments as evidence of how the Downtown–University District boundary might be transformed from a fragmented seam into an active threshold. The section first identifies the existing spatial problems of the edge, then discusses three recurring design strategies: mobility and public realm connections, mixed-use civic-institutional interfaces, and ecological and regenerative thresholds.

5.1. Existing Edge Conditions: A Fragmented Seam

The Downtown–University District edge currently operates less as a clear civic interface than as a fragmented seam between two urban cores. This condition was identified through the combined reading of spatial mapping, field observation, stakeholder-informed discussion, and studio-based design analysis. Spatial mapping revealed discontinuities in land use, circulation, public space, and underused parcels, while field observation and stakeholder-informed discussion helped clarify how these discontinuities affected pedestrian experience, safety, visibility, and everyday movement between Downtown Spokane and the University District. The Gateway area near the Division Street Gateway and I-90 off-ramp is especially important in this regard. The project description identifies this area as one of the first impressions of the city and as an entrance to the University District, Downtown Spokane, the Spokane River, higher education campuses, and the Convention Center. At the same time, it notes ongoing challenges related to traffic calming, bicycle and pedestrian access, safety, and connectivity. These conditions show that the edge is not simply a leftover space between districts. It is the spatial condition through which the relationship between the civic-commercial core and the academic-innovation core is experienced.

The problem is not only physical separation. It is also a problem of weak legibility, limited public activity, and uncertain identity. The edge does not yet clearly communicate that Downtown Spokane and the University District are connected parts of a larger urban structure. Instead, it can be experienced as a discontinuous zone between destinations. This weakens the potential for everyday exchange among students, residents, workers, visitors, institutions, and local businesses. For this reason, the existing edge provides the starting point for the design strategies discussed below.

5.2. Mobility and Public Realm Connections

The first recurring strategy across the studio work was to treat mobility as shared public realm. Many projects addressed the edge as a problem of movement, visibility, and pedestrian experience. Rather than treating connectivity only as a transportation issue, the projects examined how walking, biking, transit access, bridge connections, and river access could make the relationship between Downtown Spokane and the University District more visible, comfortable, and active.

These proposals included clearer pedestrian routes, safer crossings, improved bicycle connections, stronger links to the Spokane River, and better connections between the Gateway area, Division Street Bridge, the North Bank, Downtown, and the University District. The central strategy was not simply to move people across the edge more efficiently, but to make the edge itself more legible and usable as part of the public realm. Pedestrian, bicycle, transit, bridge, and river connections were treated as spatial devices that allow the two cores to interact while remaining distinct.

This strategy is important because physical proximity alone does not create urban integration. Without clear and comfortable routes, Downtown Spokane and the University District can remain functionally and perceptually separated. In relation to the dual-core framework, this strategy shifts mobility from a downtown-oriented access problem to a reciprocal connection between two distinct urban cores. By improving mobility as a shared public realm, the studio projects suggested that the boundary could shift from a zone of passage into a more active urban threshold.



Figure 5: Illustrative student proposal for physical connections and transition corridors. One group's proposal illustrates the mobility and public-realm connection strategy, showing how bridges, corridors, and transitional spaces can link distinct urban character areas within the Gateway District. (Source: Student work, adapted by author).

5.4. Ecological and Regenerative Thresholds

A third strategy that emerged from the studio work was to use ecological infrastructure as a shared environmental system linking Downtown Spokane, the University District, and the Spokane River. This strategy connects directly to the broader planning direction of the University District. The project description notes that the UD Next Generation Conceptual Plan 2065 emphasizes sustainability, livability, commercial viability, academic vibrancy, energy and waste innovation, decarbonization, and equitable regenerative development.

In this context, ecology was not treated simply as landscape beautification, but as a framework for rethinking the boundary as a regenerative urban threshold. Several studio projects treated the edge not only as a transportation or development problem, but also as an ecological interface. Design proposals included green corridors, stormwater systems, shaded pedestrian environments, habitat improvements, river connections, and landscape-based public spaces. These strategies suggest that the Downtown–University District boundary can support environmental performance while also improving everyday urban experience.

In relation to the dual-core framework, ecological systems are not treated as secondary landscape improvements, but as shared environmental infrastructure that can connect Downtown Spokane, the University District, and the Spokane River without collapsing their distinct identities. If the boundary is understood only as a line between districts, ecological systems remain secondary design elements. However, if the boundary is understood as an active threshold, ecology becomes one of the main ways through which connection, identity, and public life are produced. In this sense, ecological and regenerative systems help transform the edge from a fragmented seam into a layered threshold that supports climate adaptation, public experience, and the distinct but connected identities of Downtown Spokane and the University District.

5.5. Synthesis: From Fragmented Seam to Active Threshold

The studio outcomes suggest that the Downtown–University District boundary should not be erased or treated only as a development gap. The boundary remains important because Downtown Spokane and the University District have different civic-commercial and academic-innovation identities. However, the boundary should not remain a rigid line of separation. Instead, it can be redesigned as a layered threshold where mobility, public life, institutional exchange, mixed-use development, and ecological systems overlap. The value of the studio work lies not in any single student proposal, but in the collective pattern of strategies that emerged across the projects. These strategies were developed through the studio's research-through-design process, including site analysis, stakeholder-informed discussions, design charrettes, master planning, and focused area development. Across different projects, students repeatedly treated the edge not as a space

to be removed, but as a place where Downtown and the University District could meet through shared public realm, civic-institutional programs, and ecological infrastructure.

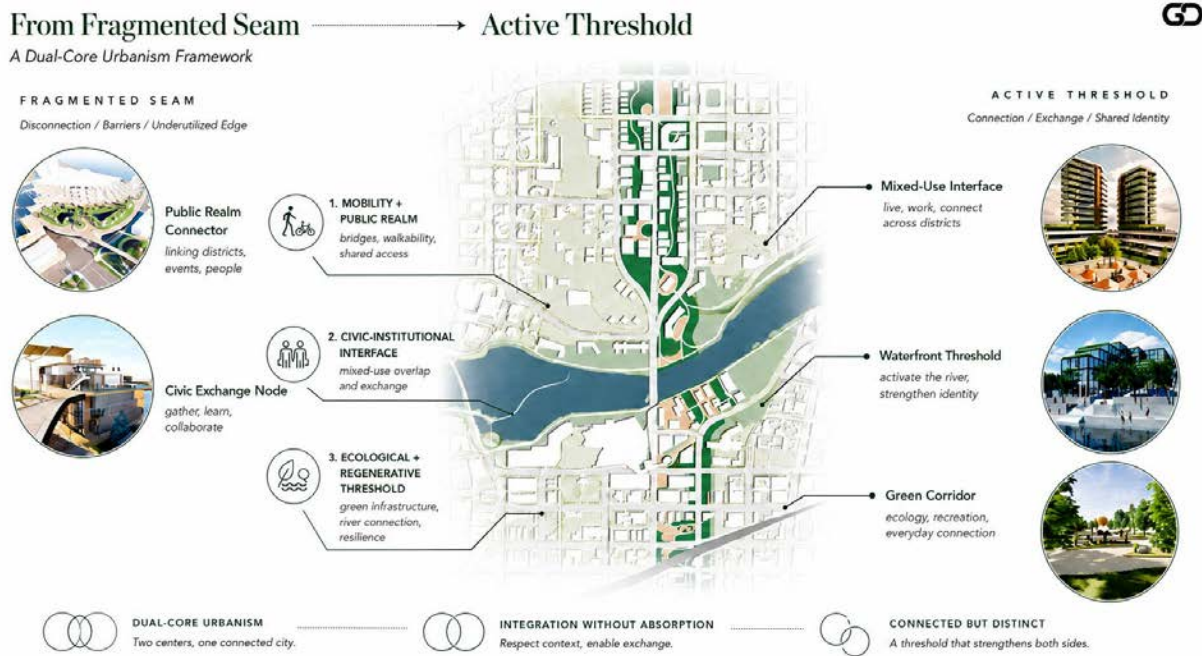


Figure 7: Illustrative synthesis of student proposals for an active threshold framework. The synthesized proposal shows how layered mobility, public-realm, civic-institutional, mixed-use, waterfront, and ecological strategies transform the Downtown–University District edge into an active threshold between distinct urban cores. (Source: Student work, synthesized and adapted by author).

This synthesis supports the central argument of the study that Spokane’s Downtown and University District are better understood as two related but distinct urban cores rather than as a single downtown-centered structure. In this sense, the design strategies move the discussion from a monocentric reading of Spokane toward a dual-core framework. The edge between the two cores is not merely a problem of separation, nor is it a space that should disappear through full integration. It is the key spatial condition through which dual-core urbanism can be designed. By transforming the fragmented seam into an active threshold, the two cores can become more connected without losing their distinct identities. Mobility improvements, civic-institutional interfaces, and ecological infrastructure do not dissolve the boundary. They make it more porous, active, and relational. In this sense, the studio outcomes point toward a model of integration without absorption, a form of connection that strengthens relationships between the two cores while preserving their difference.

6. DISCUSSION: INTEGRATION WITHOUT ABSORPTION

The three strategies identified through the studio outcomes suggest that the relationship between Downtown Spokane and the Spokane University District should not be framed as a simple problem of connection. The issue is not only how to link two nearby districts, but how to structure that connection without reducing one core to the identity or development logic of the other. If the edge is treated only as a gap to be filled, the University District may be absorbed into downtown-oriented commercial and real estate development. Conversely, if the University District develops as a self-contained institutional zone, it may weaken the possibility of broader civic and commercial exchange with Downtown.

This study therefore frames the Downtown–University District boundary as a space of integration without absorption. The boundary remains necessary because the two cores have different roles, identities, users, and institutional structures. Downtown Spokane operates as a civic-commercial core, while the University District operates as an academic-innovation core. The goal is not to erase this difference. Rather, the goal is to design a more porous and active boundary through which the two cores can interact. Together, the strategies of mobility as shared public realm, mixed-use civic-institutional interfaces, and ecology as shared environmental infrastructure show that the boundary can become more relational without disappearing entirely.

This discussion also extends the idea of dual-core urbanism. In a monocentric model, the University District might be understood as an extension of Downtown or as a secondary district. In a broader polycentric model, it might be treated simply as one of many urban nodes. The Spokane case suggests a more specific condition. Downtown and the University District are close enough to shape one another, but different enough to require careful spatial negotiation. The active threshold becomes the design mechanism through which this dual-core relationship can operate.

For mid-sized cities, this has broader implications. University districts are increasingly important to urban development, economic change, public life, and institutional investment. However, their relationship to downtowns is often uncertain. They can support downtown revitalization, but they can also produce institutional enclaves or real estate pressure. The Spokane case suggests that the key question is not whether university districts should be connected to downtowns, but how that connection should be designed, governed, and experienced. In this sense, integration without absorption offers a useful framework for thinking about the future relationship between downtowns and university districts in similar urban contexts.

At the same time, the active threshold should not be understood only as a physical design problem. It also requires coordinated governance among institutions, public agencies, transportation providers, civic organizations, and local stakeholders. Issues of safety, access, homelessness, affordability, and inclusion

should be addressed as part of the threshold rather than displaced by redevelopment, especially given the social and economic challenges identified in the Gateway project context. Because the studio outcomes are exploratory design experiments rather than implemented projects, they should be understood as spatial propositions that reveal possible directions for future planning and design rather than as definitive solutions.

7. CONCLUSION

This study has argued that the relationship between Downtown Spokane and the Spokane University District should not be understood through a purely downtown-centered or monocentric model. Instead, Spokane can be interpreted as a dual-core urban structure in which Downtown functions as a civic-commercial core and the University District functions as an academic-innovation core. The edge between these two cores is therefore not a minor transition zone, but a critical spatial condition through which their relationship is experienced and negotiated. Through mapping, field observation, stakeholder-informed discussion, and a collaborative architecture and landscape architecture design studio, this study examined how the Downtown–University District boundary could be reimagined as an active threshold. The studio outcomes suggested three key strategies: treating mobility as shared public realm, creating mixed-use civic-institutional interfaces, and using ecology as shared environmental infrastructure. Together, these strategies show that improved connection does not require the erasure of the boundary.

The central contribution of this study is the idea of integration without absorption. Downtown Spokane and the University District should become more connected, but not by collapsing their identities into a single development logic. Instead, the boundary between them can be redesigned as a porous, active, and relational threshold that supports exchange while preserving difference. For Spokane and other mid-sized cities, this framework offers a way to rethink the relationship between downtown revitalization, university district development, public space, and urban design.

NOTES AND REFERENCES

1. William Alonso, *Location and Land Use: Toward a General Theory of Land Rent* (Harvard University Press, 1964); Edwin S. Mills, “An Aggregative Model of Resource Allocation in a Metropolitan Area,” *American Economic Review* 57, no. 2 (1967): 197–210; Richard F. Muth, *Cities and Housing: The Spatial Pattern of Urban Residential Land Use* (University of Chicago Press, 1969).

2. Robert C. Kloosterman and Sako Musterd, "The Polycentric Urban Region: Towards a Research Agenda," *Urban Studies* 38, no. 4 (2001): 623–33; Peter Hall and Kathy Pain, eds., *The Polycentric Metropolis: Learning from Mega-City Regions in Europe* (Earthscan, 2006).
3. Thomas Bender, ed., *The University and the City: From Medieval Origins to the Present* (Oxford University Press, 1988); David C. Perry and Wim Wiewel, eds., *The University as Urban Developer: Case Studies and Analysis* (M.E. Sharpe, 2005); Michael S. Harris and Karri A. Holley, "Universities as Anchor Institutions: Economic and Social Potential for Urban Development," in *Higher Education: Handbook of Theory and Research*, ed. Michael B. Paulsen (Springer, 2016).
4. Bruce Katz and Julie Wagner, *The Rise of Innovation Districts: A New Geography of Innovation in America* (Brookings Institution, 2014).
5. Ali Madanipour, *Public and Private Spaces of the City* (Routledge, 2003).
6. Stavros Stavrides, *Towards the City of Thresholds* (Professional Dreamers, 2010).
7. Alonso, *Location and Land Use: Toward a General Theory of Land Rent*; Mills, "An Aggregative Model of Resource Allocation in a Metropolitan Area"; Muth, *Cities and Housing: The Spatial Pattern of Urban Residential Land Use*.
8. Kloosterman and Musterd, "The Polycentric Urban Region: Towards a Research Agenda"; Hall and Pain, *The Polycentric Metropolis: Learning from Mega-City Regions in Europe*.
9. Bender, *The University and the City: From Medieval Origins to the Present*; Perry and Wiewel, *The University as Urban Developer: Case Studies and Analysis*; Michael S. Harris and Karri A. Holley, "Universities as Anchor Institutions: Economic and Social Potential for Urban Development."
10. Michael S. Harris and Karri A. Holley, "Universities as Anchor Institutions: Economic and Social Potential for Urban Development."
11. Katz and Wagner, *The Rise of Innovation Districts: A New Geography of Innovation in America*.
12. Robert M. Fogelson, *Downtown: Its Rise and Fall, 1880–1950* (Yale University Press, 2001); Alison Isenberg, *Downtown America: A History of the Place and the People Who Made It* (University of Chicago Press, 2004).
13. Madanipour, *Public and Private Spaces of the City*.
14. Stavrides, *Towards the City of Thresholds*.
15. Spokane University District, *University District Strategic Master Plan Update: Summary* (Spokane University District, 2019), <https://static.spokanecity.org/documents/projects/south-university-district-sub-area-planning/university-district-strategic-master-plan-update-2019-summary.pdf>.
16. City of Spokane, *Spokane Downtown Plan* (City of Spokane, 2021), <https://my.spokanecity.org/shapingspokane/downtown-plan/>.
17. Spokane University District, *University District Strategic Master Plan Update: Summary*.
18. Spokane University District, *UD Next Generation Conceptual Plan 2065* (Spokane University District, 2024), https://www.spokaneudistrict.org/uploads/publication/files/object/Final_UD_Next_Generation_Conceptual_Plan_2065_Web_view_cmpsd.pdf.
19. City of Spokane, *South University District Sub-Area Planning* (City of Spokane, 2020), <https://my.spokanecity.org/projects/south-university-district-sub-area-planning/>.

Traditional Dwellings and Settlements

Working Paper Series

THE POLITICS OF TRANSLATING TRADITION: CONTINUITY AND REINTERPRETATION OF AUTO-CENTRIC PLANNING TRADITIONS

Shanshan Hu

THE POLITICS OF TRANSLATING TRADITION: CONTINUITY AND REINTERPRETATION OF AUTO-CENTRIC PLANNING TRADITIONS



This paper will critically examine how auto-centric planning traditions are translated, both transformed and continued, across shifting governance contexts, using White Horse Road in Greenville County, South Carolina as an empirical case. Rooted in mid-20th-century suburbanization and the Federal-Aid Highway Act of 1956, this six-lane arterial embodies political and institutional choices that infrastructure invisibly carries. Its consequences are concrete: White Horse Road accounts for 11.22% of Greenville's pedestrian injuries (2014-2024), bisects one of the city's hottest heat zones, and systematically excludes low-income communities from safe access to daily life. Through critical ethnographic methods that combine archival research and observation, the paper will conclude by articulating the dialectical relationship among political power, spatial tradition, and the built environment in the American South.

1. INTRODUCTION

Roads are political documents. The lane widths, speed standards, sidewalk continuity, and shade conditions of any given corridor reflect decisions made by identifiable political actors, such as legislators, planners, engineers, developers. These decisions determine whose mobility is prioritized, whose safety is treated as secondary, and which communities bear the costs of others' convenience.^{1,2}

White Horse Road in Greenville County, South Carolina makes this argument unusually legible for three reasons. First, it has a documented two-century history that allows the political decisions shaping its successive forms to be traced through the archival record.^{3,4,5} Second, it carries measurable present-day harm. White Horse Road accounts for 11.22% of Greenville's pedestrian injuries between 2014 and 2024 and is located within one of the city's most intense urban heat zones, disproportionately affecting the low-income and predominantly Black communities along the corridor.^{6,7,8} Third, it is located in the American South, where the intersection of race, poverty, and auto-centric planning is particularly acute and calls for urgent intervention.⁹ These three conditions together make White Horse Road a case worth examining in detail.

The road's story begins as a Cherokee hunting path in the Upstate (the inland, piedmont region of South Carolina, situated between the coastal lowcountry and the Appalachian Mountains)¹⁰ that was translated into a colonial wagon road following the Treaty of DeWitt's Corner in 1777.^{3,4} Over two centuries, it was reconfigured again as an industrial connector, then as a postwar suburban arterial, and today operates as a six-lane road that exposes pedestrians to traffic violence, heat stress, and spatial exclusion. This paper examines the specific political decisions that drove each of those reconfigurations, and the communities that each reconfiguration left worse off.

The analysis treats White Horse Road's physical form not as technical outcomes but as spatial expressions of political priorities. This distinction matters because it shifts the question from "how do we fix the road?" to "who decided to build it this way, and why?" Answering that question requires tracing the specific political and economic forces that shaped the corridor at each stage of its development, which is what the historical sections of this paper set out to do. This approach draws on Alexander Cuthbert's framework of spatial political economy, which holds that urban form is materially produced by the political economy of its time: modes of production generate modes of urbanization, and the built environment is therefore a spatial record of the power relations embedded in each successive era.² As Cuthbert argues, urban forms do not spring fully formed from the ground their own volition. They emanate in the first instance from the political economy of the time and are materially produced by it. Neither are forms of consciousness independent factors in the creative process. They, too, are socially produced.

Applied to White Horse Road, this means that the corridor's six lanes, absent shade, and discontinuous sidewalks are not engineering oversights but the accumulated spatial output of specific political and economic decisions. These decisions were made by identifiable actors in identifiable eras and consistently gave priority to vehicular mobility (whether by wagon or automobile).

1.1. White Horse Road: A Case of Spatial Tradition

White Horse Road takes its name from one of the earliest colonial wagon roads in the Upstate of South Carolina. Before it was a road in the European sense, it was a Cherokee hunting path running near the Saluda River, part of a network of trails that, as historian Judith Bainbridge documents, became "pioneer's[sic] wagon roads, later the routes of trains and, often, modern highways."³ This long continuity of corridor use across radically different political and economic contexts makes White Horse Road an unusually legible site for examining how spatial traditions are translated: the alignment persists, but the social priorities reflected in its design have been fundamentally reconfigured in each era.

2. LITERATURE REVIEW

2.1. Spatial Political Economy: The Theoretical Framework

This paper applies Alexander Cuthbert's framework of spatial political economy as its primary theoretical foundation. Cuthbert argues that mainstream urban design has been "colonized by architecture and planning" and rendered "fundamentally atheoretical" by its failure to situate built form within the political and economic structures that produce it.¹ He proposes that only spatial political economy can provide urban design with genuine theoretical foundations, because urban form is primarily a product of the political

economy of capitalism: modes of production generate modes of urbanization, and the built environment, including its roads, sidewalks, and public spaces, is a spatial expression of those modes and the power relations that sustain them.^{1,2} Cuthbert illustrates this argument historically:

“In former eras, modes of production such as slavery, feudalism, and merchant and industrial capitalism generated economic and political structures that demanded specific urban forms. The Roman spectacle demanded the Coliseum; Greek colonization in Asia Minor required the creation of the grid-iron plan; merchant capitalism produced a new form, Uffizi, to reflect economic change dependent on a new type of administration based in “the office” and so on. Rather than eulogizing Art, the Florentine Uffizi Gallery actually symbolizes the ascent of bureaucracy. In turn, globalization and informational capitalism is demanding its own forms of environment derived from principles many times removed from these historical examples.”

Alexander Cuthbert¹

Applied to White Horse Road, this logic is direct: the corridor’s successive forms, from colonial wagon road to industrial connector to postwar arterial, are not accidental but each reflect the dominant mode of production of their era and the political actors who administered it. This framework generates three analytical tools for this paper. First, seemingly technical design choices reveal underlying political priorities: lane widths, speed standards, and right-of-way allocations reflect whose mobility is valued and whose is treated as residual. Second, the built environment functions as an invisible carrier of political and economic choices that are naturalized as technical necessity and thereby rendered difficult to contest. Third, understanding a corridor like White Horse Road requires tracing the specific political economies, and the specific actors, that produced each of its successive forms.

Cuthbert’s framework connects with Michel Callon’s concept of translation from the sociology of science. Callon describes translation as the process by which inherited logics, interests, and material arrangements are enrolled into new configurations, partially preserving what came before while adapting it to new conditions¹⁹. As Callon defines it:

“These moments constitute the different phases of a general process called translation, during which the identity of actors, the possibility of interaction and the margins of manoeuvre are negotiated and delimited.”

Michel Callon¹⁹

In other words, translation is a political process in which actors negotiate what is preserved, what is transformed, and who holds the power to determine the outcome.^{19, 20, 21} Applied to transportation infrastructure, this explains how auto-centric planning persists across eras through active re-enrollment.

Highway-era design standards are inscribed into state specifications and applied to new improvement projects decades later, and the tradition is continually remade by identifiable institutional actors rather than simply inherited.^{22, 23}

When read through Cuthbert's spatial political economy, this process of translation becomes explicitly political. The mechanisms through which auto-centric planning is translated across eras are themselves expressions of the capitalist political economy that generates and sustains auto-centric urbanism as a mode of organizing social space. Translation, in this combined framework, is not merely a sociological description of how things change; it is an account of how power reproduces itself through the built environment.

2.2. Infrastructure as Political Tradition

The argument that infrastructure embeds political choices is well-established, but what matters for this paper is specifying which political choices, made by whom, produced which spatial outcomes along White Horse Road. Langdon Winner's foundational question, "Do Artifacts Have Politics?" As Winner argued, technical objects represent social priorities, embodying the conditions under which they were produced and the interests they were intended to serve.²¹

Applied to roads, this question has been answered most concretely by transportation historians. The Federal-Aid Highway Act of 1956 was not simply a transportation policy but the spatial outcome of a political coalition linking automobile manufacturers, petroleum companies, suburban developers, and defense contractors, who successfully argued that national security and economic growth required organizing American space around the private car.^{9, 14, 17} In Greenville, this coalition's victory translated directly into the reconfiguration of corridors like White Horse Road, widened to arterial standards and reoriented toward suburban commuter throughput.

As Robert Bullard, Glenn Johnson, and Angel Torres document in *Highway Robbery: Transportation Racism and New Routes to Equity*, highway construction in Southern cities systematically confirms the obvious and ignored truth: equality in transportation has been established in name only.⁹ Access to transportation, public and private, determines the physical and social mobility necessary for admission to larger social, economic, and civic worlds. For millions of people, exclusion from transportation networks means drastically compromised life choices.^{9, 24} Their jeopardized health and limited economic opportunities are then compounded by the day-to-day indignities and feelings of frustration and isolation resulting from publicly funded segregation.^{9, 24} In Greenville, as in many Southern cities, the postwar highway program reinforced existing patterns of racial and economic segregation by privileging suburban connectivity over the needs of urban communities, especially for low-income population.

