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SOUTHEAST ASIAN URBANISMS SEMINAR 2.0

CULTURES IN TRANSITION: *URBANISM AND LANDSCAPES IN SOUTHEAST ASIA*

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Southeast Asian Urbanism Seminar 2.0

**“Cultures in Transition:
Urbanism and Landscapes in Southeast Asia”**

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INTERNATIONAL CONFERENCE PROCEEDINGS OF SOUTHEAST ASIAN URBANISM SEMINAR 2.0 “CULTURES IN TRANSITION: URBANISM AND LANDSCAPES IN SOUTHEAST ASIA”

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Foreword

The Southeast Asian Urbanisms (SEAUS) Seminar 2025, hosted by Universitas Atma Jaya Yogyakarta, brought together scholars and practitioners to explore the conference theme “Cultures in Transition: Urbanism and Landscape in Southeast Asia.” This volume presents twelve papers that collectively illuminate the dynamic interplay between cultural heritage, urban development, and environmental adaptation across the region’s diverse landscapes. Southeast Asia’s cities—deeply shaped by colonial legacies, vernacular traditions, migration flows, and rapid modernization—face complex challenges requiring nuanced design, planning, and policy responses.

The proceedings open with research that frames urban transformation through resilience and social practice. Ramos’ analysis of urban agility and ephemeral design in post-Typhoon Haiyan cities proposes adaptive spatial strategies to address climate risks, while Tauran and colleagues critically reframe gotong-royong in Indonesian kampungs, revealing its transformative potential when supported by equitable governance. Papers on spatial planning and regulatory frameworks highlight the tension between cultural values and modernization, demonstrating the importance of inclusive, cross-sectoral approaches.

Historical and cultural perspectives are explored through studies of Spanish colonial planning traditions in Intramuros, Manila, and reinterpretations of Dutch East India Company military heritage, which underscore colonial-era legacies as essential lenses for understanding present-day urban forms. Complementing these are case studies on tourism villages and cultural landscapes, such as the Kemesu Valley, which emphasize community-led design as a tool for sustainable economic development.

Several contributions examine traditional ecological knowledge and vernacular architecture as foundations for future-oriented urban strategies. Investigations into Borneo’s stilted water villages, Balinese passive cooling systems, and locally sourced materials illustrate pathways for culturally grounded sustainability. Papers on urban morphology and streetscapes, including Surakarta’s Chinatown corridors and Yogyakarta’s Mataram canal, demonstrate how memory, identity, and physical form intersect in shaping public spaces.

Finally, research addressing heritage conservation amidst urban growth—such as the study of Malioboro Street’s evolving significance—reveals the urgency of balancing

development with intangible cultural value. Collectively, these papers illustrate a holistic vision of Southeast Asian urbanism: cities as living palimpsests where tradition and innovation continually negotiate space.

This compilation highlights Southeast Asia's urban landscapes as laboratories of cultural resilience and creativity. By bridging history and contemporary design practice, these studies provide valuable insight for architects, planners, and policymakers seeking equitable, climate-adaptive, and culturally attuned futures.

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Catharina Dwi Astuti Depari, Ph.D.

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URBAN RESILIENCE AND THE EPHEMERAL DIMENSION OF SOUTHEAST ASIAN CITIES

Grace C. Ramos

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Abstract

Changes in the built form of three Typhoon Haiyan-affected urban settings were observed to find out how the concept of risk resilience has been interpreted in spatial terms. The three case studies were presumed to have evolved over the last ten years since the onset of Typhoon Haiyan, which caused significant loss of lives, property and livelihood. The Cities of Ormoc and Tacloban and Municipality of Tacloban were subjects of post-disaster recovery and development plans which were implemented through local and foreign funds. Set within dynamic Philippine and Southeast Asian contexts, these places were expected to have followed build-back-better principles. Given that predicted occurrence of more extreme events in the future due to climate change and global warming, cities need to be agile to thrive in the face of uncertainties. With climate change effects overlain by other change instigators such as globalization, urbanization, technology development, the three case sites were assessed vis-à-vis urban agility indicators. The agility index of a city is based on how physical, technological, social, and institutional frameworks will allow the built form to reconfigure. The observations brought to fore gaps that may be addressed by enhanced application of ephemeral space concepts. Innovative spatial features characterized by transience, flexibility, multi-use, smart and digital, will better enable cities to adapt and survive through inevitable shifts in the physical and socio-economic contexts.

Keywords

Urban Spaces, Urban Agility, Disaster Management

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Rationale

Radically changing city planning contexts call for space perception paradigm shifts that could usher in new urban design concepts. The loss of lives, property, and livelihood recorded as climate change effects continue to define our present and future reality compel the formulation of measures that are underlain by new people-space dialogues. The aftermaths of extreme weather conditions indicate that the usual adaptation strategies which are supported by current institutional frameworks are no longer adequate. Our design regulation systems that aim at life safety and well-being are laden with prescriptions that are based on the conventional notion of safe spaces. The concept of safe spaces has traditionally been translated into rigid enclosures that project strength, stability, and protection. People seek permanent structures and formally delineated territories to convey identity, pride, and social status. Space production amid dynamic physical and social contexts represents the paradox that results in planning interventions that account for risk vulnerability. Agility and flexibility have been the buzz words in recent years after the experiences

wrought by disasters due to natural and human-induced factors. However, our city formation continues to express itself in dense, massive, and impermeable built and designed environments.

Research Inquiry and Methodology

This research sought to answer the question, “How do the spatial interpretations of resilience in ephemeral settings accord with urban agility concepts?” Spatial interpretations were drawn from the observed urban form changes over ten years in three Typhoon Haiyan affected localities in Leyte, Philippines. These localities are the cities of Ormoc and Tacloban and the Municipality of Palo, all of which ran along the path of Haiyan, and thus, registered high casualties and property losses (NDRRMC, 2013). The observed spatial translations are then compared with the general physical characterization of ephemeral settings. The gaps between these two space typologies were assessed in relation to the indicators of urban agility. The assessment led to baselines for space production innovation based on agility indices.

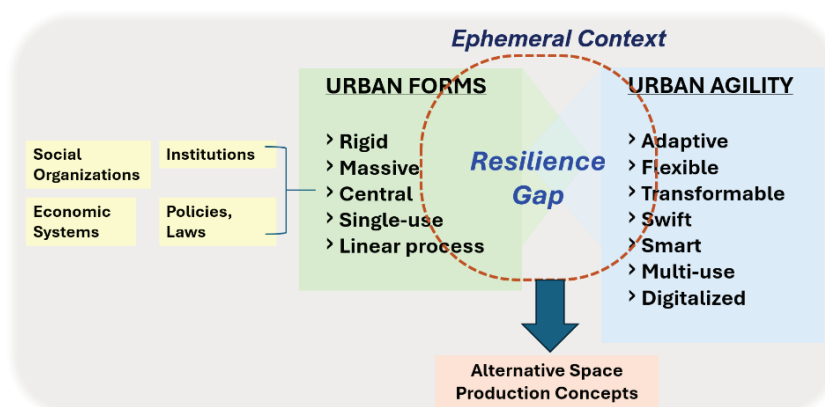
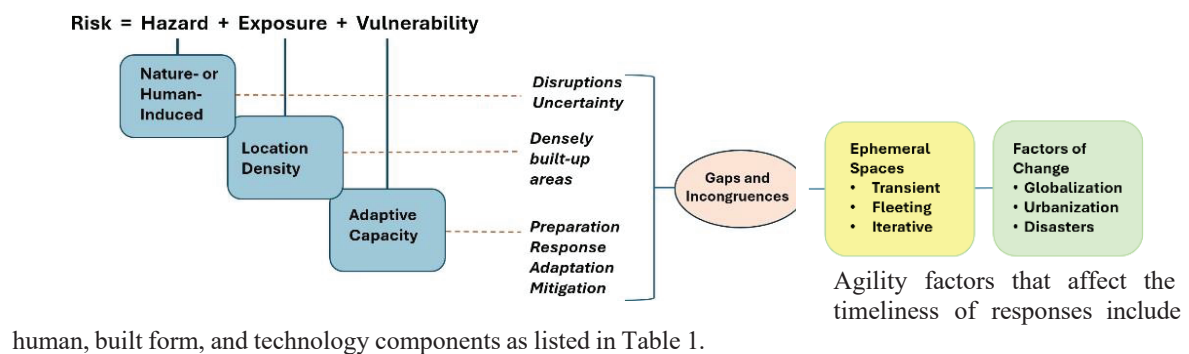