More recent scholarship on the built environment and health equity has extended this analysis to the present, documenting the measurable health consequences of auto-centric infrastructure in communities like those adjacent to White Horse Road. The consequences of auto-centric planning environments for children's active travel to school are well documented in Greenville's own context. Deaton and Ghazanfari's study finds that the percentage of U.S. students walking or biking to school dropped from approximately 50% in 1969 to 13% in 2009, a decline attributed by urban sprawl, parental safety concerns about traffic and crime, and growth in school busing and personal vehicle trips¹³. For families in low-income communities adjacent to auto-centric corridors, walking and cycling carry additional cultural burdens that "the image of children walking and biking to school was linked with not having enough resources," because in low-income communities these modes are associated with economic constraint rather than choice. Parents also reported that even when pedestrian infrastructure exists, it is insufficient: the community wanted fully protected bike lanes, but the city could only provide painted lanes. Infrastructure recourses have always "disproportionately benefited middle-class and affluent communities over low-income communities," with sidewalks and crosswalks "more likely to be implemented in higher-income areas than in lower-income ones."^{25, 26}

2.3. Race, Governance, and the American South

The politics of auto-centric planning in the American South cannot be separated from the region's history of racial segregation and spatial inequality. Greenville's racial geography was formalized through the 1912 segregation ordinances, which established the spatial separation of Black and White communities and defined the city's planning priorities along racial lines for decades. The communities west of the city (served by corridors including White Horse Road) were historically Black and low-income, and they were historically underserved by public investment in transportation infrastructure, parks, and public services.^{13,25}

This pattern of spatial disinvestment reflects a broader logic of what Jonathan Levine calls "planning failure". As Levine argues, when municipalities use their regulatory powers to exclude certain populations and development forms, the "paucity of these options is not a market failure but a product of regulatory policy."²⁸ In the American South, this regulatory power was explicitly racialized. The decisions Hyra identifies as foundational to the "dark ghetto," including "the decisions of White-controlled city councils, planning commissions, and public housing authorities to concentrate high-rise public housing in certain neighborhoods" and "the decisions of White-controlled banks to redline and deny credit to African Americans," translated racial exclusion directly into spatial form.²⁷ The resulting landscape was the product of deliberate governmental choices.

Kolb's research on racially restrictive deed covenants in the region shows that by reserving specific neighborhoods exclusively for white families, those areas accumulated generational wealth through

homeownership, while public investment in sidewalks, street lighting, and road maintenance consistently followed existing wealth rather than need³⁰. The communities along White Horse Road were on the wrong side of that boundary. For White Horse Road, this means that its current form, multilane, shade-free, and pedestrian-unfriendly, cannot be understood apart from the racial politics that have shaped Greenville's spatial development across nearly two centuries.

3. METHODOLOGY: A CRITICAL ETHNOGRAPHIC FRAMEWORK

This paper employs critical ethnographic methods to examine the planning tradition embodied in White Horse Road and the political processes through which that tradition has been translated across successive governance eras. Critical ethnography combines close attention to material conditions with analysis of the power relations that produce them.^{31, 32}

Data collection proceeded through two complementary approaches. First, archival research traced White Horse Road's development from its origins as a Native American path through its contemporary configuration as a six-lane arterial. Key sources included the GPATS Long Range Transportation Plan, the City of Greenville's 2018 Historic Resources Survey, Judith Bainbridge's *A Short History of Greenville* (2024), and municipal planning documents. Second, systematic observational fieldwork documented the corridor's contemporary physical conditions, attending specifically to pedestrian infrastructure, thermal environment, traffic volumes and speed, adjacent land uses, and evidence of active pedestrian and cyclist use near low-income schools.

4. HISTORICAL CONTEXT: WHITE HORSE ROAD AND THE POLITICAL ECONOMY OF PLANNING

The GPATS Long Range Transportation Plan documents that the earliest travel routes in the Upstate were paths first created by wildlife and later used by Native Americans, with White Horse Road among the earliest named colonial corridors.¹³ The corridor's development across three successive eras, each driven by a distinct political economy, each producing a distinct spatial form, each marginalizing a distinct set of communities, is traced in the sections that follow.

4.1. From Cherokee Path to Colonial Wagon Road: The First Translation

White Horse Road originated as a Cherokee trail running near the Saluda River, part of an extensive network of paths connecting hunting grounds, villages, and trading sites across the Upstate of South Carolina. These

paths were not simply routes through a landscape; they were spatial expressions of a communal and spontaneous land-use system organized around collective movement, shared resources, and centuries of ecological knowledge.^{3, 4, 5, 13} What matters for this paper's argument is that the first political act performed on White Horse Road was the forced transfer of that system into one organized around private property and colonial extraction. British colonial expansion into Cherokee territory accelerated through the eighteenth century, structured through trade agreements that gave colonial institutions a monopoly on Indian commerce. The Treaty of DeWitt's Corner, signed in 1777, secured the cession of all Cherokee land to the state of South Carolina, with the exception of the northwestern territory adjacent to the Blue Ridge Mountains.^{3, 4} The state immediately distributed the acquired territory to Patriot soldiers as payment for wartime service and sold the remainder to settlers, converting communal Cherokee paths into private rights-of-way in the same legislative moment that transferred the land itself.^{3, 4}

The physical consequence of this political translation is documented along the White Horse Road corridor. In the early eighteenth century, the Indian trade centered primarily on deerskins. Unlike most other Indian traders, Pearis chose not to rely on Cherokee hunters to transport the skins; instead, he secured his supply by establishing a network of wagon roads. Richard Pearis established a trading post near the falls of the Reedy River and developed the wagon road from the Saluda River to his store, historically known as Pearis' Wagon Road, entering Pickens County at Pearis' Ford on the Saluda River,¹⁸ shown in Figure 1.

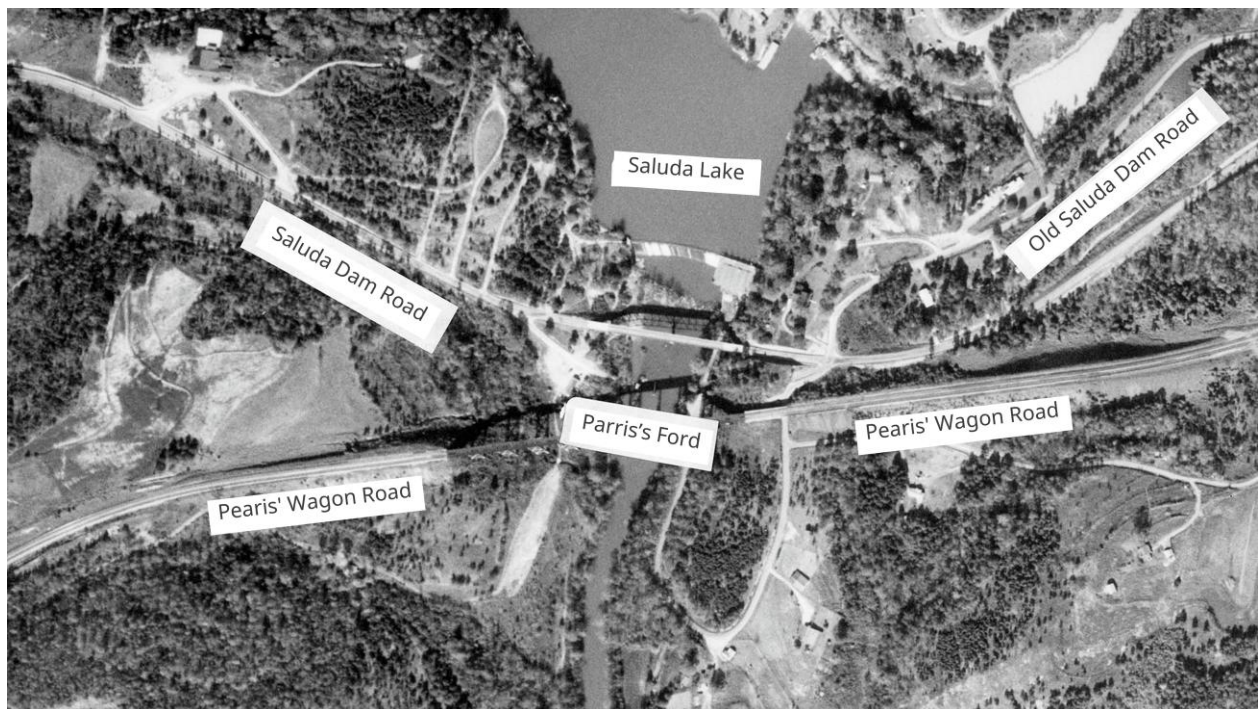


Figure 1: Parris's Ford on Saluda River. (Source: Dennis Chastai, 2023).

Following the Treaty of DeWitt's Corner, Pearis' network of wagon roads emerged as the primary route for settlement and commerce. Many former Indian trade trails, some in existence for centuries, were converted into wagon roads; all ran in close proximity to the site of Richard Parris's trading post. These included the Buncombe, Rutherford, White Horse, and Cedar Lane roads³. Figure 2 shows the current locations of the old Pearis' Ford and White Horse Road.



Figure 2: Current locations of the old Pearis' Ford and White Horse Road. (Source: Shanshan Hu, 2026).

The plantation economy that subsequently developed along White Horse Road made the political stakes of this first translation concrete. In 1792, John Blassingame purchased 2,500 acres along the corridor and established Tanglewood Plantation; Alex McBeth operated a store on the same land that became the commercial and social hub of the surrounding plantation settlement, its centrality documented in the McBeth Store Ledger of 1794, preserved in the South Carolina Digital Library and shown in Figure 3.^{3, 4, 5, 8, 32}

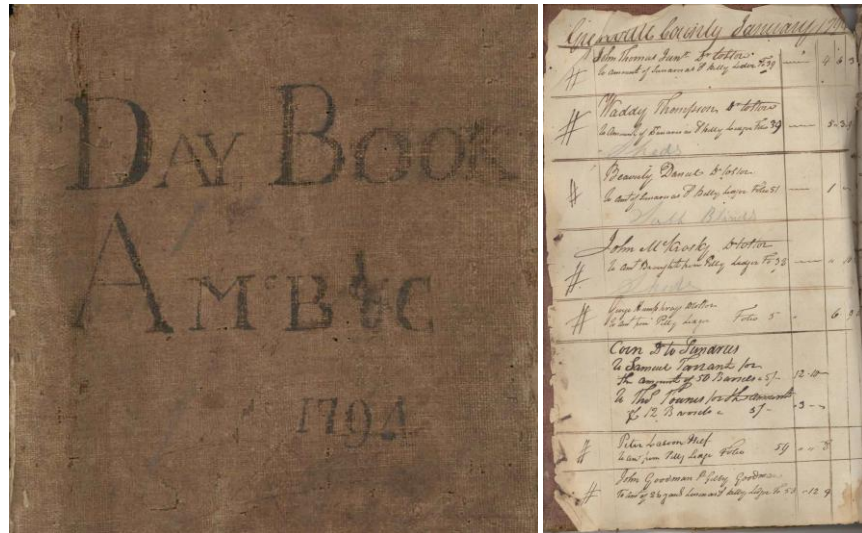


Figure 3: Alexander McBeth Store Ledger, 1794. (Source: Hand-made ledger book. Greenville County Library, South Carolina Room Archives. Digital Date 2007).

The road that had served the collective Cherokee movement now organized a landscape built on enslaved labor. The political actors who shaped the corridor in this era, the state legislature that distributed the land, the planters who purchased it, and the merchants who built along it operated within a system that deliberately excluded the enslaved people whose labor produced the corridor's economic significance. This is the first instance of the pattern this paper traces: the road's spatial form privileged the mobility and accumulation of those with political and economic power, while concentrating cost and constraint on those without it.

4.2. The Auto-Centric Turn: The Second Translation

The second major translation of White Horse Road, from neighborhood connector to auto-centric arterial, unfolded across the mid-twentieth century, driven by the same national forces that reshaped transportation infrastructure across the United States. The historical context of this translation is also documented in considerable detail in Greenville's historical records.

At the end of the 18th century, transportation conditions in Greenville County and surrounding areas began to improve. Following the War of 1812 (1812–1815), industry expanded in the Greenville District. Prior to 1825, the most successful industry to develop in the Greenville District was textile manufacturing.^{11, 12} With the development of industry, significant civic improvements were undertaken in the mid-19th century, with state appropriations and local funds jointly financing the construction of important public facilities. Between 1817 and 1829, the South Carolina legislature appropriated funding for the infrastructure development of canals and roads.^{3, 4} Historically, however, the achievements in road and canal construction were ultimately

overshadowed by the arrival of the railroad. In 1853, the Columbia and Greenville Railroad, Greenville's first railroad, was established. The railroad stimulated economic growth and forged closer commercial ties with other regions.⁴

After the Civil War, racial segregation was maintained on a social level in Greenville, consistent with the general pattern of Southern history. Until the segregation ordinances were passed in 1912, the African American population faced no legal restrictions regarding commerce, housing, and schooling.^{4, 8}

At the beginning of the twentieth century, the City of Greenville underwent major infrastructure and public service development. By the mid-1940s, in the postwar period, the City of Greenville's Historic Resources Survey documents that city workers widened Main Street to four lanes to accommodate the widespread use of automobile transportation, as shown in Figure 4.^{4, 5} This signaled the beginning of a broader reconfiguration of the city's road network around the logic of vehicular throughput.



Figure 3: View of Main Street in Greenville, circa 1940. (Source: Ashmore, *Greenville: Woven from the Past*).

The Federal Highway Act of 1956 accelerated this process. Rooted in the infrastructure priorities and suburbanization trends of the mid-20th century, American road planning between the 1950s and 1970s emphasized vehicle speed and throughput.¹⁴ Following its passage, Interstate 85 was constructed south of the city.¹⁵ Driven by the Federal-Aid Highway Act of 1956 and influenced by this Interstate Highway System, White Horse Road evolved into an auto-first regional transportation tradition. Its planning and development reflect the auto-centric character of 20th-century American road modernization.

“In the late 1950s, the expansion of the federal highways supported further growth of textile mills and industrial plants in and around Greenville. Following the passage of the Federal Highway Act in 1956, Interstate 85 North was constructed south of the city of Greenville. Additionally, the expansion of US Highway 276 created Interstate 385, known as the ‘Golden Strip’, which connected Greenville to Interstate 26.”

Archie Vernon Huff ⁴

In this context, White Horse Road was reconfigured from a community connector into a regional arterial serving the auto-centric suburban development pattern that characterized postwar American urbanization. The design standards, such as wide travel lanes, high operating speeds, minimal sidewalk accommodation and the absence of street trees and shade, applied to the corridor were drawn directly from the engineering norms of the highway era, norms developed for Interstate-scale infrastructure and applied solely to local corridors that had previously served pedestrian-scale community life.

As the GPATS *Long Range Transportation Plan* points out, the impact of postwar highway investment on the Greenville-Pickens region rivaled that of the arrival of the railroad in the 1870s.^{25, 26} This highway construction reconfigured the region’s transportation logic around vehicular mobility, rendering earlier patterns of pedestrian and community movement structurally obsolete.

The racial politics of this translation were not incidental. In Greenville, as elsewhere in the American South, postwar highway investment and suburban development were racially structured processes, privileging white middle-class mobility and suburban residence while disinvesting from the urban neighborhoods, predominantly Black and low-income, that highway expansion displaced or bypassed. This pattern precisely reflects what Cuthbert identifies as the core mechanism of capitalist urbanization: modes of production generate urban forms organized around auto-centric and suburban expansion and produce an urban form that reflects racial and economic inequality in its spatial logic.²

The communities along White Horse Road, situated in the Greenville west end, historically Black and low-income, experienced the translation of auto-centric standards into their neighborhood corridor not as an improvement but as an imposition that was a reconfiguration of shared space that served suburban commuters at the expense of local residents.^{9, 8, 16, 17, 25, 26}

4.3. Contemporary Governance and the Third Translation

The third translation of White Horse Road is ongoing. Each successive round of institutional engagement with the corridor translates the inherited auto-centric tradition into a contemporary form, such as signal adjustments, repair work, partial sidewalk additions and access management decisions. It preserves its

fundamental priorities while adding surface accommodations to changing expectations about pedestrian infrastructure. This action does not transform the corridor's basic spatial logic; it reproduces it in a slightly updated form, as shown in Figure 4.



Figure 4: Recent On-Site Photos of White Horse Road, 2025. (Source: Shanshan Hu).

On-site observation and spatial documentation along White Horse Road make the consequences of this governance tradition concrete. The corridor's characteristics, observable along its entire length, consistently communicate that the space was designed for vehicles rather than for people. Vehicular access points are numerous and frequent, yet the majority lack traffic lights or marked crossings, leaving pedestrians to negotiate turning traffic without protection. Although sidewalks run along both sides of the road, field observation reveals that they are damaged, narrow, and immediately adjacent to travel lanes with no buffer. These conditions place pedestrians in direct proximity to fast-moving vehicles. In the surrounding residential streets, sidewalk coverage is sparse and largely confined to interior apartment complexes, effectively absent from the public corridors where residents actually need to walk. No bike lanes exist anywhere in the study area. Speed management infrastructure, such as speed limit signage and speed-reduction devices, is minimal along public streets and concentrated almost entirely within private apartment complexes, leaving the shared public realm without effective traffic protection.

The thermal conditions of the corridor compound these physical dangers. Shade structures, both canopy and artificial, are effectively absent along White Horse Road and across the surrounding study area, leaving pedestrians fully exposed to direct solar radiation. Extensive impervious pavement, such as road surfaces and large above-ground parking lots, intensifies surface heat. Greenville's climate means that temperatures regularly exceed the threshold at which prolonged outdoor exposure becomes a health risk, and the lack of shade makes conditions along the corridor meaningfully more dangerous than in tree-canopied neighborhoods nearby. They fall disproportionately on predominantly low-income communities, which have

historically borne the greatest costs of auto-centric planning in the American South while possessing the least institutional power to reshape it.

Fragmentation compounds the difficulty of transformation. The governance structure through which White Horse Road is managed is itself a product of the political tradition this paper has traced. The corridor is governed by overlapping jurisdictions: the City of Greenville, Greenville County, and the South Carolina Department of Transportation (SCDOT) with different funding streams, institutional priorities, and accountability structures. SCDOT standards, which govern the corridor's design specifications, remain oriented toward vehicular level of service rather than pedestrian safety or thermal comfort. When communities have sought infrastructure improvements, they have encountered fiscal constraints and governance fragmentation that make coordinated change structurally difficult. As Deaton and Ghazanfari document in comparable Greenville corridors, community demands for fully protected pedestrian infrastructure have repeatedly been reduced to painted lane markings because the applicable standards and available budgets do not support the infrastructure residents actually need.^{25, 26}

Design standards function as the mechanism through which this tradition is reproduced. The priorities of postwar highway engineering are re-enrolled in each new governance cycle through SCDOT specifications applied to improvement projects, producing a corridor whose form is simultaneously historical and contemporary. Each missing crosswalk and each absent shade structure is not an oversight but the spatial output of a governance system that has consistently made vehicular throughput the path of least institutional resistance.

5. RESULTS

5.1. Physical Tradition: Accumulated Political Choice

Walking along White Horse Road today, people encounter the physical residue of seven decades of auto-centric planning. The corridor's most immediate characteristic is its scale. Six lanes of traffic are operating at speeds that pose a high risk to pedestrians. Sidewalks are present on some roads and absent on others, their discontinuity reflecting the fragmentary character of pedestrian infrastructure investment over time. Where sidewalks exist, they are typically positioned immediately adjacent to car lanes, without buffer plantings or street trees, exposing pedestrians to the acoustic and thermal environment of a high-volume arterial. Shade is absent along most of the corridor.

These physical conditions reflect a coherent set of design priorities that have been consistently reproduced and translated across successive actions of investment and improvement. The physical design of the road

communicates clearly to users that walking is not anticipated or accommodated, shaping spatial behavior and mobility choices in ways that compound existing inequities. As established in the introduction, White Horse Road carries a disproportionate share of pedestrian injuries citywide, a figure that reflects the structural danger of its design rather than any incidental characteristic of the communities it passes through.

5.2. The Image of Walking and the Politics of Spatial Exclusion

Beyond the physical conditions of the corridor, auto-centric spatial form produces cultural consequences that compound its physical dangers. In communities organized around vehicular infrastructure, walking and cycling become associated not with health, recreation, or environmental consciousness but with economic necessity and social vulnerability, the absence of a car rather than a freely chosen mode of movement.^{8, 25, 26}

This dynamic is documented in Greenville's adjacent West End neighborhood by Deaton and Ghazanfari, whose fieldwork at A.J. Whittenberg Elementary School, a community with a comparable demographic profile to those along White Horse Road, though distinct in its specific geography and school context, reveals a pattern that is likely transferable to the White Horse Road corridor. Their research finds that:

“In low-income communities, walking and sometimes biking are necessary forms of transportation when driving is not accessible mostly due to economic constraints, e.g., you can't afford a car, your car broke down and you cannot fix it, you don't have time to drive your kids, etc. Therefore, in the West End, the image of children walking and biking to school was linked with not having enough resources.”

Lyndsey Deaton & Zahra Ghazanfari²⁶

This finding has direct implications for White Horse Road. When the built environment is organized around the automobile, pedestrian mobility becomes legible to residents as a marker of economic precarity rather than a legitimate or valued mode of movement. The consequence is not simply lower rates of walking but a spatial culture in which the corridor's auto-centric logic is actively reproduced through the everyday choices and self-perceptions of the communities it affects.

Parents who might otherwise allow their children to walk choose a car instead of avoiding the stigma of being seen as unable to provide otherwise. A dynamic Deaton and Ghazanfari document directly in the West End context, and it is structurally likely to operate along White Horse Road for the same reasons: it is a historically low-income, predominantly Black and Latino community adjacent to a corridor whose design communicates that pedestrian movement is residual rather than valued.^{25, 26}

This cultural dimension matters because it means that improving physical infrastructure alone, such as adding sidewalks, crossings and shade, is necessary but not sufficient. The social bias attached to walking in auto-centric low-income environments is itself a product of the spatial tradition this paper has traced, and it will not dissolve automatically when physical conditions improve. Any intervention strategy must engage the cultural meaning of pedestrian mobility alongside its physical conditions.

5.3. Who Bears the Consequences: Heat and Hazard

The communities most affected by the auto-centric tradition of White Horse Road are those least able to exit it. White Horse Road cuts through one of the City of Greenville's most intense urban heat zones, a designation that reflects the combined effects of impervious surface coverage, the absence of tree canopy, and automobile exhaust from heavy traffic. For pedestrians, the corridor's thermal environment poses a public health hazard.

Auto-centric infrastructure produces cascading social consequences that extend far beyond the physical design of the road itself. The time costs of auto-centric design fall disproportionately on those least able to absorb them. Deaton and Ghazanfari document that in communities adjacent to auto-centric corridors, the parents' inability to allow their child to walk home safely forces them to absorb the costs of the corridor's design in the form of lost work time, a burden that falls disproportionately on low-income households with inflexible employment arrangements.^{25, 26} The corridor's design does not simply inconvenience these households; it translates the absence of pedestrian infrastructure directly into an economic constraint. The structural condition of the road is translated into the vicious cycle of economic hardship through the absence of choices.

6. DISCUSSION AND LIMITATIONS

The findings from White Horse Road support and extend the theoretical framework of translation introduced in this paper's literature review. The auto-centric planning tradition embodied in the corridor is an active, ongoing process of institutional reproduction.

This understanding of tradition as translation has important implications for how designers, planners, and advocates approach the challenge of transforming auto-centric corridors. If the tradition is reproduced through institutional mechanisms, in other words, design standards, funding streams, governance structures and ownership regimes, then transforming it requires engaging those mechanisms directly, not merely advocating for different physical outcomes.

The racial and economic dimensions of the White Horse Road case are not incidental to this analysis; they are central to it. The communities most affected by the corridor's auto-centric tradition are those with the least institutional power to change it. This is not coincidental. The spatial tradition of auto-centricity in the American South emerged in a context of racial segregation and economic inequality, and its contemporary translations continue to reflect and reinforce those conditions. Design interventions that do not engage with this political history risk reproducing the tradition in new forms, as related research on Safe Routes to School and active mobility infrastructure in gentrifying Greenville neighborhoods has documented.^{13, 29} Community participation in public hearings is necessary but not sufficient; what is needed is engagement with the institutional processes through which transportation standards are set, funding priorities are determined, and governance responsibilities are allocated.

The conference theme of "Translating Traditions" is precisely apt for understanding White Horse Road. The road has been translated, across successive eras, from a Cherokee path to a colonial wagon road, from a neighborhood connector to an auto-centric arterial. Each translation preserved certain elements of what came before while reconfiguring others in response to new political and economic imperatives. The challenge for contemporary designers and planners is to translate a new translation, one that preserves the corridor's geographic role and features while reconfiguring its social and spatial priorities in ways that serve the communities that depend on it.

This study has several limitations. As a desk-based study, the analysis relies entirely on archival research, published historical records, and the findings of prior empirical work, most centrally Deaton and Ghazanfari's (2024) fieldwork at A.J. Whittenberg Elementary School in Greenville's West End, rather than original interview or observational data collected along White Horse Road itself. The absence of primary fieldwork means that community perspectives on the corridor are interpreted through existing scholarship rather than drawn directly from residents and users of White Horse Road. The historical reconstruction of White Horse Road's development relies on fragmentary archival evidence and may not fully capture the decisions and actors that shaped the corridor at each stage of its translation. Finally, as researchers approach communities with which we have limited prior relationships, our analysis is subject to the limitations of positionality that affect all ethnographic work.