Fig.1. Research Model
Elaborated by the author

The research model which is represented by fig. 1 is anchored on the theories on disaster risk resilience, ephemeral spaces, and urban agility. In fig 2, the risk equation, Risk= Hazard + Exposure + Vulnerability, provides the basis for relating risk with urbanization factors that increase exposure as population and building densities increase (Viner, et,al, 2020). The agglomeration of related activities is explained by efficiency goals that result in the concentration of people and capital. Mobility and other disaster response enablers are dependent on infrastructure and services that may be limited because of resource availability

issues. Globalization, urbanization, and technology development are processes that account for fast-paced changes that are all embedded in international value chain networks. Socio-economic-induced changes are overlain by disruptions due to nature- and human-induced disasters. Disruptions cause varying degrees of breakdowns in the multi-layered networks of urban settings. With individual or concerted local and national interventions, networks are either restored or improved. The oftentimes short window for bringing in well thought-out interventions requires very timely responses.



human, built form, and technology components as listed in Table 1.

Fig.2. Theoretical Model
Elaborated by the author

Table 1- Urban Agility Indicators

URBAN AGILITY INDICATORS	BASES/SOURCES
ARCHITECTURE The designed and built spaces are created in constant vetting against the city's mission. As such, they are continuously evolving and restructuring within a dynamic context. A systemic or holistic design process will enable architecture to adapt to changing circumstances. Spaces created must be diversified, replicable, and unified at the same time.	Lankhorst, M., Proper, H., 2012.
INNOVATION Creativity in interventions is instigated when the designer goes beyond restoring broken links in the functioning system. Innovative outcomes are those that go beyond the 'business as usual' target.	Francis, D., Woodcock, M. 2023; Lankhorst, M., Proper, H., 2012.

TECHNOLOGY Access to information through communication technology, automation, use of smart or intelligent systems will enable urban settings to reconfigure fast as the context changes. These systems must be connected and interoperable for necessary interfaces. Data-driven decision-making improves inclusivity and relevance of responses. Urban digitalization allows simulation and testing of policies and other interventions.	World Economic Forum, 2018; Anwar, S., Elshater, A., Afifi, S., Ismail, A., Ghalib, H., 2025.
ENVIRONMENT Buildings, utility systems, and other infrastructure systems should aim for net-zero or positive energy utilization. New governance systems and designed spaces may optimize resource consumption. Green technologies, environmentally friendly building design, use of recycled materials, account for non-invasive intervention geared at minimizing carbon footprint and environmental impacts. Symbiotic relationships between cities may be strengthen regional cooperation for climate resilience. Innovative design concepts such as floating cities, ecology-sensitive delta and water body development may be explored as alternatives to existing built forms.	World Economic Forum, 2018; Anwar, S., Elshater, A., Afifi, S., Ismail, A., Ghalib, H., 2025; Zanganeh, A. , Talkhabi, H. , Abaszadeh, M., Mahabadipour, M., 2024; James Russel, 2012; De Graaf, R., 2012.
PUBLIC SPACES The public realm, community spaces, which may be used on regular days or during disaster situations must be accessible to the to public. These spaces include roads, sidewalks, parks and open areas.	UN Habitat, 2022
SERVICES Basic services must be in place and functional even during disaster situations. Communication and public transportation systems must allow connectivity and mobility for socio-economic resilience.	Russel, J., 2012; DeMordaunt, J.T.. 2022; Laski, J., 2022.
LAND USE Flexible land uses enable cities to respond to emergent conditions. Multi-land uses allow a diverse range of activities that account for vibrance and robustness. Flexibility in land uses consider changing needs and technological innovations that would call for various activity options.	World Economic Forum; Scruggs, G., 2018.
FINANCE As creativity in design is encouraged, innovations in real estate financing must also be promoted. This means going beyond the traditional modes of access and ensuring security of loans.	Russel, J., 2012.