7. CONCLUSION

White Horse Road in Greenville County, South Carolina, is the material residue of a planning tradition that has been translated across two centuries. Originally a former Cherokee trail near the Saluda River, the road's early reconfiguration reflects a colonial logic of land acquisition and plantation settlement, exemplified by

John Blassingame's 1792 purchase of the 2,500 acres Tanglewood Plantation. By the late 18th century, the intersection of White Horse and Island Ford Roads had emerged as a major commercial node, shown by Alexander McBeth's store. As Greenville transitioned into the "Textile Center of the South" during the early 20th century, the corridor evolved to support the industrial and residential surge of the "Great Migration". In the postwar period, the main road was widened to four lanes to accommodate the widespread use of automobiles and following the passage of the Federal-Aid Highway Act of 1956, Interstate 85 North was constructed south of the city, directly promoting the transition with White Horse Road to auto-centric planning. These successive reconfigurations are, in Cuthbert's terms, spatial expressions of the political and institutional priorities of their era.

The politics embedded in this tradition are not invisible; they are written in the road's design, in its six lanes and absent shade and discontinuous sidewalks, and in the pedestrian injury data that documents the human cost of those design choices. This paper has argued that understanding auto-centric planning as a tradition actively translated across time is essential for developing strategies to transform it. Translation mechanisms, such as design standards, capital flows, governance structures, and property rights regimes, are precisely the key factors that sustain and reproduce this tradition; therefore, if substantive change is to be achieved, these mechanisms must serve as the starting point for action. Piecemeal Improvements and accommodations do not alter the fundamental priority structure of the corridor or the institutional logic that reproduces it.

The communities adjacent to White Horse Road deserve a different translation. They deserve a corridor that acknowledges their presence, accommodates their movement, and reflects their right to safe and dignified access to the public realm. This paper questions who has the power to shape the spaces in which everyday life unfolds, and whose lives are made more or less livable by the choices that power produces.

NOTES AND REFERENCES

1. Banerjee, Tridib, and Anastasia Loukaitou-Sideris. *Companion to Urban Design*. 1st ed. Routledge, 2011.
2. Cuthbert, Alexander R, and John Punter. Review of *The Form of Cities: Political Economy and Urban Design*. *Journal of Urban Design* 12, no. 1 (2007): 148–53.
3. Bainbridge, Judith T. *A Short History of Greenville*. First edition. University of South Carolina Press, 2024.
4. Huff, Archie Vernon. *Greenville The History of the City and County in the South Carolina Piedmont*. University of South Carolina Press, 1995.
5. South Carolina Department of Archives and History. *Greenville City Historic Contexts*. 2018. [https://scdah.sc.gov/sites/scdah/files/Documents/Historic%20Preservation%20\(SHPO\)/Research/Historic%20Contexts/GreenvilleCity2018.pdf](https://scdah.sc.gov/sites/scdah/files/Documents/Historic%20Preservation%20(SHPO)/Research/Historic%20Contexts/GreenvilleCity2018.pdf).

6. Smart Growth America. “*State of the States*.” Accessed April 12, 2026. <https://www.smartgrowthamerica.org/signature-reports/state-of-the-states/>.
7. Bike Walk Greenville. “*Remembering Those Who Have Died On Our Roads*.” Accessed April 12, 2026. <https://bikewalkgreenville.org/remembering-those-who-have-died-on-our-roads/>.
8. Bainbridge, Judith G. *Greenville’s West End*. Westend Association, 1993.
9. Bullard, Robert D., Glenn S. Johnson, and Angel O. Torres. *Highway Robbery: Transportation Racism and New Routes to Equity*. Cambridge, MA: South End Press, 2004.
10. ”Upstate” refers to a part of a state remote from its large cities, especially the northern part (Soanes and Stevenson, Concise Oxford English Dictionary, 11th ed. rev., Oxford: Oxford University Press, 2008). In South Carolina, the term designates the inland piedmont counties — including Greenville, Spartanburg, and Pickens, distinct from the coastal lowcountry.
11. Cooper, Nancy Vance Ashmore, Jamie S Pickrell, and Greater Greenville Chamber of Commerce. *Greenville : Woven from the Past : An Illustrated History*. 1st ed. Windsor Publications, 1986.
12. Belcher, Ray. *Greenville County, South Carolina : From Cotton Fields to Textile Center of the World*. History Press, 2006.
13. Greenville-Pickens Area Transportation Study. “*Long-Range Transportation Plan (LRTP)*.” Accessed April 12, 2026. <https://gpats.org/Plans/LRTP.aspx>
14. Kaszynski, William. *The American highway: the history and culture of roads in the United States*. McFarland, 2000.
15. Anne Peden and Jim Scott. *Highway 25 in the Carolinas: A Brief History*. 1st ed. Arcadia Publishing, 2021.
16. Park, Keunhyun, Reid Ewing, Sadegh Sabouri, and Jon Larsen. “Street Life and the Built Environment in an Auto-Oriented US Region.” *Cities* (Kidlington) 88 (May 2019): 243–51. <https://doi.org/10.1016/j.cities.2018.11.005>.
17. Rose, Mark H. *Interstate : Express Highway Politics, 1939-1989*. Rev. ed. University of Tennessee Press, 1990.
18. Chastain, Dennis. “*How 1700s Wagon Roads Made Greenville a Center of Commerce: Field Notes with Dennis Chastain*.” Accessed April 20, 2026. <https://greenvillejournal.com/history/how-1700s-wagon-roads-made-greenville-a-center-of-commerce-field-notes-with-dennis-chastain/?utm>
19. Callon, Michel. “Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Briec Bay.” *The Sociological Review (Keele)* (London, England) 32, no. 1_suppl (1984): 196–233. <https://doi.org/10.1111/j.1467-954X.1984.tb00113.x>.
20. Stehlin, John. Review of *The Urban Political Economy and Ecology of Automobility: Driving Cities, Driving Inequality, Driving Politics*. *The AAG Review of Books* 4, no. 4 (2016): 225–27. <https://doi.org/10.1080/2325548X.2016.1222833>.
21. Winner, Langdon. “Do Artifacts Have Politics?” *Daedalus (Cambridge, Mass.)* (Boston) 109, no. 1 (1980): 121–36.
22. Carmona, Matthew. “The Place-Shaping Continuum: A Theory of Urban Design Process.” *Journal of Urban Design* (Nottingham) 19, no. 1 (2014): 2–36. <https://doi.org/10.1080/13574809.2013.854695>.
23. Madanipour, Ali. *Design of Urban Space : An Inquiry into a Socio-Spatial Process*. Wiley, 1996.
24. Landman, Karina, and Patricia Aelbrecht. “Public Space and Equity: Reconsidering the Socio-Spatial Complexities of Spatial Equity.” *Urban Design International (London, England)* (London) 30, no. 3 (2025): 147–49. <https://doi.org/10.1057/s41289-025-00300-8>.

25. Deaton, Lyndsey, and Zahra Ghazanfari. "Unintended Gentrification: Community Perspectives on Children's Active Mobility in the American South." *Cities & Health*, September 24, 2025, 1–19. <https://doi.org/10.1080/23748834.2025.2544098>.
26. Deaton, Lyndsey, and Zahra Ghazanfari. "*Disrupting Auto-Centric Planning Traditions: Gentrification and Perspectives on Children's Active Mobility in the American South*." Paper presented at the International Association for the Study of Traditional Environments Conference, 2024.
27. Hyra, Derek S. *Race, Class, and Politics in the Cappuccino City*. The University of Chicago Press, 2018.
28. Levine, Jonathan. *Zoned out : Regulation, Markets, and Choices in Transportation and Metropolitan Land-Use*. 1st ed. Resources for the Future, 2005.
29. Lippert, Shi Institute at Furman-Prepared by Dr Ken Kolb, Mike Winiski, Sam Hayes, and Catherine. "Racial Displacement in Greenville, SC". ArcGIS StoryMaps. February 19, 2026.
30. Underwood, Tina. "In Greenville County, Past Racist Deeds Abet Gentrification, Displacement." Furman University, August 18, 2022. <https://www.furman.edu/news/in-greenville-county-past-racist-deeds-abet-gentrification-displacement/>.
31. Crotty, Michael. *The Foundations of Social Research : Meaning and Perspective in the Research Process*. Sage Publications, 1998.
32. Madison, D. Soyini. *Critical Ethnography : Method, Ethics, and Performance*. Sage, 2005.
33. Greenville County Library System. "White Horse Road Map." 1956. *Greenville Memory Digital Collections*.

Traditional Dwellings and Settlements

Working Paper Series

INFRASTRUCTURE RECONFIGURED: THE ZHANG MEIZHI ALLEY WATER TOWER AS A SITE OF TRANSLATION

Xinrui Wang

INFRASTRUCTURE RECONFIGURED: THE ZHANG MEIZHI ALLEY WATER TOWER AS A SITE OF TRANSLATION



The paper reinterprets the early 20th-century Zhang Meizhi Alley water tower in Wuban as a paradigmatic case of infrastructural translation. Moving beyond the conventional narrative of Sino-Western fusion, it reveals how local Chinese agents played active roles in reshaping the design, materials, and symbolic meanings of the tower to fit local cultural, spatial, and governance frameworks. Drawing on the writings of British engineer Moore and local municipal documents, the paper conceptualizes the water tower as a negotiated object emerging at the intersection of three domains: a British design prototype rooted in masonry water towers; the localized construction practices relying on local stone-masonry expertise and regional materials; and culturally embedded visual and spatial symbolism, including the octagonal form resonant with Bagua cosmology and the tower's siting near Tianyi Temple. The translation of the tower unfolded as a multi-layered negotiation: institutionally between the British engineer and Chinese bureaucrats; materially between imported typologies and local craftsmanship; and socially between state actors and a skeptical public. Although initially perceived as an imposition, the tower gradually gained public acceptance through its functional efficacy in water supply and firefighting, eventually becoming a symbol of Wuban's modernity. Rather than viewing infrastructure as a vehicle of unidirectional technological circulation, this paper argues for understanding translation as an active process of embedding translational paradigms within situated local contexts. The water tower emerges not merely as an outpost of British engineering, but as a translated infrastructure: an assemblage of global knowledge, local labor, symbolic encoding, and socio-political negotiation.

1. INTRODUCTION

Cities are increasingly conceptualized as assemblages in a constant state of dynamic becoming.¹ They serve as hubs for the circulation of transnational technoscience² within which heterogeneous elements continuously reshape urban space through convergence and reconfiguration. Infrastructure, the pervasive large-scale systems and architectural typologies in cities, has traditionally been viewed as a black box³ or the materialization of a singular integrated ideal.⁴ However, it is now more frequently understood as a system constituted through *bricolage* and negotiation,⁵ and as a relational concept.⁶ The ubiquitous transnational mobility of technoscience, comprising technology, knowledge, human actors, and capital, within twentieth-century infrastructural development renders the concept of *translation*⁷ essential for deciphering the realization of the projects. Through the process, diverse technoscience encounters one another, reconfiguring both the morphology and the historical narratives of the city.

Transnational urban practices were long reduced to a process of technological diffusion, a linear replication of Western prototypes in the non-Western world, where local built environments were dismissed as “merely lesser forms of Western modernism.”⁸ Such exports were often disguised as a civilizing mission or benevolent intervention,⁹ implicitly asserting the absolute superiority of Western technoscience. Post-colonial scholars confronted the complexities of this spatial displacement by linking translation to imperialism.¹⁰ The shift captured the mutation of architectural forms during translation,¹¹ the subaltern's resistance and subversion

against spatial hegemony,¹² and the profound identity anxiety of local elites when introducing transnational technoscience.¹³ However, existing post-colonial narratives remain largely entrapped within a binary opposition of West vs non-West and domination vs resistance. The highly confrontational premise relegates the more nuanced grey areas and the circulation of technoscience¹⁴ to the margins of discourse. Situated within a broader global history, the translation of transnational technical practices reveals a much more pluralistic trajectory. As suggested by concepts such as local compromise of technology,¹⁵ global assemblages,¹⁶ and the digestive metaphor,¹⁷ transnational technology actively participates in the generation of a hybrid, open-ended urban space.

Following the discourse of architectural translation, the paper focuses on the mutation and persistence of technoscience during its material realization. It specifically seeks to recover the local agency. Despite being the actual builders of these infrastructures, they remain chronically obscured by official texts and engineering blueprints. Reintegrating this invisible cohort into the analytical framework of transnational encounters not only illuminates the pluralistic trajectory of spatial translation. It exposes the true foundational layer of contemporary transnational spatial practices: a micro-history rooted in mundane everyday practices, deliberately detached from any grand narrative.

To focus on the dynamic process of translation, this study introduces Assemblage theory, operationalizing it as the reconfiguration of heterogeneous elements such as technology, materials, capital, and labor. Drawing on Science and Technology Studies (STS) and Actor-Network Theory (ANT), this paper establishes its analytical framework. Specifically, STS helps map the hybridity and fluidity of the Zhang Meizhi Alley water tower, while ANT reveals the micro-mechanisms behind its production, negotiation, and maintenance. Furthermore, using thick description,¹⁸ the paper compares visual evidence of the British prototype and the Hankou entity to trace how translation unfolds as a process of spatial reconfiguration. By uncovering archival silences, the paper aims to concretize the material compromises and social negotiations at the micro-level of construction. This approach gives a voice to the local building networks that have long been marginalized in official narratives.

Unlike colonies or treaty ports under informal imperialism, modern Hankou retained strong local agency. Under Zhang Zhidong (1837–1909), the late Qing government rejected foreign waterworks proposals, backed merchants and selectively absorbed transnational technoscience. The Zhang Meizhi Alley water tower provides the case. Translation here proceeded through pragmatic collaboration. Technoscience moved through sustained negotiation between the British engineer and local networks. Engineering became a site of exchange where transnational knowledge met local materials. Local agency reshaped transnational spatial

practice. Defining translation as the assemblage of heterogeneous elements highlights the invisible actors, clarifies historical multiplicity and foregrounds contemporary transnational spatial complexity.

2. CONTINUING NEGOTIATION: THE NATURE OF MODERN WATER SUPPLY SYSTEM

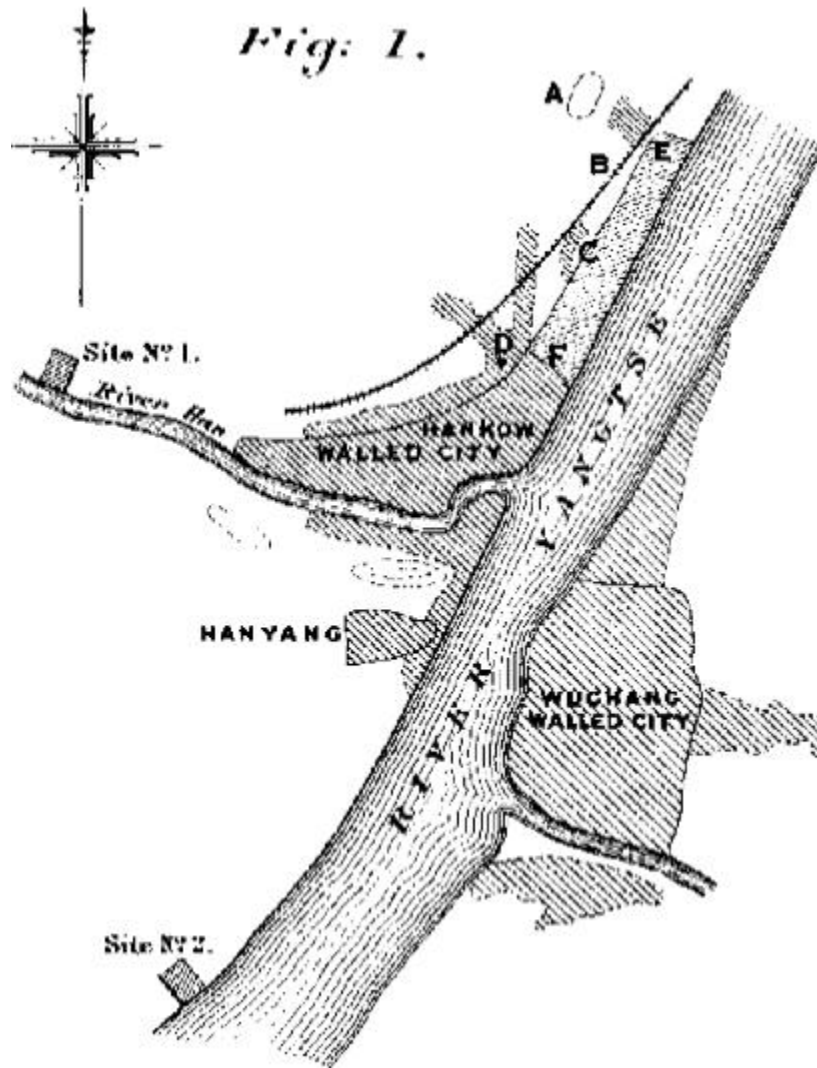


Figure 1: The map of Wuhan and site of the Waterworks (Source: © Institution of Civil Engineers Library and Archive).

Since 1861, the concessions in Hankou (area F-E in Figure 1) had relied on walls and electrified grids to physically segregate the Chinese district,¹⁹ attempting an invisible colonization of local space through the monopoly of infrastructural networks. Facing transnational waterworks bids from British, French, and Japanese merchants,²⁰ Governor-General Zhang Zhidong categorically rejected them, treating public utilities

as the absolute baseline of sovereignty,²¹ while simultaneously clearing out comprador applications that concealed foreign capital.²² This uncompromising defense successfully obstructed the imposition of technological prototypes, establishing negotiation as the essential political premise for the local translation of transnational technoscience. As the core architect of Hubei's modernization,²³ Zhang had already forged a mature transnational collaborative mechanism during early state-run industrial projects: European engineers directed the technical blueprints, while local contractors and artisans executed the construction.²⁴ The inception of the Hankou Waterworks was the institutionalized continuation of this model. Zhang's poetic verse, "Ascending the heights, one feels Europe and Asia are not so far apart,"²⁵ revealed his spatial aspiration to dissolve geopolitical boundaries, while his ambition that "Great constructions often begin from the Yangtze and Han rivers"²⁶ provided the political motivation for translating the water system. Consequently, Zhang's approval of Song Weichen's water franchise effectively balanced sovereignty boundaries with urban development. Hailing from rural Ningbo, Song was not a treaty port comprador, but a representative of pure local commercial capital. Prior to this application, Song had successfully dismantled the Japanese match monopoly in Hankou through his local match factory.²⁷ This market-based counterstrategy served as a distinct "weapon of the weak"²⁸ within a semi-colonial context. This victory instilled confidence in Zhang, who championed "striving for self-reliance, resisting foreign humiliation; and retrieving economic rights,"²⁹ to entrust Song with leading the Jiji Water and Electricity Company. A high degree of political mutual trust was thus achieved. The state-merchant alliance laid the power foundation for the subsequent local assemblage of transnational technology.

In 1905, British engineer Richard St George Moore (1858–1926) accepted Zhang Zhidong's invitation to advise on the establishment of a water system in Wuhan (Figure 1).³⁰ Born in Chester, Moore had received training in shipbuilding and civil engineering in Britain and Germany.³¹ He possessed expertise in water and municipal sanitation, having designed public works such as the West Hampshire Waterworks and the Gosport drainage system,³² as well as the water tower in Southall—the prototype for the Zhangmeizhi Alley water tower.³³ Based on his engineering experience, he was later commissioned to direct the design of the Hankou waterworks, electric plant, and water tower,³⁴ serving as the definitive provider of the British prototype in this process of transnational technological translation.

The surveying of Hankou Waterworks immediately exposed the epistemological dilemma of transnational practice. Confronting a severe absence of systematic data and measurement instruments, Moore was unable to conduct standard scientific assessments. He was compelled to forcefully assimilate informal local knowledge into his technical calculations. Establishing the Han River as the primary water source relied entirely on the everyday observations of nearby monks, a powder factory manager, and riverbank residents.³⁵ Through pragmatic translation, foreign technoscience converted grassroots experience into legitimate

engineering metrics, thereby initiating the construction of the modern water system. This dilemma was further magnified during the geological exploration. Facing a deep, unrecorded water-bearing sand bed, Moore had to initiate a local assemblage of knowledge. He deployed his understanding of Hampshire's soil as a cross-geographical reference. Practically, lacking official exploratory records, he was forced to stitch together diverse and fragmented informal data: the depth metrics of a French concession well, the abandoned surveys of an ice factory, and local vernacular oral histories regarding the old Han Riverbed. The engineering practice encountered intense natural material agency. Moore observed that the subsoil experienced autonomous seasonal subsidence concurrent with the autumnal drop in the Han River's water level, independent of building loads.³⁶ This complex geographical idiosyncrasy which directly caused cracks in early structures, compelled the Western engineering prototype to abandon universal static assumptions. The site of the waterworks (site No.1 in Figure 1) was ultimately anchored in a cognitive assemblage forged through mutual compromise among transnational memory, fragmented data, and the local natural environment.

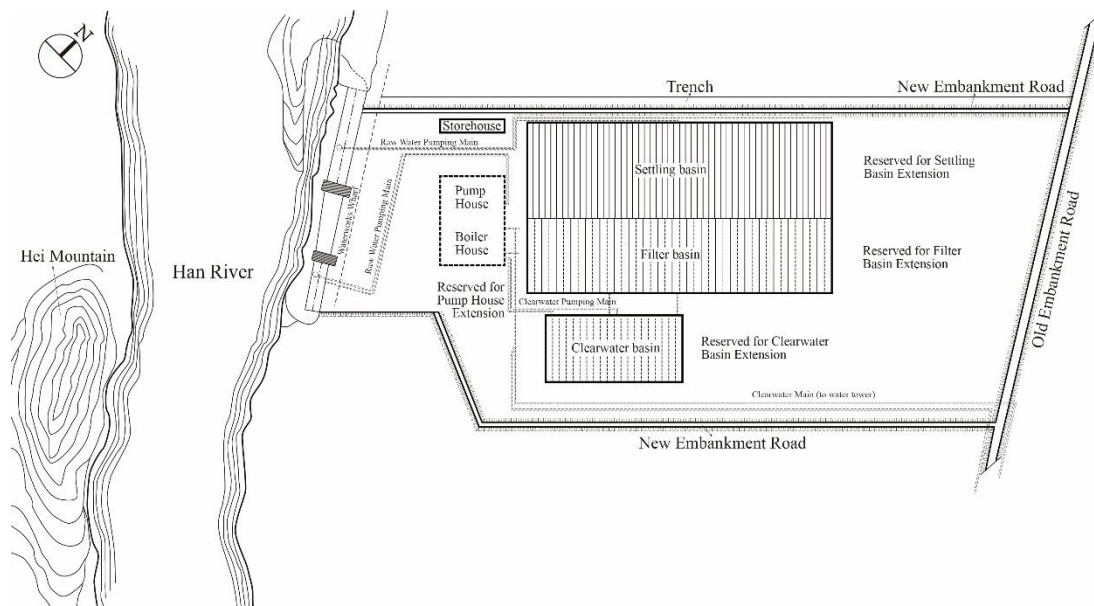


Figure 2: The original masterplan of the Waterworks (Source: Redrawn by author based on a drawing from the © Institution of Civil Engineers Library and Archive).

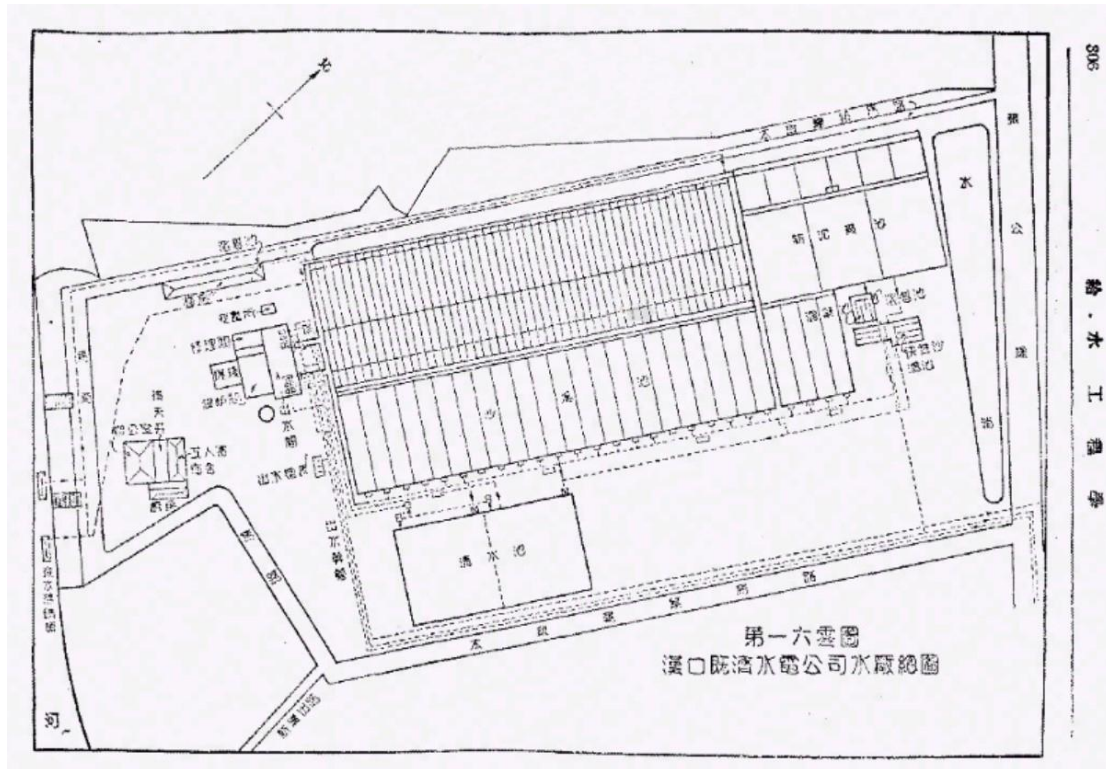


Figure 3: The masterplan of the expanded Hankou Waterworks (Source: “General Layout of the Jiji Water and Electric Company,” in *Jishui Gongchengxue* [Water Supply Engineering] (Shanghai: The Commercial Press, 1937), 327. Available from: Quanguo Baokan Suoyin (CNBKSY)).

The material grounding of the blueprint was equally subjected to bureaucratic delays and spatial adulteration. In Moore’s design, the water tower (at location D in Figure 1) and main pipelines were to occupy state-owned land along the reconstructed Houcheng Road, following the old city wall.³⁷ This involved the concession of core property rights, plunging the approval process into a protracted suspension.³⁸ By early 1908, with Zhang Zhidong’s departure from Hankou, the tower project was entirely frozen. The urgent pressing by Moore and the anxiety of Song Weichen³⁹ proved that the translation of transnational technology is never linear; it must pay a heavy toll of time within the bureaucratic structure. Once past the institutional barriers, drastic rewriting of the drawings by local forces became inevitable. Moore’s conservative daily capacity estimate of 2.5 million gallons was forcibly doubled to 5 million gallons by the Jiji Company, driven by commercial ambition.⁴⁰ This surge in capacity directly rewrote the spatial schema; the open space reserved by Moore (Figure 2) was prematurely consumed by subsequent settling basins and rapid sand filters (Figure 3). More subtle revisions occurred on the periphery of the industrial core. Beyond the standardized factory buildings, the Jiji Company autonomously appended kitchens, worker dormitories, and two Chinese gardens. The back garden even utilized a natural pond to construct the Canglang Pavilion and a lotus landscape.⁴¹ Through this functional

grafting and aesthetic elaboration, the originally isolated Western industrial specimen was thoroughly translated, generating an assemblage that intricately stitched together machine production and local aesthetics.

Through an extremely flexible interest suturing and power displacement, the local network successfully dismantled the failure predicted by colonial discourse. It forced foreign powers to downgrade from absolute spatial dominators to technical shareholders constrained by contracts, ultimately ensuring that the modern urban lifeline took root within Hankou's intricate geographical and political fissures. Facing layered obstacles of capital, technology, and urban space, the Jiji Company adopted a highly elastic and expedient survival strategy. Japanese Consul Midzuno Kokichi (1873 – 1914) had examined the waterworks through a colonial lens. He asserted that Hankou's winding and narrow streets in the Chinese district would constitute a fatal spatial impediment, claiming that without preventing the inherent Chinese mismanagement and waste, the success of the waterworks was highly doubtful.⁴² This discursive oppression, tinged with a civilizing mission, presupposed a linear illusion that modern infrastructure could only be realized by eliminating all friction. However, the substantial grounding of infrastructure frequently relies on the flexibility in chaos. The construction evolved into a complex translation process pragmatically assembling heterogeneous elements. To deal with a massive funding gap, the company compromised by absorbing Japanese loans along with their attached equipment and engineering bindings.⁴³ Simultaneously, they tactically leveraged the sovereignty barrier of the Chinese district, forcing the municipal councils of various concessions—who sought to infiltrate local space—to abandon their ambitions of independent plants, retreating to 50-year pipeline contracts to extract water profits.⁴⁴ Compromised capital absorption served as a mere tactical expediency for the local network. In 1922, the Jiji Company liquidated the entirety of its Japanese loans using investments from the local Chuxing Company, effectively dismantling the external financial entanglements of the infrastructure.⁴⁵ Leveraging the macro-historical turning point of the gradual retrocession of concession jurisdictions in Hankou, local merchants successfully reclaimed this transnational technological network.

In other Chinese treaty ports, infrastructural projects of similar scale frequently fell into either foreign monopoly or traditional state-run models. The Zhang Meizhi Alley Waterworks, however, emerged as a purely commercial enterprise funded by local merchants under official franchise.⁴⁶ The unique collaborative foundation established by Zhang Zhidong's defense and Song Weichen's operations tore open a line of flight within the imperial engineering paradigm. Transnational technology and capital were downgraded to contracted technical shareholders; although deeply involved in building the city's lifelines, they failed to translate into spatial hegemony overriding local authority. Instead, they were compulsorily integrated into a power framework defined by Chinese subjects. Here, multiple forces collaboratively forged an infrastructural assemblage characterized by both mutual check and profit-sharing. The water tower and its underground pipeline network stand as the definitive material manifesto of this spatial translation and compromise.

3. MATERIAL TRANSLATION: FROM SOUTHall TO ZHANG MEIZHI ALLEY



Fig. 4: Southall Water Tower (Source: Ealing Council, Southall Historical Walk Guide).

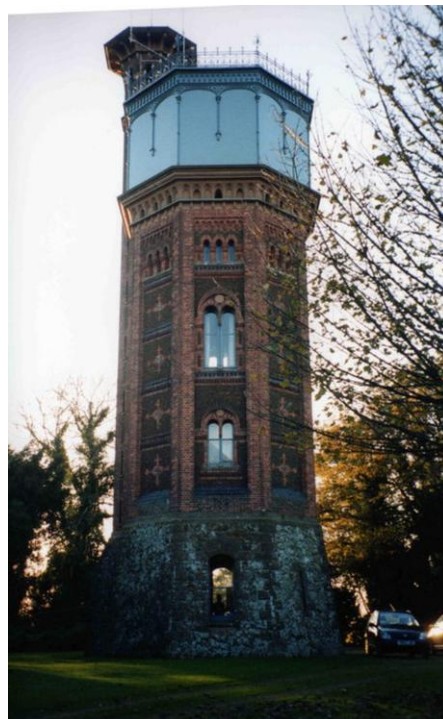


Figure 5: The Appleton Water Tower designed by Robert Rawlinson, 1873 (Source: Photograph by Peter Barr, licensed under CC BY-SA 2.0. (Via Wikimedia Commons / Geograph.org.uk)).

The material formation of the Hankou water tower began with an infrastructural paradigm attempting to cross geographical boundaries. During the initial design phase, Moore used the Southall water tower (Figure 4),⁴⁷ built in London in 1895, as a template. Known as “Southall Castle,”⁴⁸ the morphological origins of this building can be traced back to Neo Byzantine municipal architecture represented by the Appleton water tower (Figure 5).⁴⁹ They share a spatial paradigm: a stone base supports an octagonal brick main tower, the massive top water tank is distinguished from the tower body by its material and visual language, and a projecting stair tower on one side extends upward into a panoramic observation deck. Despite omitting decorative vocabularies such as the intricate cross brickwork and umbrella roof found in the Appleton prototype, this purified geometric schema still carries the core logic of British infrastructure. The original blueprint acted as an “immutable mobile.”⁵⁰ Carrying it across the ocean, Moore attempted to transplant the engineering rationality of the British Empire intact into the short clay earth of Hankou.



Figure 6: Zhangmeizhi Alley Water Tower (Source: © Institution of Civil Engineers. O.C/3853 – Hankow Waterworks, Richard St George Moore, 1909. Reproduced with permission).

In the context of modern Hankou, the meaning of translation must be revised and extended: The construction of the Zhang Meizhi Alley water tower was a continuous reconfiguration of heterogeneous elements driven by local forces with distinct power intentions.⁵¹ This power of rewriting⁵² manifested directly in the forceful takeover of the technology implementation process by local capital. Moore initially attempted to recruit European contractors in Shanghai⁵³ to maintain the consistency of the British engineering paradigm. However, the Chinese shareholders adamantly rejected any substantive intervention by European.⁵⁴ The Jiji Company established an obligatory passage point:⁵⁵ transnational technology was handed over to the

purely local Guang Rong Xing construction firm for translation.⁵⁶ Established in Hubei, the Guang Rong Xing construction firm constructed major buildings such as the Guangming Grand Theatre,⁵⁷ with the Zhang Meizhi Alley water (Figure 6) tower serving as its masterpiece.

As the executor of this translation, upon assuming construction rights, Guang Rong Xing fully took over the operational and interpretive control of the blueprints. At the construction site, the standardized British engineering paradigm was rapidly deconstructed and replaced by a localized sociotechnical assemblage. Modern machinery such as wheelbarrows did not exist on the site, and the transportation of tens of thousands of tons of materials relied entirely on the traditional bodily techniques of Chinese labourers using bamboo poles and rattan baskets.⁵⁸ The daily wage system was replaced by the piece rate system mastered by local craftsmen,⁵⁹ thereby forcibly anchoring Moore's accustomed engineering contracting process within Chinese construction habitus. Local foremen completed precise onsite setting out directly from the blueprints. This exceptionally high capacity for technical translation rendered Moore's careful onsite inspections entirely unnecessary.⁶⁰ Until his appointment as Engineer in Chief of the Hupeh section of the Hankow Canton Railway, Moore was the sole European on the water tower construction site.⁶¹

Local craftsmen engraved their hidden agency into the construction process. By carefully comparing the differences between the Southall water tower and the Zhang Meizhi Alley water tower, a profound spatial bricolage⁶² becomes vividly apparent. The Southall water tower prototype is simple in form and highly uniform in tone. Its ground floor base is constructed entirely of red brick, and the stair tower features staggered narrow vertical windows (Figure 4). In its Hankou version, this uniformity is completely disrupted. Likely driven by practical considerations of water pressure and settlement, the Hankou water tower adds two floors compared to the prototype. Rising 35 feet higher than the original design⁶³, it shapes a slenderer overall silhouette. Its base abandons the uniform red brick of the original, replaced by rough local white granite (*mashi*).⁶⁴ The facade also undergoes deep reconfiguration. The main tower is homogenized into a layout of double windows on each side from top to bottom. The windows of the stair tower are aligned with the main tower, topped with uniform arches resembling the Chinese character ji. However, the insertion of circular windows in the middle section recalibrates the vertical visual rhythm of the building. The modification most characteristic of bricolage occurs in the upper architectural details. The lengthy fringe decoration made of stacked bricks at the top of the Southall main tower is significantly simplified and shortened in Hankou. This expedient measure aimed at saving brick usage bluntly exposes the material calculations at the construction site. On the exterior wall of the sixth floor where the water tank is located, three newly added horizontal granite decorative lines serve as a material suggestion of the internal spatial stratification. Furthermore, the parapet at the top of the tower discards the fortress style battlements of Southall. Craftsmen rewrote it into an outline resembling the Chinese character ji, forming an aesthetic echo with the window arches below.

Spatial bricolage extended beyond the visual facade to penetrate the material skeleton of the infrastructure. Key structural components such as the tank support beams produced by the Frodingham Iron & Steel Company and the Worthington clear water pump were imported from Britain. Other components including cast iron pipes, steel tank plates, and brackets were procured from the Hanyang Iron Works. The foundation utilized a local composite of lime, clay, and sand (*san-be tu*). The imported British steel joists arrived unfinished and were reassembled by workers alongside local corner posts to form an umbrella framework.⁶⁵ This highly hybridized material entity demonstrates that in the transnational construction of modern Hankou, infrastructure was not transplanted entirely as a black box but was profoundly reconstructed under the power logic of translation as rewriting.⁶⁶

Moore acknowledged in his records that this water tower with its prominent local traces was even more satisfactory in its execution than its Southall prototype, demonstrating extreme accuracy.⁶⁷ This recognition marks the profound integration of the transnational technical authority and the local network. Trust was earned by Chinese craftsmen through their exquisite craftsmanship during continuous material negotiation and contestation. Through this complex socio-technical assemblage, Chinese craftsmen seamlessly stitched the British steel skeleton into the local material corpus and aesthetic habitus, thereby shaping the materialization process of this modern infrastructure.

4. SYMBOLIC APPROPRIATION: THE URBAN PALIMPSEST OF THE WATER TOWER

YEAR	EVENT
1907	Richard St. George Moore arrived Hankou.
1908	Construction of the Hankou Water Tower commenced.
1909	Construction of the Water Tower was completed.
1931	The Water Tower fell into disuse.
1953	A new 30-horsepower water pump was installed, converting the tower into a pressure-boosting station.
1981	The tower ceased its pressure-boosting water supply function.
1985	The internal water tank was dismantled.
1987	The Water Tower was repurposed into a shopping center.
1993	Officially recognized as a “Class-I Preserved Excellent Historical Building of Wuhan” by the municipal government.
1998	Upgraded to a “Wuhan Municipal Cultural Relic Protection Site”.
1999	The sightseeing hall on the roof (8th floor) and the observation post above the clock tower were removed.
2006	Elevated to the status of a “Major Historical and Cultural Site Protected at the National Level”.
2015	The Wuhan Municipal Government resolved to transform the site into the “Hankou Water Tower Museum”. All commercial tenants vacated upon lease expiration.
2016	Renovation completed; the first floor opened with the historical photo exhibition “Centennial Old Street: The Backbone of Hankou”.
2018	Listed in the first batch of the “China Industrial Heritage Protection List” (No. 83).

Table 1: Historical Timeline of the Zhang Meizhi Alley Water Tower (Source: Compiled from R. S. G. Moore, “Hankow Waterworks”. Institution of Civil Engineers, 1909, p. 10; R. Zhang, “Hankou Shuita Da Shuigui de Lishi Jiyou”. Chengzhen Gongshui, 2019, p. 15).

“The image [of the city] originates only as part from a physical reality and is based primarily on well worn prejudices, desires, and memories.”⁶⁸ The localization of the water tower was precisely a prolonged process from material implantation to the reconfiguration of meaning. As a massive and towering intrusion, the water tower initially triggered severe cognitive anxiety. Chinese cities in the early twentieth century were battlefields of cultural conflict, where imperial technology clashed fiercely with local belief systems and economic exclusion.⁶⁹ Tap water directly threatened the income of water carriers, triggering their resistance of refusing to use water tokens (*shuichou*), accompanied by rumors that machine water was poisonous.⁷⁰ Informal discourse intertwined with folk beliefs further claimed that the tower not only destroyed *feng shui* but also required the sacrifice of ten people born at specific astrological times to stand upright. Consequently, many families fled in panic.⁷¹ The rumors reflected the ontological fear of premodern society toward modern infrastructure. Facing the panic, the Jiji Water and Electricity Company not only emphasized its hygiene and fire prevention value through leaflets;⁷² Song Weichen also executed a highly powerful bodily performance. One day, he resolutely led foremen with a glass, drew water from a street tap in public, and drank several glasses in succession. The audience was convinced, and the rumors collapsed on their own.⁷³ Through this public ritual, tap water, as an unfamiliar technoscience, was substantively translated into the welfare of citizens, establishing its own legitimacy.

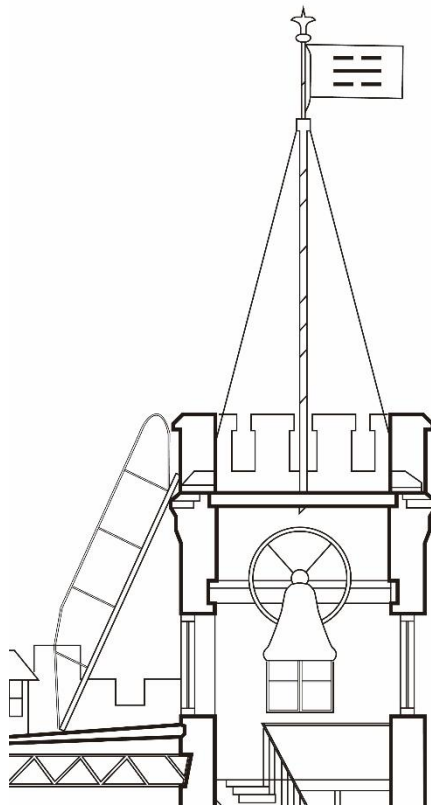


Figure 7: *Kan* trigram flag (Source: Redrawn by author based on: Zhang, R.; Ye, F., “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower]”, *Chengzhen Gongshui [Urban Water Supply]* 2016, 8.)

Having overcome the initial ontological fear, the local network began to co-opt the meaning of the water tower through symbolic appropriation. While Moore viewed the octagonal tower body as a mere geometric convention, official reports and civic visual readings rapidly interpreted it as the traditional Chinese *bagua*.⁷⁴ The cultural imagination was further embodied in the *Kan* trigram flag (Figure 7) suspended atop the tower. A longitudinal section drawing reveals a 6.10-meter flagpole erected at the pinnacle of the bell tower, flying a banner adorned with the *Kan* trigram pattern ☵.⁷⁵ Symbolizing water, the trigram encapsulated the collective desire to suppress urban fires using the newly introduced tap water. Through the highly visible symbolic display, the infrastructure ceased to be a cold and suspicious foreign pumping station. Instead, it was transformed into a material totem guarding the city and eliminating fire hazards.



Figure 8: Tianyi Temple (Source: Zhang, Rengang. “Hankou Shuita Shiliao Bianxi—Hankoubao yu Houcheng Malu ji Zhang Meizhi Xiang Manyi [Textual Analysis of Hankou Water Tower Archives: Recollections of Hankou Fort, Houcheng Road, and Zhang Meizhi Alley].” *Chengzhen Gongshui [Urban Water Supply]*, no. 04 (2023): 14.).

The symbolic appropriation was further manifested in the functional dispossession of the adjacent traditional landmark Tianyi Temple (Figure 8). Built in 1899, Tianyi Temple derived its name from ancient Chinese cosmology concerning water generation, aiming to suppress the frequent urban fires in Hankou.⁷⁶ The pavilion once towered majestically over its surroundings⁷⁷ and, alongside the Dongyue Palace and Guandi Temple, constituted the spiritual center of deity worship for pre-modern Hankou citizens.⁷⁸ As the new water tower comprehensively usurped its position in both physical height and cultural psychology, Tianyi Temple gradually fell into decay with rotting pillars and sealed doors.⁷⁹ The functional transfer between Tianyi Temple and the water tower marked a profound transition in the firefighting logic of Hankou, shifting from a pre-

modern reliance on supernatural resonance to a negotiated modernity driven by transnational technology and civic collaboration.



Figure 9: Fire Alarm Zoning Map of Hankou (Source: Annotated on the *Complete Map of Hankou* (compiled by Hankou Nichinichi Shinpō, published by Okagawa Kōshichirō, 1912); data based on Zhang, R.; Ye, F., “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower]”, *Chengzhen Gongshui [Urban Water Supply]*, 2016, 15-16.).

At the blueprint stage, the water tower already incorporated fire alarm functions, representing an institutionalized modern return to traditional urban defense logic. Compared to the Southall prototype by Moore which lacked an alarm bell, the installation of a bell in the Hankou tower was essentially a modern restoration of Chinese urban defense strategies. Traditional Chinese towns often utilized high buildings for fire observation.⁸⁰ For instance, during a major fire in 1810, the Governor-General climbed the Yellow Crane Tower to observe the situation all night.⁸¹ The new water tower not only inherited this spatial tactic but also achieved a multidimensional stitching of pre-modern monitoring and modern technology. A square tower rising 11 feet above the main body was equipped with a pump room telephone and flag or lamp signals, establishing a monitoring perspective over the entire city.⁸² In the acoustic dimension, a giant alarm bell weighing over 2200 pounds⁸³ at the top of the tower ended the primitive state of street-level gong alarms.⁸⁴ Patrol personnel issued instructions to the nine defense districts of Hankou through a preset number of strikes, integrating the community into a standardized acoustic response network (Figure 9).⁸⁵ In the transition from traditional volunteer firefighting to modern systems, the Jiji Company not only provided water and alarms but also purchased fire engines to participate directly in rescue operations.⁸⁶ This created close tactical synergy with local fire associations and auxiliary bell towers established by chambers of commerce.⁸⁷ Through the comprehensive replacement of gongs with bells, old observation with tower monitoring, and manual firefighting with piped water systems, the tower was successfully assembled into a modern urban defense machine combining altitude observation, telecommunications, and social mobilization.



Figure 10: The Water Tower in 1987. (Source: Yin Zhang, “Hankou Shuita de Bainian Bianqian,” [A Century of Changes in the Hankou Water Tower]. *Dang'an Jiyi* [Archives Memory], no. 4 (2021): 31.).



Figure 11: Zhangmeizhi Lane Water Tower (Source: Photograph by the author, January 2025).

The water tower underwent another severe material rewriting after its water supply mission ended. In 1986, under the principle of “maintaining the exterior while reorganizing the interior”, the original wooden floors were replaced with reinforced concrete. Engineers added umbrella-shaped support beams to the sixth floor to divide the space and installed an observation hall on the original roof top.⁸⁸ Moving from a water container to a commercial complex (Figure 10), the vertical section of the tower was precisely allocated as a set of consumerist spatial folds. The first to fourth floors became commercial halls while the fifth floor served as business meeting rooms. The water tank level, once echoing with the sound of water, was completely dissolved into a dance hall and bar.⁸⁹ In 2016, following the urban renewal of Zhongshan Avenue, the water tower (Figure 11) underwent a heritage transformation. The red brick exterior was restored to its original color with added floodlighting, and the interior was set up with historical displays. At this point, the water tower, the infrastructure node, having witnessed the late Qing, Republican, and People’s Republic of China, finally saw its octagonal brick shell recede into a pure visual symbol. It exists today as a multiple-layered urban palimpsest,⁹⁰ melting into the daily consumption landscape of Hankou.

5. CONCLUSION

The inherent local agency and spatial rewriting processes embedded within structures like the Zhang Meizhi Alley water tower, situated beyond the concession boundaries in treaty ports, often remain marginalized in grand historical narratives. The paper offers a decentered theoretical perspective and methodology to illuminate the hidden and multifaceted nature of translation regarding transnational technology. Authentic translation unfolds not merely upon blueprints and negotiation tables but lies concealed within the routes of transnational freighters, the bamboo carrying poles at construction sites, and the resounding alarm bells across urban alleyways. Viewed through this decentered lens, the materialization of the water tower emerged not as a passive consequence of foreign technology circulation but as the result of active mediation across various local social strata. Confronting resource scarcity and technical barriers, individuals ranging from officials and merchants to craftsmen demonstrated profound subjectivity. By safeguarding the sovereignty of public utilities, local elites successfully confined transnational capital to the role of technical collaborators reliant on localized negotiation. At the construction site, local artisans utilized bricolage to forcefully stitch vernacular materials and masonry habitus into the engineering schematics of transnational engineers. Meanwhile, on an urban scale, citizens thoroughly usurped the cultural interpretative power and risk mobilization functions of the water tower through symbolic endowment and the operation of the alarm bell system. Through continuous negotiation among multiple forces, the water tower was ultimately configured into a socio-technical assemblage.⁹¹

The evolutionary trajectory of the water tower profoundly responds to the tension between transnational technology and the local context. Viewing the local merely as a fixed and fragile object to be preserved against external shocks often reduces architecture to lifeless specimens detached from reality. However, the history of the water tower demonstrates that local roots must be understood in plural and fluid forms. It represents a dynamic transformative capacity capable of embracing technology while remaining grounded in indigenous survival needs. The spatial subjectivity of the Wuhan populace was established precisely through this relentless negotiation and repairing, successfully coopting foreign technoscience into a localized modern system of “disaster mitigation and public hygiene.”⁹²

The very construction wisdom deeply rooted in the local context endowed the water tower with formidable vitality across eras. A century after the initial blueprint descended, the building transitioned from a water supply hub and fire watchtower to a civic consumption space and eventually to a contemporary heritage site, consistently maintaining robust open adaptability. The highly hybridized material shell of the water tower permanently chronicles the struggle and survival of modern Chinese cities amidst transformation. Such spatial practices offer compelling insights for the contemporary Global South. Even on the weaker end of technology importation, local societies can still defend their dignity as masters of the city through everyday appropriation and rewriting.

NOTES AND REFERENCES

1. McFarlane, “Assemblage and Critical Urbanism”; Fariás and Bender, *Urban Assemblages: How Actor-Network Theory Changes Urban Studies*.
2. See: Latour, *Science in Action : How to Follow Scientists and Engineers through Society* (Harvard University Press, 1987). Latour theorizes “technoscience” to consolidate science, technology, and society (STS) into a unified, inseparable entity. This conceptual move reflects a philosophy of fusion that dissolves traditional dualisms such as “inner/outer” and “nature/society.”
3. Latour, *Science in Action : How to Follow Scientists and Engineers through Society* (Harvard University Press, 1987).
4. Graham and Marvin, *Splintering Urbanism : Networked Infrastructures, Technological Mobilities and the Urban Condition*, 43.
5. Larkin, “The Politics and Poetics of Infrastructure.”
6. Star and Ruhleder, “Steps towards an Ecology of Infrastructure: Complex Problems in Design and Access for Large-Scale Collaborative Systems.”
7. Akcan, *Architecture in Translation: Germany, Turkey, and the Modern House*, 3.