INFORMAL “Tactical Urbanism” may complement the formal activities in the city. This type of urbanism refers to the presence of informal cultural and physical interventions in the urban form. Minimized public sector intervention allows actions initiated from a broader population set and makes the outcomes of the efforts more accessible. Tactical urbanism may translate to urban spaces that function as a temporary solution but have long-term impacts on the constituents and the environment.	Al-Betawi, Y. N., 2024.
SOCIAL INCLUSIVITY Community engagement promotes inclusive growth. The vulnerable and marginalized can be given access to information and decision-making processes.	Anwar, S., Elshater, A., Afifi, S., Ismail, A., Ghalib, H., 2025.
PEOPLE-MACHINE-ENVIRONMENT Symbiotic systems between humans and the built form may be enabled through technological innovations. Symbiotic intelligence allows human-sensitive and systemic approaches that consider ecologies. Real-time feedback systems enabled by these approaches bring into the loop humans as references for decision-making.	Chen, X., Hu, W., Yu, J., Wang, D., Yao, S., Lin, Y., Wang, F.Y., 2023; Munro, G., 2015.
INCREMENTAL The “Kinetic city model” factors in dynamism that allows making changes as needed. Self-built, participatory, phased, and incremental building enables the built form to reconfigure as the city adapts to changing contexts.	Dimitrijevic, B., 2019.
ITERATIVE Breaking down projects into iterative phases is an alternative to the linear process. A more diverse range of development and creative paths lead to a greater array of outcomes and possibilities. Exploring many options through evaluation and optimization processes may be done with digital systems. Urban transformation projects and performance-based generative design accounts for relevant and responsive interventions.	Yehorchenkova, N, Yehorchenkov, O., 2024, Wu, Z., Liu, W., Cheng, J.C.P., Wang, Z., Kwok, H.H.L., Huang, C., Hou, F., 2025.
GOVERNANCE Urban clusters as governance units enhance regional collaboration and cooperative action.	Mengai, D., Yin, Y., 2023.

Ephemeral Spaces and their References

The ephemeral nature of urban contexts calls for built forms that can easily adapt to forecasted and unexpected events. The permanent and often irreversible impacts of the soft and hard forms of public intervention should set off the search for new space concepts that can reconfigure fast enough as their contexts change. The city's physical and social environments are in constant motion due to the confluence of dynamic variables. The changing geographic forms, the changing seasons, unpredicted events, shifting relational and power networks, and life cycles are among the many variables that define human life settings. The dominant preference for permanence and certainty has manifested in our notions of permanent address, property ownership, livelihood bases and administrative boundaries. However, the property and life losses resulting from the traditional congruences between people, activities and space have been recorded in the last three decades as climate change effects took their toll on cities. Fishing communities belonging to the waterfront areas, mining communities paired with the highlands, and farmers situated in fertile lands around volcanoes have long been considered as the norm. The sense of security derived from document-based territoriality has had devastating consequences in the past. Evacuating to other places becomes a sudden and last resort type of reaction during disaster situations. Temporarily staying in places that were not designed as living spaces

has been the typical recourse even as we go through cyclical patterns of natural occurrences such as typhoons (Ramos, 2025).

Ephemeral spaces and design concepts that cater to variables in motion have been in existence for many years and are, therefore, not entirely new. Ephemeral Architecture expressed in examples such as exposition pavilions are meant to be used or seen for a limited time (Coar, 2011). Fleeting urban spaces such as flea markets, street activities, and park concerts have defined urban settings that are referred to as vibrant. Various typologies of transient spaces that cater to different lengths of stay include rental housing, hotels and events venues. Examples of time-shared spaces include resorts and factory workers' housing. Mobile spaces include recreational vehicles for residential use and service vans for commercial use. Transformable architecture accommodates different functions at different time periods through operable components. In the age of digitalization, virtual outdoor spaces were created through the laser beam and drone technologies. These are just some of the design concepts that consider the temporal attributes of spaces and the activities they accommodate. These concepts offer opportunities for conceiving innovative spaces that are designed for changes, movement and adaptation (Ramos, 2025).

The culture of transience and mobility in Philippine society is deeply ingrained and continue to influence the way Filipinos create spaces. The physical manifestations of this culture may be traced back to the

pre-colonial *barangays* that were houses and boats at the same time (Jocano, 1998). The coastal areas in 16th century Cebu hosted formal rituals between the local ruler and foreign merchants to signify the start of trading in the temporary market area (Orillaneda, 2016). The Datu's house was designed to be a private dwelling that can be transformed into a public meeting place (Scott, 2004). In the more recent years, the movement of Overseas Filipino Workers instigates another chain of place changes as returning workers bring in new thought and behavior patterns (Ramos, 2025).