8. Basalla, "The Spread of Western Science"; Duanfang Lu, *Third World Modernism: Architecture, Development and Identity*, 15.
9. Zantop, *Colonial Fantasies: Conquest, Family, and Nation in Precolonial Germany, 1770-1870*.
10. Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society under Early Spanish Rule*; Cheyfitz, *The Poetics of Imperialism: Translation and Colonization from The Tempest to Tarzan*.
11. King, *Urbanism, Colonialism and the World Economy: Cultural and Spatial Foundations of the World Urban System*; Chang, *A Genealogy of Tropical Architecture*.
12. Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society under Early Spanish Rule*; Yeoh, *Contesting Space: Power Relations and the Urban Built Environment in Colonial Singapore*; Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance*.
13. Akcan, *Architecture in Translation: Germany, Turkey, and the Modern House*.
14. Bickers, *Britain in China: Community, Culture and Colonialism 1900-1949*; Lai et al., "Modern Chinese Architecture and the Formation of a New Nation State"; Xu et al., "Reflections on the Three-Dimensional Framework of Modern Chinese Architectural History"; Liu, "Zhiminzhuyi yu Zhongguo Jindai Jianzhushi Yanjiu de Xin Fanshi [Colonialism and the New Paradigm of Modern Chinese Architectural History Research]"; Yishi Liu, *Introduction to the History of Modern Architecture in China*.
15. Wright, *The Politics of Design in French Colonial Urbanism*.
16. Ong and Collier, *Global Assemblages--Technology, Politics, and Ethics as Anthropological Problems*.
17. Vieira, "Liberating Calibans: Readings of Antropofagia and Haroldo De Campos' Poetics of Transcreation," 114–15.
18. Clifford Geertz, "Thick Description: Toward an Interpretive Theory of Culture."
19. Zhang, "Place, Memory, and Identity: Constructing the Hankow Concession," 54.
20. "Jiangnan Zhuguang [Jewels of the Jiangnan Region]."
21. Chinese People's Political Consultative Conference, Wuhan Municipal Committee, Literature and History Research Committee, *Wuhan Wenshi Ziliao (Xuanji) Disanji [Wuhan Historical Materials, Selected Edition Vol. 3]*, 182.
22. Pi et al., *Wuhan Jindai (Xinhai Geming Qian) Jingji Shiliao [Historical Materials on the Modern Economy of Wuhan Before the 1911 Revolution]*, 199–202.
23. Su, *Zhongguo Xiandaihua de Quyuan Yanjiu—Hubei Sheng 1860–1916 [Regional Studies of China's Modernization—Hubei Province 1860–1916]*.
24. For example: the Hanyang Ironworks was designed by Henry Hobson, and the Hubei Weaving Factory was built by British J. Dickenson in cooperation with Guangxiangli Construction Company. See: Wuhan Difangzhi Bianzuan Weiyuanhui [Wuhan Local Chronicles Compilation Committee], *Wuhan Shizhi Renwuzhi [Wuhan Municipal Gazetteer: Biographies]*, 1084.
25. Xu, *Lao Wuhan Congtan [Discussions on Old Wuhan]*, 179.
26. Xu, *Lao Wuhan Congtan [Discussions on Old Wuhan]*, 179.
27. Zhong et al., "Hankou Shuita [Hankou Water Tower]," 8–9.
28. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance*.

29. Institute of Urban Studies, Jiangnan University and Wuhan Municipal Museum, *Tushuo Wuhan Chengshi Shi* [Illustrated History of Wuhan City], 164.
30. Richard St George Moore, “Hankow Waterworks,” 1.
31. Grace’s Guide To British Industrial History, “Richard St. George Moore.”
32. Grace’s Guide To British Industrial History, “Richard St. George Moore.”
33. Ohlsson, “Eber’s Water Towers: Great Britain.”
34. Zhang, “Hankou Shuita de Shiyong Shouming yu Yingguo Laihan—Wuhan Gongshui Shishang Yige Daijie zhi Mi [The Service Life of the Hankou Water Tower and the Letter from Britain—An Unresolved Mystery in Wuhan’s Water Supply History],” 38.
35. Richard St George Moore, “Hankow Waterworks,” 5–6.
36. Richard St George Moore, “Hankow Waterworks,” 10.
37. “Hankou.”
38. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 9.
39. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 8–9.
40. Richard St George Moore, “Hankow Waterworks,” 9.
41. “Xiuli Shuichang Yiqie Fushu Shebei [Repairing All Ancillary Equipment of the Waterworks],” 241.
42. Kōkichi Mizuno, *Hankō: Affairs in Central China*, 692.
43. Shenbao [The Shanghai News]; Hubei Provincial Local Chronicles Compilation Committee, *Hubei Sheng Zhi: Dashiji* [Hubei Provincial Gazetteer: Chronology of Major Events], 131–32.
44. Weiyuanhui, *Hankou Zujie Zhi* [Gazetteer of the Hankou Concessions], 376.
45. He and Liang, “Hankou Shuidian Shiye de Youlai He Yanbian [The Origin and Evolution of Hankou’s Water and Electricity Industry],” 184.
46. Richard St George Moore, “Hankow Waterworks,” 24.
47. Moore, “Hankow Waterworks,” 217.
48. Ohlsson, “Eber’s Water Towers: Great Britain.”
49. The Landmark Trust, “Appleton Water Tower Explorer Pack.”
50. Latour, *Science in Action : How to Follow Scientists and Engineers through Society* (Harvard University Press, 1987).
51. 51 Latour, *Science in Action : How to Follow Scientists and Engineers through Society* (Harvard University Press, 1987).
52. Lefevere, *Translation, Rewriting, and the Manipulation of Literary Fame*, 39.
53. Moore, “Hankow Waterworks.”
54. Moore, “Hankow Waterworks.”
55. Callon, “Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay,” 196.

56. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 10.
57. See: Wang, “Hankou Lao Yingyuan [Old Cinemas in Hankou],” 40.
58. Moore, “Hankow Waterworks (Including Plate at Back of Volume),” 306.
59. Moore, “Hankow Waterworks (Including Plate at Back of Volume),” 306.
60. Moore, “Hankow Waterworks (Including Plate at Back of Volume),” 306.
61. Moore, “Hankow Waterworks (Including Plate at Back of Volume),” 306.
62. Lévi-Strauss, *The Savage Mind*.
63. Richard St George Moore, “Hankow Waterworks,” 17.
64. Hankou Zhongxi Bao, “Shuidian Gongsi Zhaomai Mashi [The Water and Electricity Company Seeks to Purchase Granite].”
65. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower].”
66. Lefevere, *Translation, Rewriting, and the Manipulation of Literary Fame*, 11.
67. Moore, “Hankow Waterworks,” 217.
68. Florian et al., “City Branding: Image Building and Building Images,” 12.
69. Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China*.
70. Fang, “Tap Water and Urban Life in Hankou in the Late Qing Dynasty and Early Republic of China,” 226.
71. “Shuita She Renhun Zhi Mixin [The Superstition of the Water Tower Capturing Souls].”
72. “Shuita She Renhun Zhi Mixin [The Superstition of the Water Tower Capturing Souls].”
73. Wuhan Shi Dang’anguan [Wuhan Municipal Archives], “Hankou Shizhengfu Dang’an [Hankou Municipal Government Archives], 9-15-198,” 11.
74. Bangongshi, Minguo “Xiakou Xianzhi” Jiaozhu (Shangce) [Annotated Edition of the Republic-Era Gazetteer of Xiakou County, Vol. 1], 210.
75. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 12.
76. Anonymous, *Wuhan Zhinan [Guide to Wuhan]*, 9–1.
77. Anonymous, *Tielu Luxing Zhinan [Railway Travel Guide]*, 107.
78. Ya, “Ji Hankou Tianyige [On Tianyige in Hankou],” 7.
79. Uchida, *Wuhan Xiang Shi [Alleyways of Wuhan]*, 152.
80. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 14.
81. Jiang et al., *Hankou Congtan Xiaoshi [Annotated Edition of Collected Conversations on Hankou]*, 406.
82. Richard St George Moore, “Hankow Waterworks,” 17.
83. Bangongshi, Minguo “Xiakou Xianzhi” Jiaozhu (Shangce) [Annotated Edition of the Republic-Era Gazetteer of Xiakou County, Vol. 1], 210.
84. Xu, *Wuhan Zhuzhici [Wuhan Bamboo Branch Lyrics]*, 118.

85. Zushe and Yindong, *Xiakou Xianzhi* · *Jianzhi Zhi* [Gazetteer of Xiakou County: Section on Administrative Divisions]; Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower].”
86. Zhang and Ye, “Hankou Shuita Cangsang Shi [The Vicissitudes of the Hankou Water Tower],” 16.
87. Hankou Zhongxi Bao, “Lianhehui Chouban Jiuhuo Zhong Zhi Xianzai [Current Situation of the Fire Alarm Bell Preparation by the United Association].”
88. Zhang, “Hankou Shuita Da Shuigui de Lishi Jiye [Historical Memory of the Large Water Tank of the Hankou Water Tower],” 20–21.
89. Zhang, “Hankou Shuita Da Shuigui de Lishi Jiye [Historical Memory of the Large Water Tank of the Hankou Water Tower],” 20–21.
90. Huyssen, *Present Pasts : Urban Palimpsests and the Politics of Memory*.
91. McFarlane, *Learning the City: Knowledge and Translocal Assemblage*; Fariás and Bender, *Urban Assemblages: How Actor-Network Theory Changes Urban Studies*.
92. Chinese People’s Political Consultative Conference, Wuhan Municipal Committee, Literature and History Research Committee, *Wuhan Wenshi Ziliao (Xuanji) Disanji* [Wuhan Historical Materials, Selected Edition Vol. 3], 182.

Traditional Dwellings and Settlements

Working Paper Series

FOREIGN-ORIENTED TOURISM AND ZHUHAI'S ARCHITECTURAL AND URBAN MODERNIZATION IN CHINA'S EARLY REFORM ERA (1978-2001)

Yiban Wang, Liran Chen

FOREIGN-ORIENTED TOURISM AND ZHUHAI'S ARCHITECTURAL AND URBAN MODERNIZATION IN CHINA'S EARLY REFORM ERA(1978-2001)



Foreign-oriented tourism boosted China's exchange with overseas in the early reform (1978-2001). For Chinese cities relying heavily on tourism, foreign-oriented tourism had considerable impact on the modernization of their urban landscape. However, extant research focuses primarily on selected architectural cases relevant to foreign-oriented tourism, without systematically analyzing how such tourism influenced the city's urban landscape. As a city on southern China's border, Zhuhai's urban development in China's early reform was typically driven by foreign-oriented tourism. By taking Zhuhai as an example, this study examines how foreign-oriented tourism changed the urban landscape of a Chinese city in the early reform. Notably, the modernization of urban landscapes was not an isolated construction activity but a systematic upgrade centered on the tourism service chain.

1. INTRODUCTION

After 1978, China embarked on economic reform and opening-up to the outside world. In the early years of this transformation, foreign-oriented tourism was accorded a special significance—it served not only as an important source of foreign exchange earnings but also as a window through which China could demonstrate its commitment to reform and opening-up to the world. At the same time, in order to accommodate the growing numbers of overseas visitors, overseas Chinese, and compatriots from Hong Kong and Macao, cities across China began to construct a wave of hotels, resorts, transport terminals, and commercial facilities equipped to receive international guests. These buildings became known as “foreign-related architecture,” offering a crucial lens through which to examine the development of Chinese architecture in the early reform era.

Existing architectural history research has tended to focus on iconic examples such as Beijing's Jianguo Hotel and The Great Wall Hotel Beijing, and Guangzhou's White Swan Hotel. Much of the scholarly discussion has concentrated on the stylistic characteristics of the buildings themselves, the introduction of foreign technology, or the models of Sino-foreign design collaboration. However, this body of research remains rather fragmented, with most studies stopping at case analyses of individual building types and failing to pay sufficient attention to how the specific impetus of foreign-oriented tourism more comprehensively shaped urban landscapes.

As one of the first Special Economic Zones to be established, Zhuhai's own architectural practice in foreign-oriented tourism during the early reform period constitutes a sample of considerable value that cannot be overlooked. On the one hand, Zhuhai's proximity to Hong Kong and Macao, combined with its excellent geographical advantages and coastal scenery, positioned it as a major window for foreign-oriented tourism in

the early years of opening-up. On the other hand, in the 1980s Zhuhai formally established its “three major urban orientations”: to build an export-oriented industrial and agricultural base of considerable standard, to become a tourist destination attracting visitors from Hong Kong and Macao, and to develop as a new type of border-defense city. This placed the development of foreign-oriented tourism at the forefront of the city’s strategic direction and priorities. From the groundbreaking of the Paradise Hill Hotel in 1981, the completion of the Zhuhai Fishing Girl Statue in 1982, and the construction of Jiuzhou City in 1983, to the opening of Zhuhai Holiday Resort Hotel in 1984, the completion of Guangdong Hotel Zhuhai in 1989, and the initial formation of the Lover’s Road coastal scenic belt in 1991, Zhuhai developed a relatively comprehensive foreign-oriented tourism service system over a span of more than 20 years. This system encompassed not only hotels and resorts with foreign-reception functions, but also port customs clearance, transport connectivity, commercial amenities, and urban landscaping, forming an important slice for studying how foreign-oriented tourism influenced urban modernization in the early reform period.

2. FOREIGN-ORIENTED ARCHITECTURE IN ZHUHAI IN CHINA’S EARLY REFORM ERA

Within the field of Zhuhai architectural research, three main scholarly orientations have emerged to date. The first consists of archival compilations of individual building cases, represented by the 1986 publication *Zhuhai Architecture* and related content from the early Zhuhai Special Zone Daily. These materials systematically documented the design concepts and formal characteristics of foreign-oriented tourist buildings such as Zhuhai Hotel and Paradise Hill Hotel Zhuhai, preserving valuable primary archives for subsequent research. However, these studies were largely authored by the designers themselves, focusing on formal analysis of individual buildings while lacking structural examination of the relationship between architecture and urban space.

The second orientation concentrates on Zhuhai’s overall urban construction during the early reform period from 1978 to 1992. For instance, Wang Minghui and others investigated Zhuhai’s “Garden City” planning concept and coastal spatial morphology, analyzing planning strategies that adapted building scale to mountain-and-sea landscapes within a clustered urban structure.¹ Additionally, articles in *Zhuhai Architecture* magazine explored urban structural forms, including 1980s master planning drawings that revealed Zhuhai’s clustered structure at the time, the development extent of various districts, and the functional emphases of major construction projects.² Yet existing discussions in this vein remain rather fragmented, failing to form a systematic understanding of Zhuhai’s urban modernization process.

The third orientation examines architectural style characteristics from a historical evolution perspective. Bixiang Yang and others, through period-based analysis, demonstrated the interactive relationship between buildings and their regional environment across different eras. However, their discussions largely remained at the level of phenomenological description, without delving deeply into the differentiated mechanisms through which foreign-oriented tourist architecture specifically contributed to the urban modernization process.³

During the early reform and opening-up period, foreign-related architecture in the Zhuhai Special Economic Zone exhibited distinct categorical characteristics. The architectural practice of this period can be broadly divided into four types: residential and reception buildings represented by Zhuhai Hotel, Paradise Hill Hotel, and Gongbei Palace Hotel, which emphasized international standards and modern styles primarily for hosting foreign guests; landscape and leisure buildings represented by Zhuhai Holiday Resort Hotel, which relied on natural scenery to create public spaces; traditional cultural exhibition buildings represented by Jiuzhou City, which employed antique-style design to fulfill cultural consumption functions; and infrastructure construction including Lover's Road, Gongbei Port Joint Inspection Building, and the Fishing Girl statue.

3. MODERN EXPRESSIONS OF FOREIGN-RELATED HOTELS: INDIVIDUAL BUILDING STUDIES

3.1. Zhuhai Hotel: Fusion of Lingnan Architectural Style and Modern Practical Functions

Nestled on the southern hillside of Shijingshan Tourist Center and surrounded by mountains on three sides, Zhuhai Hotel stands as an iconic landmark of Zhuhai's foreign-related tourism in the early reform and opening-up era.⁴ Founded in 1981 as a Sino-Hong Kong-Macao joint venture led by Huo Yingdong and other business figures, the hotel involved a total investment of 11 million Hong Kong dollars and covers over 80,000 square meters. It ranked among China's first batch of four-star hotels.

Adhering to the design philosophy of innovating while inheriting tradition, and integrating Chinese and Western elements, the hotel adopts a side-by-side courtyard layout. Scattered buildings are connected by covered corridors, forming a classic Lingnan garden pattern with water in the front and mountains at the back. The front courtyard features a 15-meter circular pond with the Nine Dragons Playing Around the Tripod sculpture. The central courtyard centers on an inland lake of over 2,000 square meters, with the international conference hall extending over the water. Six single-storey villas are arranged on the terrain elevation in the rear courtyard, creating a layered landscape of three lakes and two waterfalls.

Drawing on the Lingnan garden art of condensing grand scenery into a compact space, the layout perfectly fits modern hotel functions: the front courtyard for reception, the central courtyard for public activities, and the rear courtyard for private accommodation.⁴



Figure 1: Zhuhai Hotel Floor Plan. (Source: Kunhao Liang,1986).

Its functional positioning clearly targeted Hong Kong and Macao compatriots as well as foreign tourists. The hotel featured 185 guest rooms with 370 beds, complemented by Chinese and Western restaurants, an international conference hall (seating 120 with simultaneous interpretation equipment), a Boat Hall, shopping arcade, music lounge, swimming pool, and recreation center. Guest rooms were separately located on the southwest side, isolated from service areas to ensure tranquility and emphasize privacy.

Strategically situated approximately 5 kilometers from Macao, the hotel stood on the “must-pass route from Macao to Guangzhou.” This location facilitated easy travel for Hong Kong and Macao visitors while offering them an immersive “Chinese-style” resort experience distinct from their home regions upon entering the mainland.

On January 29, 1984, Comrade Deng Xiaoping attended a meeting at the hotel’s International Conference Center. Entrusted by municipal leaders, Zhang Qianling, the hotel’s general manager, requested Deng to inscribe a message for Zhuhai. He wrote the iconic seven characters: “Zhuhai Special Economic Zone is excellent,” cementing the hotel’s status as a milestone witness to reform and opening-up.¹⁶

Eight years later, during his southern inspection tour in 1992, Deng Xiaoping asked about “the hotel manager from last time,” leading to a reunion with Zhang.¹⁶ This eight-year interval not only reflected Deng’s care for grassroots staff but also confirmed the hotel’s historical position as a window to reform and opening-up. It served as both a witness to the SEZ’s development and a vital platform for Sino-foreign exchanges.⁵

3.2. Paradise Hill Hotel: Breakthrough Practice in Institutional Innovation

Paradise Hill Hotel served as a benchmark of institutional innovation for foreign-related tourism in Zhuhai in the early stage of reform and opening up. In 1979, Zhuhai Tourism Company signed a cooperation agreement with Macao Tourism Development Company Limited. The project was personally designed by Huang Zuqiang, business partner of Macao businessman Wu Fu. Construction started in February 1980, and the first phase was completed and officially put into operation on October 12 of the same year. Opening eight years prior to the promulgation of the Law of the People’s Republic of China on Sino-Foreign Cooperative Enterprises, it provided a vivid pilot reference for the formulation of national foreign-related economic policies.



Figure 2: Panoramic view of Paradise Hill Hotel. (Source: Zhuhai City Chronicle, 2013).

The architectural design embodies the pragmatic ethos of “accomplishing more with limited funds.” The designer remodeled the traditional Chinese quadrangle courtyard into a hexagonal planar form. Three two-storey honeycomb-style buildings are arranged in a triangular composition and connected by a central hexagonal café. The polygonal edges of the hexagonal layout create additional windward surfaces, which satisfy the ventilation needs suited to the hot and humid Lingnan climate.

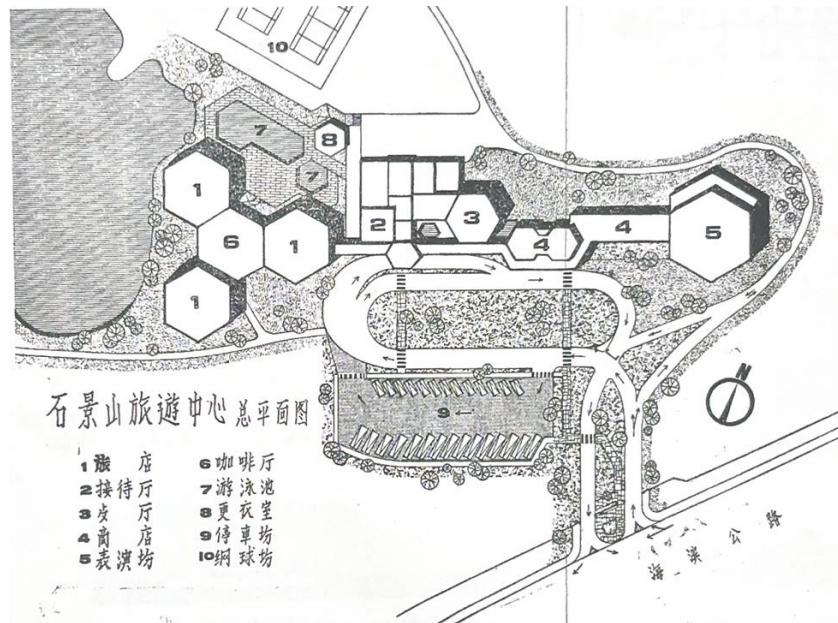


Figure 3: Paradise Hill Hotel Floor Plan. (Source: Huang Zuqiang, 1986).

All buildings are linked by covered corridors, forming a functional chain of accommodation, catering, shopping and performance venues. The hexagonal courtyard atrium of the guest house is topped with a glass canopy and paved with green carpets, with flower beds arranged along verandas, creating a subtropical indoor garden ambiance. The facade is dominated by white glass mosaic, with light blue decorations on the wall sections between windows. Adopting a landscaping layout of large lawns scattered with small woods, the complex harmonizes with the lush Shijingshan Hills and the sea view of Xianglu Bay.⁵

The establishment of Shijingshan Tourist Center epitomizes the early reform and opening-up process. In September 1979, Macao businessman Wu Fu came to Zhuhai with investment proposals. At a time of conservative mindset among local officials, negotiations were held on the beach of Xianglu Bay instead of government offices.⁶ On October 4, 1979, the two sides signed a cooperation agreement at Dragon Boat Pavilion by the sea: the foreign investor contributed 11 million Hong Kong dollars while the Chinese side provided land. The cooperation term lasted 12 years with net profits split at a 3:7 ratio, and all assets would be transferred to the Chinese side upon expiry. The project was completed in merely nine months, achieving remarkable efficiency amid shortages of building materials, construction technology and transportation facilities.⁵

As China's first Sino-foreign cooperative tourist hotel, it introduced eight pioneering management systems, including the general manager responsibility system under the board of directors, flat organizational structure without deputy posts, merit-based recruitment, labor contract system, floating salary scheme and dual-

currency accounting. Recruitment standards were strict: applicants needed a neat appearance and fluent expression, with a height requirement of about 1.6 meters for females and 1.7 meters for males. Selection included written exams, interviews and foreign language tests. Over 630 candidates competed for 60 vacancies, and successful recruits earned more than twice the salary of state-owned enterprise employees. Breaking the prevailing “iron rice bowl” and nepotism recruitment practices of that era, Shijingshan set standardized human resource criteria, serving as a benchmark for modern talent recruitment mechanisms.

3.3. Gongbei Palace Hotel: Local Adaptation of Lingnan-style Architecture

Gongbei Palace Hotel was built in 1981. Its main building features an antique architectural style, with an attic-style tower adopting multi-layered cross ridges and a four-corner pyramidal roof, covered with iconic yellow glazed tiles. The design integrates the courtyard layout of Lingnan gardens with modern hotel functions. The interior preserves a complete Lingnan-style garden courtyard furnished with waterscapes, winding covered corridors and rich vegetation. The main structure is only two to three storeys high and constructed of reinforced concrete. Its low-rise and high-density layout not only echoes the spatial scale of traditional Lingnan architecture, but also forms a distinct visual contrast with the surrounding high-rise buildings.



Figure 4: Gongbei Palace Hotel Current Status Photo. (Source: Author).

As one of the first batch of four-star foreign-related hotels in Zhuhai after the reform and opening up, its functional design presents distinct export-oriented characteristics. The hotel is divided into four major functional zones: the commercial zone on the west, the catering zone on the south, the entertainment zone on the east, and the guest room zone, with more than 62 guest rooms in total. This compound functional layout caters to the demand for cross-border tourism. Facing Macao across the road and adjacent to Gongbei

Port, the hotel has become a transit hub linking the Chinese mainland with Hong Kong, Macao and international travelers. Since its opening, it has received numerous international dignitaries and state leaders, embodying the dual identity of a market-oriented commercial hotel and an exhibition window showcasing the achievements of reform and opening up.

The long corridors, connecting bridges and composite spaces inside these early foreign-related hotels pioneered the model of “hotel as a destination”, which set a direct exemplary reference for the later development of resort tourism and convention & exhibition tourism in Zhuhai.

The historical significance of Gongbei Hotel should be interpreted against the backdrop of the founding of the special economic zone. Zhuhai was established as a city and designated as a special economic zone in 1980, and Gongbei Hotel was completed and put into operation as early as 1981, making it a priority project in the early infrastructure construction of the SAR. Such foreign-related hotels were entrusted with social implications far beyond their basic architectural functions. They served not only as accommodation facilities, but also as physical carriers of SAR culture.

The Spatial Conservation Plan for Historical and Cultural Architectural Blocks of Zhuhai (2009–2020) lists Gongbei Hotel alongside Zhuhai Hotel, Zhuhai Sports Center, the Zhuhai Fisher Girl and other landmarks as protected sites of the SAR Cultural Style Area. It is pointed out that the hotel “records the historical process of the founding of the special economic zone and institutional innovation”. The combination of Gongbei Hotel’s antique style and foreign-oriented functions properly reconciled the two narrative imperatives of that period: national cultural identity and opening-up to the outside world.⁷

3.4. Guangdong Hotel Zhuhai: Modernist High-rise Architecture and Political Symbolism

Guangdong Hotel Zhuhai was completed in 1989 and managed by Guangdong (International) Hotel Management Group under a Sino-foreign cooperative model. As a representative foreign-related business hotel in Zhuhai in the early 1990s, its architectural design centered on the core paradigm of modernist functionalism, abandoning traditional decorative elements and featuring a concise and regular rectangular tower as the main form. The bold vertical lines reinforce the vertical momentum of the high-rise building.

The facade adopts a material system combining concrete frame structure and glass curtain wall, which not only reflects the technical characteristics of industrialized construction but also draws on the design language of modern hotels in Hong Kong and Macao.

On January 25, 1992, during his inspection tour of Zhuhai, Deng Xiaoping ascended to the revolving restaurant on the 29th floor of Fangyuan Building in Guangdong Hotel Zhuhai, overlooking the panoramic

view of the Zhuhai Special Economic Zone and Macao, and delivered an important speech: “The rapid development of our country has delighted the people and attracted worldwide attention. This fully proves the correctness of the line, principles, and policies adopted since the Third Plenary Session of the 11th Central Committee of the Communist Party of China. No one can change them, and whoever opposes the reform and opening-up policy will be doomed to failure.”⁸

This event established Guangdong Hotel Zhuhai as a significant witness to the history of China’s reform and opening-up. Directly inspired by this inspection tour and the spirit of the Southern Tour Talks, the parent group invested 50 million yuan to launch a comprehensive renovation project. Completed in just six months, the project upgraded the architectural style, improved functional facilities, and reshaped the brand image, achieving a historic transformation from an idle building to a modern foreign-related hotel.



Figure 5: Comrade Deng Xiaoping overlooked Zhuhai from the Revolving Palace of Guangdong Hotel Zhuhai. (Source: Tang Peilin, 1999).

Driven by demonstration effects and policy incentives, the affiliated enterprise further invested 200 million yuan in constructing a 28-storey West Tower. The completion of Phase II of Yuehai Hotel was scheduled to align with Hong Kong’s return to China in June 1997, forming an urban landmark pattern with twin towers facing each other across the street.

The evolution from a single idle building to a twin-tower mixed-use complex epitomizes the historical process of the rapid expansion of foreign-related tourism service facilities and the gradual improvement of Zhuhai’s urban architectural system in the 1990s.

The transformation from Fangyuan Building, the predecessor of Yuehai Hotel, into the current hotel serves as a typical model for the adaptive reuse, functional upgrading and urban landmark shaping of existing buildings in China's special economic zones during the new era of reform and opening up. Carrying significant historical events through its physical spatial form and echoing the epochal theme of reform and opening up via architectural renewal practices, the building stands not only as an important material relic from the initial stage of Zhuhai's urbanization, but also as key historical evidence for the development of foreign-related public buildings and the construction of urban open spaces in China throughout the reform and opening-up period. Its historical, architectural and social values together constitute an indispensable part of the architectural history of the special economic zone.

3.5. Glass Building of Zhuhai Nanyou Grand Hotel: Foreign Capital-led Whole-process Construction Model

Nanyou Grand Hotel (also known as Nanyou International Service Center or Yinwan Center) is located at Huishan Hill, Shuiwantou, Zhuhai. Developed by Nanyou Zhuhai General Service Company, it was built as a comprehensive base to support the development of the South China Sea Oilfield and provide dedicated logistics services for foreign oil companies.

The project covers a land area of approximately 78,000 square meters with a total floor area of over 47,000 square meters. Designed and constructed by foreign investors, it involved a total investment of 3.11 million US dollars.

The most striking structure of the hotel complex is its Glass Building. In terms of architectural form, it directly draws on the experience of Hong Kong and Macao, where office buildings were constructed following Western design prototypes. The nine-storey office tower is enveloped by a glass curtain wall, presenting a distinct European and American styling.

The 5-millimeter-thick reflective glass blocks 70% to 75% of direct sunlight. In Zhuhai's subtropical climate, it creates an indoor environment that feels like an overcast day. Meanwhile, the opaque effect prevents outside views into the interior, effectively guaranteeing privacy.

The building boasts great flexibility in spatial planning. Each floor adopts a full open-plan layout, enabling occupants to divide the space freely according to company scale and organizational structure. Partition facilities include movable fiberboard partitions and fixed glass walls.

Structurally, it adopts a reinforced concrete solid core tube combined with a peripheral column grid. This structural form not only accommodates flexible interior partitioning but also achieves outstanding performance in wind resistance and seismic resistance.



Figure 6: Glass Building of Zhuhai Nanyou Grand Hotel. (Source: Zhuhai Nanyou Grand Hotel).

Compared with conventional fixed-compartment office buildings in mainland China at that time, the Glass Building of Nanyou Grand Hotel features highly flexible spatial planning. Each floor is designed as a large open plan, allowing users to partition rooms freely according to company scale and organizational structure with movable fiberboard partitions and fixed glass walls. Its user-oriented design for foreign businesses broke the rigid stereotyped layout of traditional administrative buildings. Adopting a structural system of reinforced concrete solid core tube and peripheral column grid, the building boasts high structural rigidity, satisfying flexible partitioning while delivering excellent wind and seismic resistance.⁹

Different from the accommodation-oriented foreign-related hotels mentioned above, this building shaped Zhuhai's architectural modernization through its style and historical context. As a key foreign-related complex serving the offshore oil industry in the early opening-up period of the 1980s, the Glass Building adopted a foreign-capital-led construction model, blended Hong Kong, Macao and Western architectural styles, and adopted innovative spatial layout and mixed functions. Closely echoing Zhuhai's features of proximity to Hong Kong and Macao, subtropical climate, export-oriented economy and marine oil industry demand, it made a pioneering and benchmarking contribution to the modernization of local architecture.

4. INFRASTRUCTURE: TOURISM-ORIENTED CROSS-BORDER PASSAGE CONSTRUCTION

4.1. Gongbei Port Joint Inspection Building: From Colonial Symbol to National Gateway

Gongbei Port's architectural form underwent a striking transformation from a colonial symbol to a national gateway. The pale yellow Arc de Triomphe-style barrier gate built by the Macau Portuguese authorities in 1871, a symbol of Portugal's northward expansion, had strong colonial overtones. The new Joint Inspection Building, completed in 1999, completely shed this historical burden. With its large scale, high standards, advanced equipment, complete functions, classic elegance and solemnity, it met the practical needs of a modern port while balancing dignity and grandeur in aesthetics.



Figure 7: Arc de Triomphe-style Barrier Gate. (Source: Author).

In the 1991 planning and design tender, four institutes including Jiangsu Provincial Architectural Design Institute participated, and the winning proposal by the institute emphasized the concept of “facing the world and the future”. The main building has two floors (partly three), with three underground floors for parking and shopping malls, and above-ground functional areas for border inspection, customs and visas. The innovation in its architectural language essentially reflects both the assertion of national sovereignty and the posture of opening up.¹⁰



Figure 8: Gongbei Port in 2001. (Source: Author).

The foreign-related tourism volume of Gongbei Port grew explosively around Macao's return. In the first eight months of 2000, inbound and outbound passengers hit 23.08 million (a 26.5% year-on-year increase), with the annual total exceeding 34 million, mostly Hong Kong and Macao compatriots (29.6 million). After the new building opened, 90% of catering enterprises achieved annual profits over 200,000 RMB, retail growth rose by 30 percentage points, and shop rents increased by 30% a year. The port turned from a tedious transit stop into the starting point of tourism consumption, becoming an engine for the regional tourism economy.¹⁰

The project was delayed for years due to insufficient funds in Zhuhai, and only resumed urgently in 1998 as "a national gift for Macao's return". From a broader view, its opening marked a new stage in China's land port management. Over a century, it evolved from a simple stone-and-iron barrier gate to a modern hub with an annual passenger flow exceeding 100 million; each upgrade in its architecture and functions paralleled the improvement of national governance capacity and opening-up level.

Gongbei Port's experience sets a paradigm for foreign-related tourism. It proves a positive correlation between port clearance efficiency and tourism scale, demonstrates the transmission mechanism where port investment boosts passenger flow and industrial development, and provides a benchmark for the modern construction of Hengqin Port and the Zhuhai Highway Port of the Hong Kong–Zhuhai–Macao Bridge. When tourists clear customs quickly in the spacious, bright hall, they experience not just a border check, but a daily reflection of normalized international exchanges in reform and opening-up China.

4.2. Lovers' Road Coastal Landscape Belt: From Traffic Artery to Urban Business Card

In October 1991, Zhuhai built China's first coastal landscape road — Lovers' Road. Gao Zhaohe, the first director of Zhuhai Urban Planning Bureau, recalled that the road was initially designed to ease traffic pressure on Fenghuang Road, yet its actual value far exceeded transportation function.¹¹ For planners at that time, Lovers' Road was more than a thoroughfare; it aimed to reshape local lifestyles and embody the SEZ's spirit of emancipating the mind and forging ahead with innovation.

Lovers' Road was completed in phases. Its central section opened in August 1992, allowing tourist buses to reach the Zhuhai Fisher Girl Statue and ending its decade-long isolation with no accessible road. In the mid-1990s, the southern section connected with Macao's reclamation area. The South Lovers' Road was finished in 1999, realizing full north-south alignment and encircling downtown Zhuhai.¹¹ Throughout construction, Zhuhai adhered to the philosophy of harmony between humanity and nature. At the Lingjiaozui bend stood a huge exposed rock. Some suggested blasting it for a straight road, but local officials opted to detour instead of damaging the original landform and natural landscape, thus preserving the site intact.

Lovers' Road links scenic spots including the Zhuhai Fisher Girl Statue and Xianglu Bay, forming a core attraction for overseas tourists. In 1982, sculptor Pan He erected the 9-meter stone Fisher Girl by Xianglu Bay. Beyond an ordinary urban sculpture, it soon became Zhuhai's city calling card. Pan He summarized his creation with two phrases: "Sculpture first, city later; sculpture first, legend later". This reflected the eagerness of the SEZ in the early reform era to showcase its achievements to the outside world, even before the city was fully built.¹²

Shortly after its completion, the Fisher Girl Statue became a must-visit site for overseas tourists. Many foreign investment delegations included it in their itineraries. Visiting the statue served as a cultural ice-breaking ritual, highlighting the city's aesthetic taste and cultural refinement beyond concrete construction, and subtly boosting investors' confidence.

Overall, infrastructure construction in this period bore dual historical significance. It served as a physical embodiment of China's deepening opening-up and governance demonstration ahead of Macao's return, and witnessed Zhuhai's transformation from a remote fishing village into a modern tourist city. Gongbei Port reflected how hardware investment drove passenger flow and industrial development, while Lovers' Road embodied the emotional bonding function of cultural symbols in foreign exchanges. Together, they set a paradigm for later major projects such as Hengqin Port and the Hong Kong–Zhuhai–Macao Bridge, and shaped urban spaces for normalized international exchanges amid China's reform and opening-up.

5. ARCHITECTURAL COMPLEXES: SCENARIO-ORIENTED SPATIAL PRACTICE FOR TOURISM

5.1. Zhuhai Holiday Resort Hotel: A “City within a City” Between Mountains and Sea

In 1984, Zhuhai Resort Hotel, invested in by Hong Kong businessman Wu Zhaosheng, officially opened to the public. Positioned as a large comprehensive resort complex, it set a benchmark for high-end coastal vacation in mainland China at that time. Covering 630,000 square meters, the resort adopts white as its dominant tone, with 89 villas of white walls and yellow glazed tiles scattered around the main building like stars surrounding the moon. The Y-shaped main building resembles a seagull spreading its wings, echoing the natural landscape.



Figure 9: Main Building of Zhuhai Holiday Resort Hotel. (Source: Zhuhai Holiday Resort Hotel).

Breaking the conventional row-style hotel layout popular at the time, the buildings of Zhuhai Resort are scattered among the sea, green woods and flowers. In its early years, the resort remained relatively exclusive, mainly offering independent Spanish-style villas for tourists.¹³ The villa design ensured privacy and independent landscape views for every unit. Residents could enjoy a quiet and comfortable life without hiring servants or security guards. This Western-style living space transplanted European and American vacation lifestyles into Zhuhai's mountain and sea landscape.

The resort targeted a special group in the early reform era: long-term expatriates working in China.¹³ It built a cluster of Spanish-style villas available for monthly lease at over 10,000 Hong Kong dollars, with expatriate staff from the South China Sea Oilfield as its primary early guests. Equipped with complete recreational facilities including horse riding, live shooting, bowling, fishing, speedboats, billiards and sauna, the resort functioned as a self-contained “city within a city.”

Notably, the racecourse horses only responded to English commands, reflecting the resort's international service orientation. Staff received basic English training and half-month intensive morning drills to meet international service standards.

The resort adopted a pricing mechanism to filter clientele. At 200–300 RMB per night for a villa, the cost equaled half a year's savings for an ordinary mainland family, making it an exclusive destination for Hong Kong, Macao and foreign guests for a long time. In the 1990s, visitors from Beijing, Shanghai and Guangzhou began to patronize it, and local residents started holding wedding and birthday banquets here. The originally foreign-oriented space gradually opened to domestic elites.

Wu Zhaosheng's investment experience was typical of Hong Kong investors in the early days. He initially invested only 500,000 yuan with limited confidence, and later injected another over 500,000 yuan after in-depth understanding. He was attracted by three pivotal preferential policies: investment guarantee and tax incentives featuring two-year tax exemption followed by two-and-a-half-year reduced taxation — key measures to draw Hong Kong capital in the early reform period. As an early test case for these policies, Zhuhai Resort introduced Western lifestyles such as independent villas, long-term monthly rental and club-style social life to Zhuhai, serving as a window for mainland China to learn international living norms¹³.

Beyond merely receiving foreign tourists, Zhuhai Resort's foreign-related tourism nature formed a unique cross-border living platform through spatial segregation, pricing regulation and complete supporting facilities under the specific historical context. It acted as a showcase for reform and opening-up policies and a livable enclave for expatriates in China. While creating consumption segregation, it also facilitated the exchange of lifestyles. Balancing garden and city, foreign-oriented and domestic-oriented functions, display and practical use, it eventually evolved into a complex cultural symbol in Zhuhai's urban memory.

5.2. Jiuzhou City: A Consumable Cultural Experience Scenario

Jiuzhou City stands between Shijingshan Tourist Center and Zhuhai Hotel, constructed by Zhuhai Tourism Company in early 1982. The complex resembles a Ming and Qing imperial palace from afar, featuring yellow glazed tiles, red walls and ornate carved beams. Up close, it reveals distinctive Lingnan garden elements including pavilions, terraces, bridges and flowing streams. This blended style enables foreign tourists to instantly recognize typical Chinese features while embodying the refined charm of Lingnan region.



Figure 10: Jiuzhou City Tower. (Source: Photo taken by the author) .

Its core design refines and reorganizes the spatial layout of ancient southern water towns, adopting a four-stage spatial sequence of introduction, development, transition and climax. The sequence begins with a 70-meter-long, 16-meter-high three-storey city gate. With double-layered upturned eaves, white railings and blue brick tones, it creates an immersive atmosphere. The building houses exhibition malls, office spaces and hardware stores, integrating traditional cultural appearance with commercial functions. The second stage forms a transitional space via a square and decorated pavilion, adopting the Suzhou garden technique of subtle restraint followed by gradual unveiling. The third stage stretches along a valley stream. The 12-meter-wide street is lined with arc-shaped and zigzag shops scattered along the hillside. Three small bridges span the stream, presenting the poetic charm of Jiangnan water towns. The fourth stage culminates at Mingzhu Lake with a dramatic visual transition. A boat-shaped hall serves as a café, transforming the traditional garden painted pleasure boat into a modern consumption venue.¹⁵

In architectural details, Jiuzhou City integrates modern materials with traditional forms. Spray-coated white railings and reliefs replicate the visual effect of white marble at lower cost; brick veneers replace solid brickwork for faster construction and unified appearance; glazed tile roofs are matched with aluminum alloy windows, combining classical roof forms with modern practicality. Overall, it adopts modern techniques to inherit traditional architectural aesthetics, reshaping classical Chinese styles with contemporary materials for a familiar yet innovative visual effect.

Positioned as a shopping village within a garden, Jiuzhou City serves both tourists and local residents. Its foreign-related tourism trait lies in embedding consumption into sightseeing experience. The four spatial sequences correspond to the psychological process of entering, viewing, exploring and reaching a climax, merging shopping with aesthetic appreciation. The design concept of shopping amid landscapes turns

consumption into a cultural experience. Linked with the garden of Zhuhai Hotel via willow embankments and jade belt bridges, it forms a complete service chain of catering, accommodation, sightseeing and shopping.

According to witnesses interviewed by Southern Metropolis Daily (2011), Jiuzhou City became a landmark of the special economic zone upon completion. To accommodate foreign visitors, Hong Kong dollars, foreign exchange certificates and RMB were all accepted for consumption. Local residents recalled it as Zhuhai's best-stocked department store in its early years, and a window for mainland people to broaden their horizons in the 1980s. Carrying the historical context of reform and opening-up through its physical space, Jiuzhou City has become an urban memorial site recording the course of China's opening-up.

6. URBAN PLANNING: EMBEDDING TOURISM LOGIC INTO OVERALL URBAN DEVELOPMENT

6.1. Strategic Shift from Industrial Priority to Environmental Priority

In 1979, when Zhuhai was established as a city, it did not follow the industrial-led development path adopted by special economic zones like Shenzhen. The municipal government set the positioning of building a modern garden-style coastal city featuring openness and high civilization. This policy curbed the development of high-pollution industrial projects and reserved prime land for foreign-related tourism architecture. While the coastlines of other coastal cities were mostly occupied by docks and industrial ports, Zhuhai planned its shoreline for tourism landscapes such as Lovers' Road, granting front sea views to later landmarks including Grand Bay Hotel and Zhuhai Resort.

The 1980 urban plan divided downtown Zhuhai into eight clusters — Xiangzhou, Jida, Gongbei, Qianshan, Tangjia, Xiazha, Wanzi and Nanping — separated by mountains, water bodies and farmland. Jida was designated for tourism, commerce and trade, laying the groundwork for subsequent hotel construction. Gongbei developed into a foreign trade center relying on its port advantage, while Wanzi leveraged its proximity to Macao to develop border trade and tourism.

This cluster layout enabled targeted site selection and functional positioning for foreign-related architecture, avoiding functional mismatch. It also fostered a complementary pattern: Jida gathered high-end hotels, and Gongbei focused on business and trade-oriented hotels.

6.2. Spatial Regulation: Coordination between Architecture and Mountain-water Environment

To develop foreign-related tourism and preserve urban scenery, Zhuhai enforced strict building height control from its founding. It adopted the principle of placing low and mid-rise buildings near mountains and high-rises farther away, so as to maintain proper visual harmony between architecture and mountain landscapes.

This regulation reduced the visual dominance of man-made structures over natural mountains and integrated the city better with nature. Early foreign-related landmarks including Shijingshan Tourist Center and Zhuhai Hotel adopted sprawling or setback layouts that followed natural terrain instead of flattening hills and valleys. Their staggered forms created rich spatial layers, standing in sharp contrast to the box-like high-rise hotels prevalent across mainland China at that time.

Roads such as Lovers' Road and Haibin Road served not only transportation but also as essential sightseeing routes for foreign tourists. This required buildings along the routes to emphasize facade design, abandoning rigid slab-style high-rises in favor of transparent, lightweight forms that blend with coastal scenery.

Many buildings near mountains and waters were tailored to local landforms for an open spatial layout. Low-rise scattered arrangements of Jiuzhou City, Zhuhai Resort and Zhuhai Hotel ensure that mountain and sea views remain unobstructed when viewed from urban roads.

6.3. Flexible Blank Reservation and Environmental Access

A 1991 report in *Va Kio Daily* revealed a pivotal decision made by Zhuhai's urban planning authority: ample land reserves were reserved for construction, with buffer spaces retained between urban clusters. Such flexible planning was particularly valuable in the early reform era.

At that time, domestic tourism standards remained rudimentary. While other coastal cities prioritized industrial development and converted shorelines into export docks, Zhuhai refrained from exhaustive land exploitation and preserved prime coastal sites. This foresight allowed the city to construct internationally standard facilities such as the Zhuhai Convention Center and Airshow venues in the late 1990s, when demand for international conferences and high-end resorts surged, without demolishing existing buildings.

Zhuhai elevated urban greening from decorative embellishment to a rigid planning indicator. Statistics from 1999 show the green coverage rate of the built-up area reached 34.15%, with per capita public green space at 20.8 square meters. Environmental constraints reshaped the design logic of foreign-oriented architecture:

buildings were no longer isolated entities but required harmonious integration with natural mountains and waters.

Planning regulations stipulated that constructions should ingeniously adapt to local terrain. Accordingly, projects including Zhuhai Resort and Zhuhai Hotel adopted garden-style layouts, breaking massive architectural volumes into scattered low-rise clusters nestled within original vegetation. Polluting industries were zoned outside the central and suburban urban areas via spatial isolation, ensuring sound air quality in tourism zones. This turned the vision of a “garden-style coastal city” from a slogan into tangible reality.

6.4. Conceptual Innovation of “The Whole City as a Scenic Area”

Traditional tourism development focused on constructing and enclosing individual scenic spots, while Zhuhai pioneered a new model where the entire city functions as a tourism carrier. Centered on themed urban tourism, Zhuhai positioned the whole city as a tourist destination. This shift extended the functions of foreign-related architecture to surrounding areas. For example, Jiuzhou City evolved into a Recreational Business District (RBD), transforming from an isolated shopping complex into an integrated part of urban public space.

Zhuhai’s urban planning reserved land for large-scale international events. The inaugural 1996 Zhuhai Airshow attracted 800,000 visitors, with the second edition exceeding one million in 1998. Such achievements stemmed from the government’s prioritization of infrastructure construction and reserved venues for conventions and exhibitions.

Against the backdrop of rampant sprawling urban expansion across China in the 1980s and 1990s, Zhuhai’s cluster-based planning set an example of restrained development. By regulating building density and preserving natural mountain and water buffers, the city avoided overcrowded construction. This slow-paced modernization maintained low density and high environmental quality for foreign-related tourist architecture. Zhuhai was named one of China’s Top 40 Tourist Attractions in 1997, proving that ecological preservation itself constitutes tourism productivity.

7. CONCLUSION

First, at the level of individual buildings, the construction of international hotels pioneered modern urban architecture. For example, the Zhuhai Hotel, completed in 1984, broke away from the traditional guest house model. Its streamlined exterior and courtyard-style layout not only met the functional needs of international

reception but also integrated Lingnan regional characteristics. Its architectural style and facility standards directly influenced overseas tourists' perception of Zhuhai's and even China's modernization level.

Second, supporting infrastructure strongly underpinned the development of international tourism. The construction and renovation of the Gongbei Port Joint Inspection Building and the opening of the Lianhua Bridge fully reflected a tourism-oriented urban construction logic, providing more convenient land access for international tourists entering Zhuhai via Macao.

Third, the planning of building complexes highlighted a “tourism scenarization” design concept. As an early large-scale international tourism complex, the Zhuhai Resort Complex adopted an open layout that organically integrated coastal landscapes with architectural spaces, offering important references for subsequent urban functional zone development.

Fourth, at the urban planning and image-building level, international tourism directly promoted the realization of Zhuhai's positioning as a “coastal garden city.” To attract overseas tourists, Zhuhai integrated urban greening, landscape creation, and tourism resource development, constructing large-scale public spaces such as coastal parks and forming an urban landscape characterized by “intertwined blue and green spaces, fresh and elegant.”

In summary, the impact of early reform-era international tourism on Zhuhai's urban landscape spanned multiple dimensions, including individual buildings, infrastructure (e.g., Gongbei Port Joint Inspection Building, Lianhua Bridge), building complexes (such as the Zhuhai Resort Complex), urban image-building, and urban planning. Though seemingly a narrow service sector, international tourism exerted extensive and comprehensive influences on the urban landscape for two reasons: First, urban tourism involves overseas tourists' all-round experience of a city's culture and lifestyle, leading to multi-layered impacts on urban landscape modernization. Second, as a key channel for China to open up to the world in the early reform era, the quality of international tourism services shaped foreigners' first impressions of China, directly affecting subsequent Sino-foreign economic, trade, and cultural exchanges. Consequently, urban landscape construction—an integral part of developing international tourism—received significant attention from both central and local governments, further deepening the impact of international tourism on urban landscape modernization.

ACKNOWLEDGEMENT

This research is supported by the National Natural Science Foundation of China (No. 52308006) and the General Research Grant of Macau University of Science and Technology (No. FRG-25-002-FA).