Resilience rendered by the ability to move and reconfigure is seen in the natural world where “flee or adapt” options are key to survival. Adaptation to the changing seasons is seen in the patterns of migration and hibernation in the animal world. The chameleon metaphor is drawn from the ability of a reptile to change its skin color to match its environment. Ecologies reconfigure to restore balance after some disruption due to nature or human-induced factors (Ramos, 2025).

The Southeast Asian and Philippine Context

Southeast Asia is marked by great diversity in terms of culture, economy, and geographical features. It hosts some of the largest megacities with densities that make for high levels of exposure to climate change-induced extreme events. Multi-nodal metropolitan agglomerations are found in coastal settings that are vulnerable to sea level rise. Urban

forms are of coarse texture due to the juxtaposition of old historic centers and new developments. Southeast Asian cities are key components of the global production chain and are, therefore, very strong drivers of globalization (Athukorala, Pc., 2016).

The Philippines' archipelagic form accounts for a coastline length of 36,289 km. The country's physical geography exposes many of its settlements to water-based risks such as flooding, storm surge and tsunamis. Lying just below the equator, it experiences an average of 17 typhoons annually. As one of the Asia Pacific rim countries, it is also among those at risk due to volcanic eruptions and earthquakes. Based on its Climate Risk Index (CRI), the Philippines ranks 10th in the list of countries that were most affected by climate change from 1993 to 2022. The CRI is based on economic loss, fatalities, and affected people as indicators (Adil, et al, 2025). Overlying the geographic features are its socio-economic profile and governance systems that factors into its vulnerability index.

With 15.5% of the total population lying below the poverty line, with the most vulnerable sectors living municipalities categorized as third class based on local revenues, the capacities to prepare, recover, and adapt need enhancement. Culture comes into play when some people refuse to relocate due to fatalistic views (Bankoff, 2007). The updating of the Philippine National Building Code or PD 1096 which was promulgated in 1977 is underway, with the filing of the proposed bill called the Philippine Building Act 2023.

The Comprehensive Land Use Plan (CLUP) largely governs local and national development planning through single-use categorization of spaces in cities and municipalities. Visioning, ecological profiling, and cross-sector analysis precede land allocation and land use map preparation. The CLUP covers an implementation period of 9 to 10 years and becomes the basis for the zoning ordinances. While stakeholders' participation through workshops and public hearings constitute the planning process, the outcome and their implications on household level decision making are not accessible to all constituents due to shortfalls in digitalization targets.

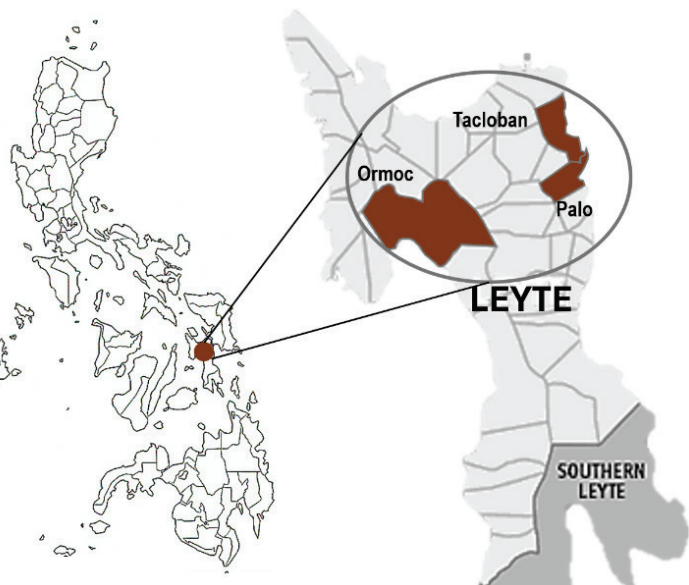
The Case Studies

The observation of spatial translations zooms into three Leyte cases, which are described in Table 2 and fig. 3.