NOTES AND REFERENCES

1. Wang, Minghui, and Wei Chen, "Forms and Characteristics of Urban Architecture in Zhuhai." *Architectural Journal*, 10 (1999), pp. 21-30.
2. Gao, Zhaohe, "On the Architectural Structural Form of Urban Zhuhai." *Zhuhai Architecture*, 01 (1986), pp. 2-6+9.
3. Yang, Bixiang, "A Preliminary Study on the Features of Urban Architectural Style in Zhuhai." *Design*, 13 (2018), pp. 24-28.
4. Liang, Kunhao, "A Brief Introduction to the Design of Zhuhai Hotel." *Zhuhai Architecture Quarterly*, 02 (1986), pp. 15-18.
5. Huang, Zuqiang, "Shijingshan Tourist Center." *Zhuhai Architecture Quarterly*, 01 (1986), pp. 28-33.
6. Zhang, Yuanyuan, "Meeting Foreign Investors Secretly on the Beach in Those Days." *Zhuhai Special Zone Daily* (2010), <http://zhuhaidaily.hizh.cn>.
7. Guangdong Urban and Rural Planning and Design Institute, and Guangdong Development Research Center, *Spatial Protection Planning for Historical and Cultural Architectural Blocks of Zhuhai (2009-2020)*. Guangdong Urban and Rural Planning and Design Institute & Guangdong Development Research Center: Guangzhou, 2009.
8. Deng, Xiaoping, *Selected Works of Deng Xiaoping Volume III. Qishi Theory Network* (1992), <https://www.qstheory.cn/>.
9. Sun, Guanlai, "Nanyou International Service Center." *Zhuhai Architecture Quarterly*, 02 (1987), pp. 24-26.
10. Tang, Bingquan, "The Completion of the New Joint Inspection Building to Boost Guangdong-Macao Economic Cooperation and Enhance People-to-People Exchanges" [Editorial]. *Va Kio Daily* (1999), p. 1, <http://www.jornalvakio.co>.
11. Gao, Zhaohe, "A Coastal Sightseeing Road Embodies the Reform Spirit of the Special Economic Zone." *Nanfang Daily* (2018), p. 1, <https://www.southcn.com/>.
12. Xu, Xin, "Interview with Sculptor Pan He." *Va Kio Daily* (1985), <http://www.jornalvakio.co>.
13. Hong Kong Zhicai Management, Acting as Huihai Agent: The Main Building of Zhuhai Resort Completed and Introduced at a Press Conference Recently [Editorial]. *Va Kio Daily* (1987), <http://www.jornalvakio.co>.
14. Liang, Kunhao, "A Brief Discussion on the Architectural Conception of Jiuzhou City in Zhuhai." *Zhuhai Architecture Quarterly*, 01 (1987), pp. 28-31.
15. Jiuzhou City: A Scenic Spot for Outsiders and a Spiritual Habitat for Locals. *Southern Metropolis Daily* (2011), <https://news.southcn.com/>.
16. Zhang, Qianling, "Zhuhai Special Economic Zone Is Excellent": Deng Xiaoping's First Inscription for a Special Economic Zone." In *Pioneering the Way—One Thousand First Endeavors of Guangdong in Reform and Opening-up*. People's Publishing House: Beijing, 2018.

Traditional Dwellings and Settlements

Working Paper Series

THE FORMATION OF A “GLOBAL SENSE OF PLACE”: A CASE STUDY OF PUJIANG NEW TOWN IN SHANGHAI

Yanwen Xue

THE FORMATION OF A “GLOBAL SENSE OF PLACE”: A CASE STUDY OF PUJIANG NEW TOWN IN SHANGHAI



In an era of globalization, the tension between global mobility and local identity is intensifying. Urban renewal often erases historic places, creating an urgent need to cultivate a sense of local belonging. New towns are frequently presented as a solution, designed to create “place” to which people can attach. This practice, however, is fraught with critical questions. The concept of “sense of place” describes an emotional bond to a location rooted in shared memories and tradition, while this model relies on long-term stability and becomes less applicable in today’s highly mobile world. To address the lacuna, this study focuses on Pujiang New Town, a 10.3 km² community born from global forces in Shanghai, which was also resettled residents displaced by the World Expo in the central city. As a tabula rasa project, Pujiang New Town lacked the organically accumulated meaning of historic districts, offering a unique opportunity to analyze the formation of a “global sense of place.”

This study’s qualitative methods, including cognitive mapping and in-depth interviews, reveal an interesting disjuncture. The planners’ attempt to evoke nostalgia through symbolic elements like historic Shanghai-style gateways and plane trees failed to create sense of place among residents. The sense of place arose instead from a deeper translation: successfully embedding traditional Italian spatial archetypes (e.g., walkable piazzas, mixed-use streetscapes, sequenced public spaces, and city walls) into the town’s modern fabric. The research indicates that an authentic sense of place is not carried by aesthetic symbols, but is built upon a spatial grammar that organizes and enriches the lived experience of its inhabitants.

This finding challenges the superficial application of cultural symbols in urban design. It demonstrates that the vehicle for a resilient, global sense of place is not the mimetic reproduction of style, but the translation of a deeper spatial grammar that enables and enriches lived experience. As such, this paper contributes a crucial empirical grounding to Massey’s theory within the Chinese context. As for the debate on the “translation of tradition,” it contends that what is truly translatable—and valuable—is not the static image of tradition, but its underlying principles of social and spatial organization.

1. INTRODUCTION

Globalization has catalyzed an era of unprecedented hyper-mobility and time-space compression, phenomena that, as David Harvey fundamentally articulated, have radically reorganized human experience.¹ While this rapid expansion has brought significant improvements in infrastructure and economic growth, it has also caused profound spatial disruptions in the communities. As global flows of capital and culture increasingly displace regional distinctiveness, Manuel Castells’s theory regarding the ascendancy of the space of flows over the space of places, explains how this shift reshapes traditional settlements and weakens the localized spatial forms that once anchored communities.² At the same time, millions of voluntary and involuntary migrants have been uprooted, moving across rural, suburban, and transnational boundaries. For these mobile populations, the process of deterritorialization—a pervasive “disappearance of place” that erodes traditional identities, historical continuity, and community ties—renders a lack of belonging the defining condition of postmetropolitan life. Ultimately, individuals frequently find themselves dislocated, losing the tangible, intimate connections to their lived environments and experiencing a profound anxiety of rootlessness.

In the context of globalization, place-making has been revitalized in contemporary urban planning to counteract the homogenization of cities. New towns are frequently presented as a solution, designed to create a place to which people can attach. Many urban designers claim that they have incorporated elements of traditional communities into urban development in order to evoke a sense of place among residents. However, this manufactured action is fraught with both theoretical shortcomings and practical problems. The concept of place can be traced back to the writings of humanist geographers in the 1960s,³ emphasizing the emotional bond between individuals and their living places. Traditionally, it has long been assumed that the formation of sense of place requires a certain amount of time to accumulate.⁴ However, in the context of contemporary urban expansion, many new towns lack such temporal depth. Contrasted with historic districts shaped by long-term organic evolution, the formation of sense of place through gradual accumulation seems infeasible. This prompts a critical reflection: How can sense of place form within a compressed timeframe without a long history? Furthermore, does the incorporation of tradition elements in the new towns merely manifest as a superficial scenography of aesthetic symbols, or successfully establish a resilient foundation for contemporary urban life?

In this paper we investigate the relationship between urban design and the formation of sense of place, using a case of Pujiang New Town, a 10.3-square-kilometer settlement in Shanghai, China. Pujiang New Town was one of the pilot projects of Shanghai's ambitious "One City, Nine Towns" initiative in 2001, which was explicitly designed to counteract urban homogenization by importing distinct, foreign architectural paradigms into the Chinese context.⁵ This rather utopian objective immediately sparked widespread academic debate and public interest. Its influence extended overseas, establishing the initiative as an experiment in new town development of global significance. Among these projects, Pujiang New Town was positioned as Italian style, and it was later master-planned by the renowned Italian architect Vittorio Gregotti. Notably, this new town did not develop through organic population growth. It served as the primary relocation site for the residents displaced from historic districts, as well as rural peasants from its surrounding countryside, which means a large group of people are suddenly resettled in a completely new community. Therefore, using Pujiang New Town as a living laboratory, this study examines the mechanisms through which a sense of place forms under conditions of extreme spatial translation. By analyzing how foreign architectural archetypes are imported and adapted into local socio-cultural practices, the paper questions the role and limits of spatial design in contemporary place-making.

The paper proceeds as follows. First, it reviews key literature on sense of place and mobility, critically examining the theoretical shift from static definitions of rootedness toward dynamic, globalized frameworks of belonging. Second, it introduces Pujiang New Town in detail and outlines the qualitative research methodology adopted, including cognitive mapping and interviews. Third, it presents and interprets the

empirical findings, contrasting the failure of superficial aesthetic symbols with the successful localization of imported spatial archetypes. Finally, it provides a comprehensive discussion on the implications of treating tradition in urban design, providing theoretical insights to better guide contemporary city development.



Figure 1: The location of Pujiang New Town in Shanghai, China. (Source: elaborated by author).

2. THEORETICAL REVIEW

2.1. From Rootedness to Spatial Mobility

The concept of sense of place, famously proposed by geographer Yi-Fu Tuan, describes an emotional bond to a location rooted in shared memories and tradition. Tuan proposed the concept of toponophilia in 1974 to express people's love for places, arguing that "topophilia is an emotion associated with a specific place," and that place is "the center of perceived value."⁶ Initially undifferentiated spaces become places as people become familiar with them and assign them value. Another geographer Relph believes that place is the starting point for people to locate themselves and grasp the larger world. Relph focuses on place identity, which refers to a continuous consistency and wholeness that makes the place stand out in its surrounding environment. In his view, a sense of place consists of three basic elements: the static physical setting; human activity within the setting; and the meaning ascribed to the setting and activity.⁷ In people's experience of

place, these three elements are closely linked and interwoven to form a unique “sense of place.” Both of these two famous humanist geographers believe that place is a complex phenomenon that is difficult to clearly define from superficial characteristics such as location, appearance, and function. Place can take on diverse forms due to different contexts, personal experiences and individual interpretations. The ultimate sense it conveys often corresponds to classic metaphors, among which “home” is the most typical and universal one.

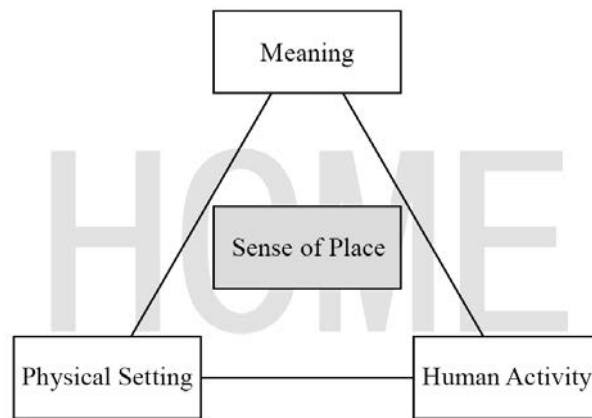


Figure 2: The basic elements of sense of place. (Source: Relph, 1976).

However, the globalization has fundamentally disrupted this classical, static conceptualization. At the beginning of the 21st century, the social sciences witnessed a profound paradigm shift known as the “mobility turn.”⁸ This reorientation argued that traditional spatial theories were insufficient for capturing the ways in which contemporary life is predicated on continuous physical and imaginative mobility. Such conditions of hyper-mobility pose a direct challenge to earlier, place-based frameworks of attachment, which tended to assume a positive correlation between local rootedness and social cohesion, while associating mobility with social fragmentation. As Gustafson points out, the conventional anchor of sense of place is predicated on constancy, rendering spatial fluidity a systemic threat.⁹ Traditionally, scholars like John Brinckerhoff Jackson argued phenomenologically that place attachment is actively created over time, assuming a linear, positive correlation between the length of residency and emotional embeddedness.¹⁰ Yet, recent empirical literature reveals that this linear assumption is overly simplistic within mobile environments. Memories triggered by imported spatial archetypes can evoke a fleeting yet powerful sense of familiarity, helping migrants quickly domesticate new environments.¹¹ Furthermore, socioeconomic paradoxes abound: Gustafson’s research demonstrates that highly mobile, cosmopolitan international business travelers in Sweden frequently exhibit higher rates of local civic engagement than their highly rooted domestic counterparts.¹² Similarly, historical embeddedness alone does not guarantee spatial resilience. An empirical investigation of the Liwan Historical and Cultural District in Guangzhou proved that merely having traditional local ties is insufficient to mobilize

resistance against urban restructuring; only “active” typologies of attachment predict opposition to spatial destruction.¹³

2.2. Translating a Global Sense of Place

These empirical contradictions—where mobility can foster civic engagement while historical rootedness does not necessarily ensure spatial resilience—reveal the limitations of traditional place theory. At the same time, they provide a compelling theoretical point for Doreen Massey’s formulation of a “global sense of place.” Massey challenged the assumption that places must be bounded, introverted enclosures defined by an internalized history. Instead, she posited that a global perception of place transcends the shackles of fixed coordinates, operating as an open, dynamic intersection of social relations. Cultural theorist Ernesto Laclau reinforces this paradigm, emphasizing that local culture is inherently open and porous.¹⁴ In this relational framework, the place is not constructed through antagonistic opposition to external forces, but is realized entirely through its connection to them. Massey’s theory argues that the “outside” is fundamentally constitutive of the “inside.” A global sense of place demands an extroverted spatial awareness, one that positively integrates global flows into local realities. Within this paradigm, the primary subjects of academic inquiry become the digestion and reconstruction of spatial identity, the friction and fusion of disparate cultures, and the adaptive strategies of marginalized groups within volatile sociopolitical landscapes.

“Instead, then, of thinking of places as areas with boundaries around, they can be imagined as articulated moments in networks of social relations and understandings, but where a large proportion of those relations, experiences and understandings are constructed on a far larger scale than what we happen to define for that moment as the place itself, whether that be a street, or a region or even a continent. And this in turn allows a sense of place which is extroverted, which includes a consciousness of its links with the wider world, which integrates in a positive way the global and the local.”

Doreen Massey¹⁵

However, despite its theoretical sophistication, Massey’s relational framework poses significant challenges for spatial practice. The question of how to materialize an open, process-oriented understanding of place within the fixed language of urban design remains largely unresolved. In the context of accelerating globalization and the widespread anxiety of rootlessness associated with hyper-mobility, planning practice has often responded not by embracing relational complexity, but by reverting to simplified and nostalgic spatial models. This tendency is most clearly manifested in the rise of the New Urbanism. Originating in the United States and rapidly disseminated globally, New Urbanism promotes human-scaled environments characterized by walkable neighborhoods, traditional architectural vocabularies, and formally enclosed public spaces. While framed as a corrective to modern spatial alienation, such approaches frequently rely on the reproduction of

historically derived forms as a proxy for place identity.

Yet, the translation of place into a design strategy is fraught with critical risks. When detached from lived social relations, the classical notion of place becomes highly susceptible to formalization and commodification. In many globalized new town developments, “sense of place” is instrumentalized as a marketing device, reduced to the superficial application of recognizable architectural imagery—such as imported European typologies—onto otherwise generic urban fabrics. What emerges is not a relationally constituted place, but an aestheticized simulation of one. To critically assess whether a global sense of place can be meaningfully realized, it is therefore necessary to examine contexts where global mobility, design intentionality, and the absence of historical continuity intersect most intensely.

3. STUDY AREA AND METHODOLOGY

3.1. The planning of Pujiang New Town

Covering 10.3 square kilometers in Shanghai, Pujiang New Town is the primary focus of this research. It was a flagship project of the 2001 “One City, Nine Towns” initiative, designed to break the monotony of standard suburban sprawl. Master-planned by Italian architect Vittorio Gregotti, Pujiang New Town was designated as the “Italian Town.” Interestingly, the design rejected the superficial copying of European buildings. Instead, it relies on a rigorous 300×300m grid system that organizes four housing types—courtyard houses, waterfront homes, standardized villas, and apartments—into self-sustaining neighborhoods. By translating the European “walled city” into a modern context with clear boundaries and public squares, Pujiang uses “Italian style” as a foundational spatial grammar rather than mere surface decoration.

This unique physical design is further complicated by its highly diverse population, which is essential for understanding how a local sense of place forms. The residents consist of three main groups with vastly different backgrounds. The most critical group is the Expo Resettlement Residents, who were displaced from historic central Shanghai in 2005; they face a sharp emotional contrast between their memories of traditional city alleyways (*lilong*) and this newly built suburb. The second group includes Local and Suburban Residents, who are highly familiar with the regional culture and maintain stable local ties. Finally, the third group consists of Migrant Workers and Caregivers, a transient population facing high survival pressures, for whom the town is a site of temporary survival rather than an “Italian lifestyle.” This mix creates a highly complex social environment within the manufactured Italian landscape.

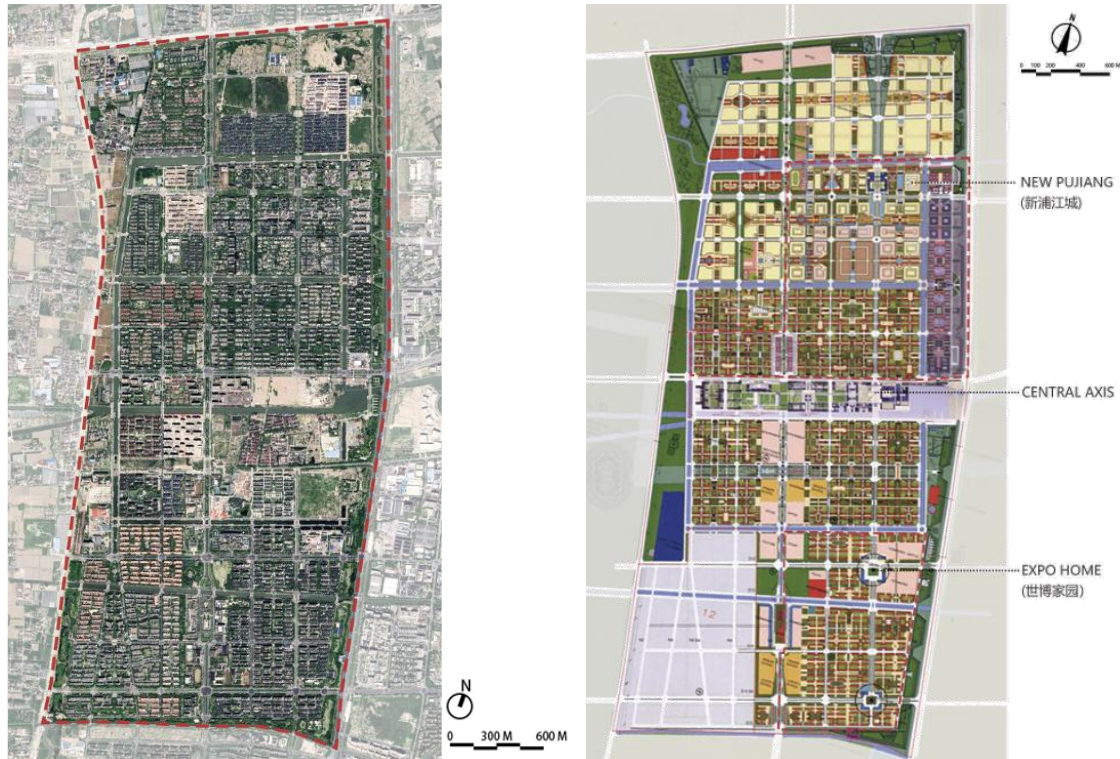


Figure 3: The Satellite image and master planning of Pujiang New Town (Source: left: Google map, 2024; right: Xia, Liqing, 2003).¹⁶

3.2. Research Methodology and Data Collection

To empirically capture how a “global sense of place” is formed within a newly constructed environment, this study must move beyond objective spatial measurements and assess the subjective spatial cognition of residents. To achieve this, the primary research method employed is cognitive and affective mapping (often referred to as psychogeography mapping). The theoretical foundation for this approach is heavily indebted to the seminal work of urban planner and geographer Kevin Lynch. Lynch fundamentally shifted urban studies by arguing that an individual’s understanding of a city is not merely a reflection of its objective geographical topography, but rather the formation of a subjective mental image.¹⁷ He posited that a sense of place is synthesized through direct sensory perception overlaid with memory and lived historical experience. Therefore, to understand how a place functions, researchers must understand the spatial imagery held within the residents’ cognition. While traditional maps prioritize geographical accuracy, cognitive maps prioritize psychological importance. As Lynch observed, every element a resident chooses to include in their personal map is imbued with personalized identity, structure, and meaning; people naturally “draw” what is emotionally and functionally significant to them. Even if these psychogeography maps distort physical distances, they accurately capture the sequential movement and spatial anchors that allow residents to feel

confident, safe, and attached to their environment. Because this study seeks to understand how imported Italian spatial grammar translates into local attachment, cognitive mapping provides the ideal tool to extract these intangible spatial images and construct a collective memory of the community.

To systematically investigate the formation mechanisms of a “global sense of place” in Pujiang New Town, this study employed a qualitative research design. Fieldwork was conducted between December 2024 and March 2025, utilizing three complementary data collection tools to ensure methodological cross-validation. First, cognitive mapping was utilized to elicit explicit representational data regarding the residents’ subjective spatial perceptions. Respondents were asked to draw cognitive maps of their community and complete a basic demographic profile sheet. Secondly, semi-structured interviews were conducted to capture deeper phenomenological narratives. Participants were recruited utilizing a combination of purposive and snowball sampling strategies, with priority given to those who provided valid cognitive maps to ensure a robust baseline of spatial familiarity. Finally, participant observation was conducted to systematically document residents’ daily spatial practices and behavioral trajectories within the public spaces of the Italian-style blocks. This observational data was supplemented by photographic and videographic documentation to accurately capture the embodied interactions between the inhabitants and their built environment.

4. FINDINGS AND DISCUSSION

4.1. Cognitive Mapping Results

A total of 30 cognitive mapping questionnaires were distributed during the field survey, of which 23 were deemed valid. Through systematic coding, interpretation, and analysis, residents’ cognitive and affective maps were categorized according to their dominant spatial elements (Figure 4). Drawing on *The Image of the City*, these elements can be interpreted in terms of paths, nodes, landmarks, districts, and edges, revealing how everyday spatial experience structures urban perception.

Cognitive and affective maps drawn by residents from different spatial contexts in Pujiang New Town exhibit notable variation, reflecting their distinct daily routines. For instance, a female office worker employed in Zhangjiang Hi-Tech Park indicated that the only spaces of significance in her daily life were her residence, the metro station, and a nearby KFC. Constrained by a “three-point linear routine,” she has limited experiential knowledge of other parts of the town. In contrast, in the relocation housing community, retired elderly residents tend to focus on internal neighborhood activities. Their maps prominently depict social scenes such as card-playing groups and community-organized fashion teams, indicating a higher frequency of intra-neighborhood engagement. By comparison, younger residents devote greater attention to facilities located

outside the neighborhood, particularly commercial and service-oriented destinations.

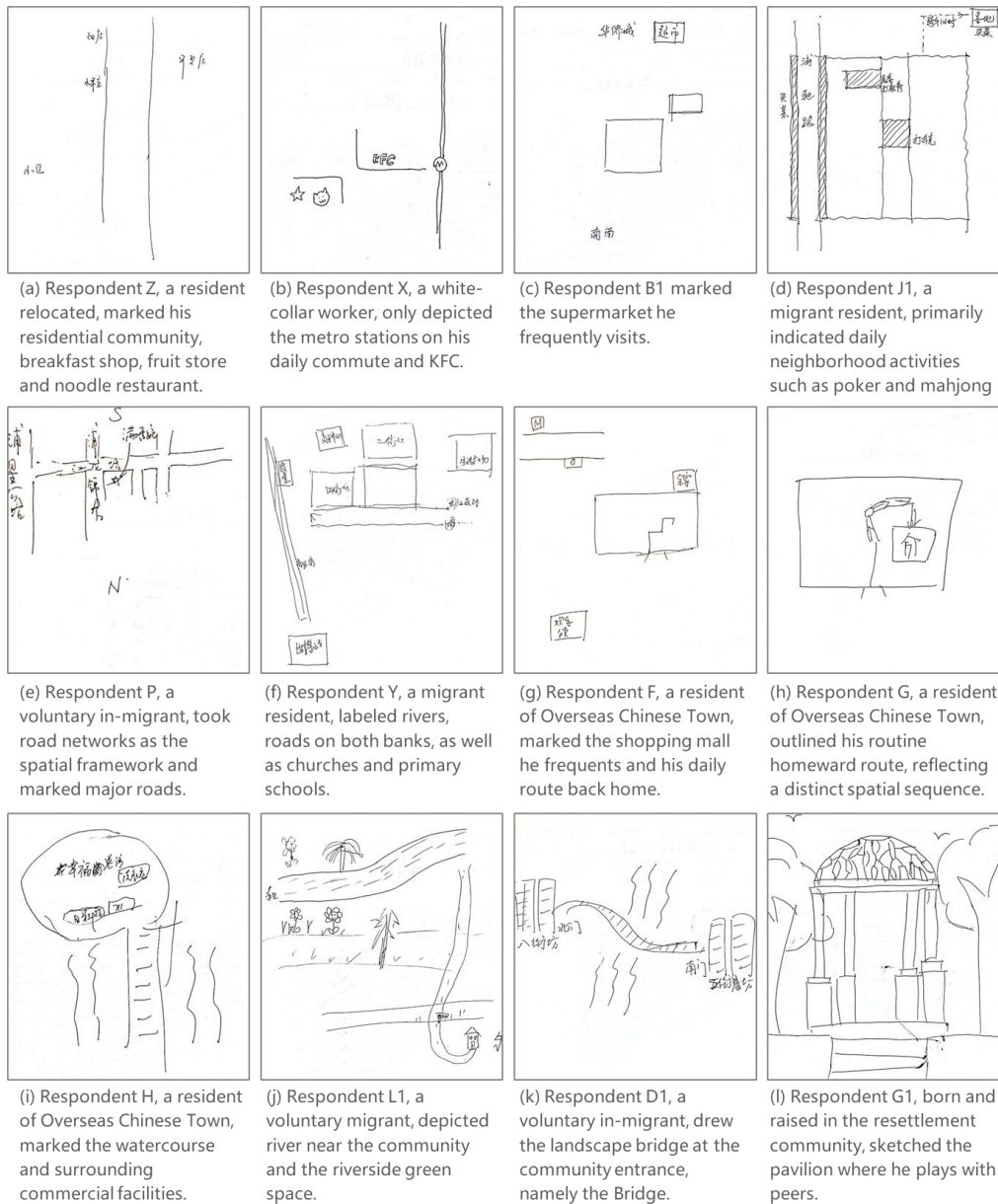


Figure 4: The cognitive mapping by respondents in Pujiang New Town. (Source: Arranged by author).

The results suggest that residents' perceptions of Pujiang New Town are largely concentrated within their routine activity spaces and closely aligned with their daily mobility patterns. Beyond their primary residential areas, however, residents are able to recall only a limited number of locations—primarily commercial complexes and urban green spaces—while demonstrating relatively weak awareness of other urban elements. Notably, residents' perceptions of Pujiang New Town reveal little distinction between local and imported

design influences. Very few respondents explicitly referenced the town's connection to Italian planning precedents, and some later arrivals were entirely unaware of this historical background.

4.2. Continuities and Divergences from Planning Intentions

4.2.1. The invisibility of the road network in daily experience

The road layout of Pujiang New Town is predicated on orthogonal intersections that divide the entire district into a systematic 300x300-meter grid. Functioning as the city's structural skeleton, this system connects to Shanghai's primary thoroughfares through five distinct entrances while interfacing seamlessly with two riverside roads via symmetrical geometric logic. In his project reports, Vittorio Gregotti justified this gridiron pattern by noting that "standard Chinese cities have adopted this layout since long history," suggesting that the grid is not a purely Western imposition but possesses deep-seated links to indigenous culture. Furthermore, the grid respects the pre-existing east-west orientation of local roads and water networks, achieving a structural harmony between artificial intervention and the natural ecological grain. From a planning perspective, the implementation of the grid was not an arbitrary exercise on a "blank slate" but was informed by historical and environmental contexts (Figure 5).

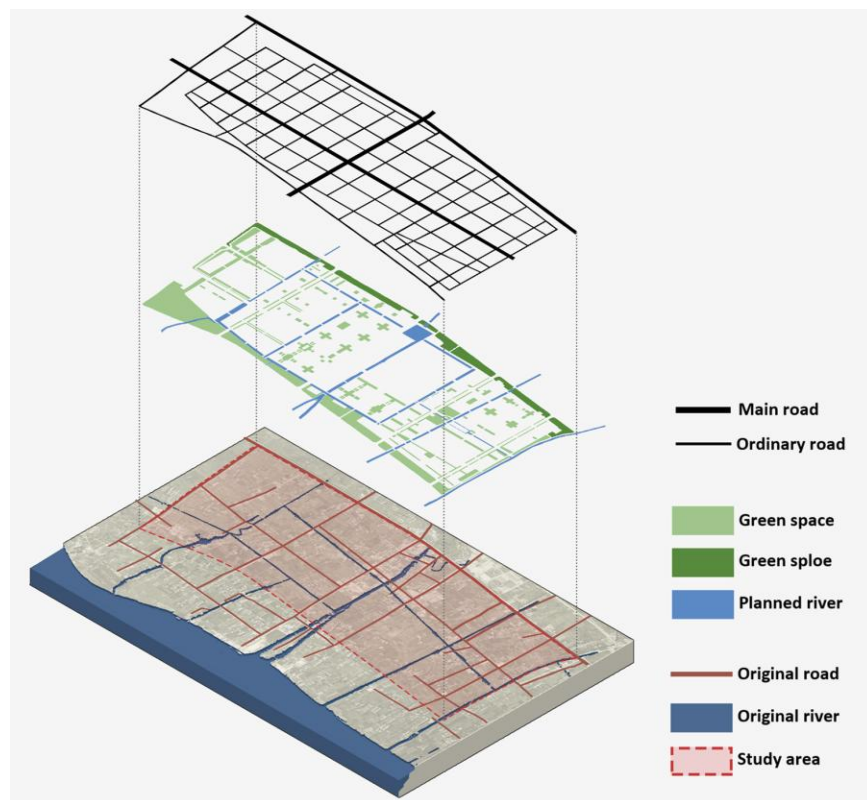


Figure 5: Analysis of planned road grid system of Pujiang New Town. (Source: Arranged by author).

However, the cognitive maps drawn by residents reveal that this grid system is almost entirely absent from their mental geography. Most residents depicted spatial structures as linear or fishbone patterns; while they recognized intersecting roads, these were perceived as individual paths rather than parts of a systematic grid. This discrepancy indicates that the topological relationships established at the planning level do not translate into intuitive lived experiences, proving that physical spatial design cannot be directly equated with human cognitive mapping. The cognitive distances reflected in these resident maps are primarily defined by walking-scale activity spaces. Another category of mental maps focuses on personally significant landmarks, where spatial structural features remain relatively blurred. In these instances, natural and architectural elements—such as riverside canals, uniquely designed landscape bridges, and frequently used neighborhood pavilions—occupy the visual center of the imagery. This phenomenon validates the theory of urban imageability, where the perceived identity of a place is anchored in the inhabitant's experiential connection to prominent physical markers.

4.2.2. The transition of public space in residential communities

Regarding spatial morphology, Gregotti's design team drew inspiration from Italian carpet patterns and conducted extensive typological research. While maintaining the central cross-axis as an open space model, they developed various structural variants tailored to the specificities of different plots (Figure 6). For instance, if a street corner required community retail, a minimum spatial unit could be opened up to accommodate it. These diverse spatial configurations encompassed urban plazas, internal courtyards, waterscape squares, waterfront commercial promenades, and street-side green spaces. The appropriate layout of various architectural styles and functions within this area generated an array of unique spaces, enriching the overall urban experience of the new town.

Taking a residential community within the new town as a case study, the spatial “grayscale” diagram of the plot clearly illustrates the spatial division generated by the cross-axis, which facilitates a structured transition from open space to public, semi-public, semi-private, and ultimately private domains. For residents entering on foot through the main east-west gates, the sequence of movement begins by traversing a large green space. They then turn onto a smaller pathway, pass through the cluster's porch, and enter a semi-private “branch alley” (zhilong), finally reaching their individual residential units via an entryway path formed by a recessed courtyard (Figure 7).

In the cognitive mapping exercise, community frontages and surrounding peripheral roads—especially those leading to external exits—emerged as the most frequently depicted elements, appearing in over 80% of the total sample. Despite the fact that most residents could not accurately recall the names of these thoroughfares, they consistently emphasized the specific route taken from public neighborhood spaces into

their private residences. This underscores a strong cognitive connection to the “homing” path, which navigates the transition from public to private realms. Consequently, the residents’ perception of a “sense of place” is continuous rather than fragmented. Each transitional “gray zone” facilitates the folding and reorganization of spatio-temporal experiences, allowing the sense of place to maintain a root-like continuity. Notably, many spontaneous activities within the community occur within these transitional zones between different degrees of public space. Acting through a unique spatial syntax, these “transitional spaces” with blurred boundaries actively reconstruct the texture of community life, enabling localized identity to continuously generate new possibilities within a fluid spatial continuum.

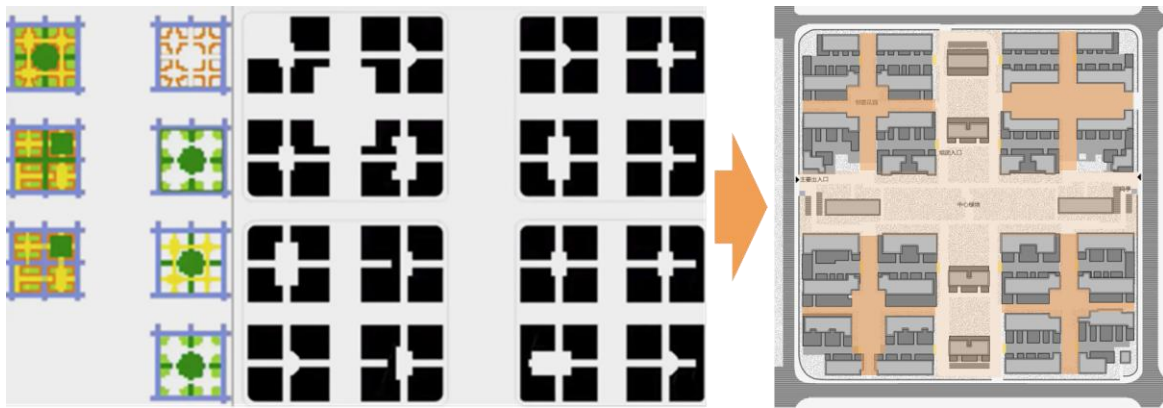


Figure 6: Analysis of residential cluster spatial types and built-up plans. (Source: Arranged by author).



Figure 7: Transitional space sequence of residential clusters. (Source: Author).

4.2.3. Visual relationships in street space

In the southern area of Pujiang Expo Garden, the design team incorporated a comprehensive range of commercial and residential service facilities from the outset, based on anticipated everyday life scenarios. A distinctive commercial street was developed along Puchi Road, introducing long-established shops from the former Luwan and Huangpu districts where the residents once lived. Importantly, the arcades are limited to a single story, while residential buildings within the plots are set back from the street. This configuration

produces a relatively generous height-to-width ratio, shaping a street section characterized by a low degree of enclosure. By preventing direct visual exposure to the residential buildings, the design maintains a sense of openness and avoids spatial compression. In this sense, the street achieves a carefully moderated enclosure condition, balancing spatial definition with visual comfort.

The arcade corridors accommodate a variety of small-scale retail spaces, effectively meeting residents' daily needs. These units are typically open-fronted, with rolled-up shutters or transparent glass interfaces. Although they lack elaborately designed display windows, they exhibit a high degree of spatial permeability across visual, auditory, and olfactory dimensions. Such permeability allows the boundary between interior and exterior to remain fluid, enabling everyday commercial activities to extend into the public realm and enhancing the street's sensory richness. From the perspective of interface conditions, the arcade typology plays a crucial mediating role between private commercial interiors and public pedestrian space. Through the integration of architectural elements such as traditional-style facades and plane-tree-lined streets, the design further reinforces a recognizable urban character, aiming to sustain a sense of place for relocated residents familiar with central Shanghai (Figure 8).

Survey results indicate that, despite significant differences from Huaihai Middle Road—the former commercial center associated with residents' prior urban experience—in terms of retail quality, architectural refinement, and cultural atmosphere, overall satisfaction with Puchi Road remains high. Most residents prioritize convenient access to everyday necessities such as fresh produce and household goods, rather than higher-end consumption or symbolic urban experiences. Consequently, Puchi Road has effectively replaced Huaihai Middle Road as the primary consumption base and everyday service hub in residents' new lives, continuing to provide a comparable sense of comfort and satisfaction. Functional commercial spaces serve as key activity nodes within daily routines. In cognitive maps, most respondents were able to identify the approximate locations of frequently visited places—such as breakfast shops or local markets—and accurately recall their names, underscoring the role of these spaces as anchors of everyday spatial practice.



Figure 8: Puchi Road street scene. (Source: Author).

4.2.4 The creative appropriation of space

During field investigations, numerous instances were observed where residents actively modified the planned architectural elements, demonstrating a form of vernacular agency. Minimalist structural frames were transformed into neoclassical Athenian columns and curved arcade structures. Colored plastic barriers were added to landscape pavilions, effectively privatizing European-style publicness into a semi-private domain characteristic of “acquaintance societies.” Furthermore, traditional City God Temple lintels were grafted onto modern residential gates, representing a symbolic reterritorialization of space (Figure 9).



Figure 9: Residents' views on the renovation of the original building (Source: Author).

The most prominent example of this creative appropriation is the 5-kilometer-long landscape green slope located at the town's periphery. Originally conceived as a metaphorical “city wall” and a functional noise buffer against the adjacent expressway, this space has become a site of mutual fulfillment between the designer's intent and the residents' spontaneous practices. Inspired by the fortified townscapes of Italy, the design translates stone masonry into artificial topography: a 7-meter slope which, when topped with 10-meter trees, creates a 17-meter “green wall”. As an iconic element of Pujiang New Town, it has successfully reshaped spatial cognition and provided residents with a renewed sense of spatial belonging.

While official promotional platforms in Minhang and Pujin often depict the green slope as a mere “open vacancy,” it has evolved into one of the town's most vibrant social locales. During favorable weather, families and youth from the surrounding areas gather for camping, walking, and leisure. Unlike densely wooded parks,

the expansive openness of the slope facilitates activities such as dog walking, allowing pets to run freely. The three entrances near the slope's ends have consolidated into concentrated social hubs, characterized by dense clusters of camping tents. The unique topography of the slope has catalyzed novel spatial practices: individuals recline on the incline for midday rest, children roll from the peak to the base, and residents engage in a rich diversity of informal activities, including outdoor cooking, kite-flying, and Mahjong (Fig.10). The relative lack of stringent regulation permits a high degree of social flexibility, inviting friends from other districts of Shanghai and fostering inter-familial socialization. Paradoxically, while traditional city walls served as exclusionary boundaries, Pujiang's "green wall" has transformed into a central node of urban vitality.

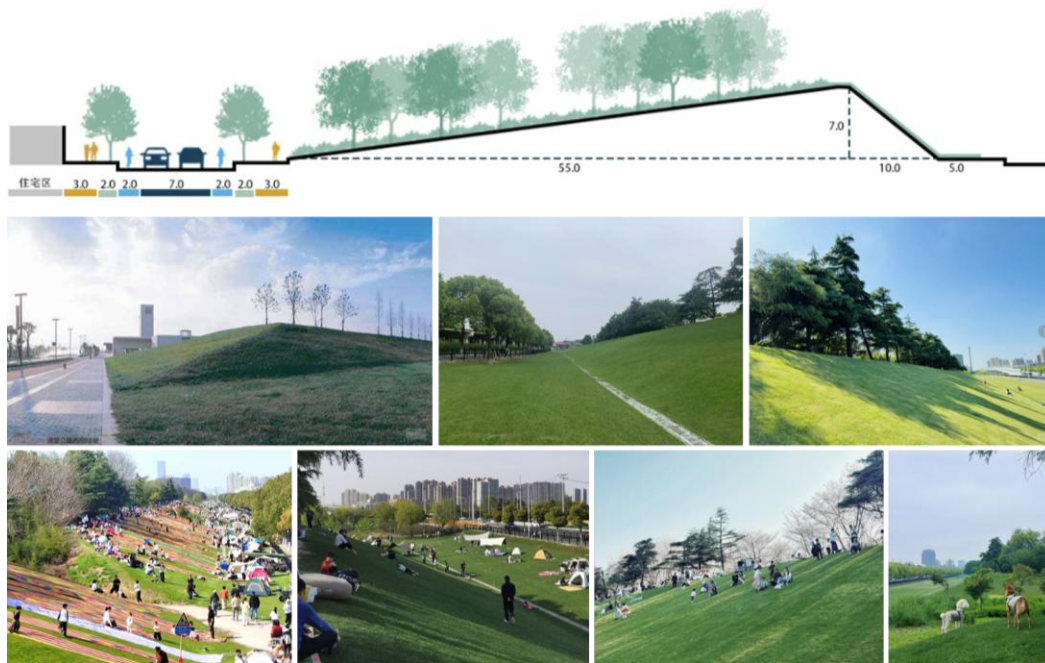


Figure 10: A variety of activities on and off the green slope. (Source: Author).

4.3. Reflections on Design in Pujiang New Town

4.3.1. The dynamic formation of sense of place

The formation of a "sense of place" in Pujiang New Town hinges upon the intricate interactions between space, activity, and meaning; transforming a mere physical vacuum into a meaningful "place" is, above all, a process of "deep experience". The case of Pujiang New Town demonstrates that a sense of place is not a direct byproduct of urban design, but rather a dynamic process constituted by the continuous negotiation, transformation, and reconstruction performed by residents in their daily practices. Consequently, shifts in the perception of place are not necessarily regrettable, nor do they always require the long durations associated

with natural evolution; rather, they are deeply rooted in the “autobiographies” of the residents’ own lives.

Yi-Fu Tuan conceptualized “rootedness” as a state of being “at home” in an unconscious manner, formed through long-term residency—a theoretical cornerstone for traditional studies on place attachment. However, many scholars overlook Tuan’s critical caveat: when people are truly rooted, the sense of place built day by day through trivial events often remains hidden within a blurred, generalized understanding of routine and time. It is often only when this feeling becomes intense—or when one is detached from the environment—that the place and its surroundings emerge clearly as carriers and symbols of emotional events. This suggests that a sense of place can be both a slow accumulation and a sudden epiphany, yet its essence remains anchored in the myriad of unconscious interactions with the spatial environment throughout one’s past.

This encourages a deeper reflection on the meaning of “place” in modern life. To understand the contemporary concept of place, one must synthesize both objective and subjective realities. From the “decentered” perspective of the theoretical scientist, place is viewed as a location or a set of relations, where uniqueness is reduced to limited definitions, thereby weakening its importance to human behavior. Conversely, from the “centered” perspective of individual subjectivity, place only acquires meaning through its connection to the goals and concerns of individuals or groups. As active agents, we must strive to understand place through both lenses within the broader context of space and time.

4.3.2 The prototype behind transnational style

In the architectural practice of Pujiang New Town, a sharp dialectical relationship exists between the surface features of architectural style and the underlying prototypes of daily life. Although Vittorio Gregotti utilized a modernist architectural vocabulary to dissolve the explicit symbolic expression of Italian prototypes, his typological reorganization of “lilong” (lane-house) spatial genetics reveals the true essence of constructing a living environment. What truly carries the sense of place is not the replication of an architectural style, but the organization of space and the lived experience of daily life. This focus on daily needs allowed Pujiang’s “style-less” physical substrate to escape the trap of superficial symbolic transplantation, fostering an authentic sense of place.

This research also provides fresh insights into the role of residential density in urban design. Generally, “real density” is measured by objective physical metrics such as building or population density. However, “perceived density”—a concept pioneered by Amos Rapoport—is defined as an individual’s estimation and feeling regarding the number of people present, available space, and the organizational structure within a given area. The perception of density is a holistic experience of diverse environmental cues; for instance, “crowding” is a negative psychological state resulting from excessively high perceived density.

Nevertheless, even in high-density physical environments, strong place attachment can emerge through social interaction. Despite the compact layouts and high building density of lilong communities, the long-term social networks and sense of belonging developed by residents transform these spaces into something familiar and intimate rather than oppressive. This proves that a sense of place is the decisive factor in how space is truly experienced. While the formation of place is related to density and construction intensity, it is not a simple causal relationship. Therefore, urban design should not treat density or Floor Area Ratio (FAR) as an end in itself through purely mathematical calculations, but should prioritize the interactive relationship between people and space.

4.3.3. Globalized thematic replication and authenticity

Reflecting on the transnational movement of thematic style replication, the use of specific “foreign” styles may be an inevitable (though perhaps not ideal) response to the efficiency-driven construction demands of globalization, where a lack of distinct identifiability has become a global phenomenon. As Italo Calvino described in *Invisible Cities*, “the world is covered by a single Trude which does not begin and does not end”. From this perspective, thematic attempts seek to manufacture a “sense of place,” yet they often overemphasize the purely spatial dimension. The result is a series of visually striking images that act as mere stimuli or “bonsai” landscapes, where people experience a representation rather than the place itself.

In urban planning, the simplistic copying of Western architectural motifs has long been criticized. However, as the “exotic” filters fade and we return to a demand for authentic texture, the logic of cultural appropriation is quietly reversing. Take Daikanyama in Tokyo as an example: by following the aesthetic preferences of individual landowners and rejecting homogenized chains in favor of curated French restaurants and unique boutiques, the area has injected distinct “memory points” into the urban fabric. It is these heartfelt individual choices, rather than standardized stylistic regulations, that forge a true sense of place.

In the wave of globalization, “place” and “placelessness” exist in a delicate, dynamic equilibrium. At one extreme, “placeness” dominates specific sites like the Acropolis or a mosque, while “placelessness” is minimal. At the other extreme, in environments emphasizing utility like airports or subways, standardization prevails and uniqueness is diminished. Both extremes possess inherent risks and advantages: excessive “placeness” can lead to insularity and conservatism, while extreme “placelessness” induces anxiety through homogeneity. The most compelling reality is the dynamic tension between the two; these cross-regional “image graftings” are constructing a new global sense of place that accurately reflects the hybridized essence of the contemporary city.

5. CONCLUSION

Pujiang New Town serves as a quintessential case study, elucidating a potential trajectory for urban design in the cultivation of a “global sense of place”. The town’s design successfully synthesizes the spatial genetics of traditional Shanghai lilong through a modern architectural lexicon, while simultaneously integrating references to Italian urban prototypes. On one hand, the spatial logic employs Neo-Rationalism to translate indigenous patterns; on the other, the replication of thematic aesthetics and the impact of temporal mobility highlight the complex evolution of Shanghai’s regional identity within a globalized context.

Notably, Vittorio Gregotti’s design avoids the imitation of specific historical styles, opting instead to strip away the misleading semiotics often associated with “place”. This approach facilitates a deeper understanding of the intrinsic value of spatial elements—for while space is frequently categorized as a “symbol” or “type,” the formation of a sense of place is not contingent upon these symbols. Rather, it is the emergent sense of place that imbues specific locations with their unique, irreplaceable character.

Urban design, therefore, should prioritize the construction of progressive spatial sequences, utilizing dynamic transitions between public and private domains to facilitate a continuous spatial experience. Through the repetition of daily trajectories, street design is metabolized into embodied memory, allowing the sense of place to transcend superficial formal replication and achieve a creative synthesis of the global and the local. Future new town developments must pivot from quantitative spatial expansion toward the qualitative cultivation of place-identity. By integrating local culture, optimizing the public realm, and fostering community interaction, planners can create habitable environments defined by genuine belonging and recognition. Such a shift not only enhances the attractiveness of new towns but also provides a robust framework for sustainable urban development.

NOTES AND REFERENCES

1. David, Harvey. *The condition of postmodernity: an enquiry into the origins of cultural change*. United Kingdom: Blackwell, 1989.
2. Manuel, Castells. *The Rise of the Network Society*. United Kingdom: Wiley, 2010.
3. Wilkie R W. "Sense of place and selected conceptual approaches to place." *Journal of the American Institute of Architecture Students* (2003), 55: 29-31.
4. Beidler K J, Morrison J M. "Sense of place: inquiry and application." *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* (2016), 9(3): 205-15.

5. Shanghai Municipal People's Government, "Circular on Issuing the Pilot Opinions on Promoting Town Development in Shanghai", January 5, 2001.
6. Yi-Fu, Tuan. *Topophilia: A Study of Environmental Perception, Attitudes, and Values*. Prentice-Hall, 1974.
7. Relph, Edward. *Place and Placelessness*. London: Pion, 1976
8. Hannam K, Sheller M, Urry J. Editorial: Mobilities, Immobilities and Moorings. *Mobilities* (2006), 1(1): 1-22.
9. Gustafson P. Place attachment in an age of mobility. *Place attachment: Advances in theory, methods and applications* (2014), 37-48.
10. Jackson, John Brinckerhoff. *A Sense of Place, a Sense of Time*. New Haven: Yale University Press, 1994.
11. Ingold T. *The perception of the environment: essays on livelihood, dwelling and skill*. routledge, 2021.
12. Gustafson P. More Cosmopolitan, No Less Local: The orientations of international travellers. *European Societies* (2009), 11(1): 25-47.
13. Chu, Han, Xie Dixiang, and Chang Jiang. "A study on the relationship between local development changes and residents' sense of place: A case study of Lizhiwan Creek historic and cultural block in Guangzhou ". *Human Geography* 34, no. 4 (2019): 54–62, 72.
14. Laclau, Ernesto. *New Reflections on the Revolution of Our Time*. London: Verso, 1990.
15. Doreen, Massey. "A Global Sense of Place." In *Space, Place, and Gender*, 146–56. Minneapolis: University of Minnesota Press, 1994.
16. Xia, Liqing. *Future Urban Boundaries: Selected Works from Shanghai Urban Planning International Design Competitions (1999–2002)*. Shanghai Municipal Bureau of Urban Planning and Management, 2003.
17. Everywhere M. *Mental Maps*. 2017. <http://mapseverywhere.net/2017/06/28/mental-maps/>.



TRANSLATING INFRASTRUCTURE, MOBILITY, AND URBAN LANDSCAPES

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