Table 2. City/Municipal Profiles

Palo	Tacloban	Ormoc
Classification		
First Class Municipality	First Class City	First Class City
Land Area in sq.km.		
221.27	201.72	613
Population		
76,213	251,881	230,998
Location		
Along Leyte Gulf & Cancabato Bay	Along Leyte Gulf & Cancabato Bay	Along Ormoc Bay & Camotes Sea

Sources: Philippine Statistics Authority, 2021
Comprehensive Land Use Plans



Ormoc and Palo were beneficiaries of the Association of Southeast Asian Nation's post-Haiyan Adopt a Municipality program. Tacloban, as the Province of Leyte's capital was at the centerstage of rehabilitation efforts concerted by local and international organizations. Recovery planning for these local government units began in 2014 and so the ten years that have lapsed provide a decade-long frame for observing changes in the urban forms.

Spatial Interpretations of Resilience: Observations and Analysis

Housing: The relocation sites where temporary houses were built by local governments through local and international funding have transitioned to permanent housing sites. New housing sites which were developed

Fig.3. Map and Profile of Palo, Tacloban and Ormoc
Elaborated by the author

for those rendered homeless have been completed, awarded and occupied by selected beneficiaries who have organized themselves into homeowners' associations. These permanent housing sites are in the inland areas, far away from the coast. In Tacloban, the housing sites are in the northern part of the city where land elevation is relatively higher. In Ormoc, the residential areas are aligned with the main roads that lead up to the commercial and industrial sites. In Palo, the new housing sites are in the sub-nodes that have been identified in the land use plan.

Architecture: Roof decks have replaced many of the hip roofs that were blown away by the 300kph winds of typhoon Haiyan. These second or third level areas are used as additional living spaces that dwellers also designate as evacuation areas during flooding incidents. For community and institutional uses, more multi-use disaster risk reduction and management spaces have been designated in the three local government units. The three-in-one building in Ormoc functions as health, security and risk management hubs in strategically identified areas. The extension of Tacloban's Barangay Affairs Office doubles as an evacuation center where tents may be temporarily set up. A 12-meter building height limit governs new construction in Palo and Tacloban. Some of the heritage houses which were dominantly made of wood were completely damaged, but some were saved and reused as business establishments.

Coastal protection: The most visible public sector intervention is the tide embankment that runs along the coasts of three contiguous LGUs- Tacloban, Palo, and Tanauan. These three localities are on the eastern side of the Province of Leyte. The embankment doubles as a continuous access path for people and bicycles allowing two-way pedestrian flow. This infrastructure project was initiated by the national government in partnership with the Japan International Cooperation Agency. The height of the embankment was based on the results on the simulation for a 50-year-return-period storm surge (JICA, 2017).

Environment: Mangrove sites in Tacloban and Ormoc have been developed for tourism while efforts geared at protection and propagation have been reinforced through collaborations with universities and non-government organizations. The proposed non-invasive tourism infrastructure has yet to be constructed in Palo, but the municipality's mangrove sites have been cleared of informal settlers and are also being protected. All these mangrove sites have expanded in area cover since the onslaught of Typhoon Haiyan. The vibrant green cover consisting of forests, mangroves and agricultural areas is evident from an aerial view of the three LGUs. Flora and fauna have recovered from the devastation wrought by the mega-typhoon. Ormoc's Lake Danao remains as a protected area with limited activities allowed.

Economic bases: Agriculture, being the dominant livelihood base in Eastern

Visayas, has been boosted through interventions such as the Compact Farming Program. The Tacloban Agricultural Crops Resource (TACRE) Hub was established to promote innovations in food production. Livelihood Training Centers have been set up to encourage entrepreneurship and to develop a sense of community especially among women. Fishing and sand quarrying have resumed in Bangon River in Palo. The retail and food industries have expanded in all three LGUs, with chain restaurants and shopping malls drawing activities along the main roads. Ormoc's geothermal plant and alternative energy bases such as solar farms have also expanded operations that impact the increase in residential areas.

Infrastructure:

Ten years after the physical devastation wrought by Typhoon Haiyan, efforts to restore the broken links in the production and distribution chain have manifested in newly built port facilities, public markets, and slaughterhouses. The development of water and waste management facilities with livelihood/production components in Palo sought to support the efficient functioning of the built zones. The reconstruction of health and educational establishments account for institutional presence. Regional scale sports and recreation facilities have been constructed in Ormoc to promote well-being.

Mobility and Connections:

Accessing the Haiyan-affected areas was difficult due to the airport shutdowns and inaccessible roads. The breakdown of communication and other services also

made relief operations very problematic. System redundancy and off-grid complements were among the lessons learned from the Haiyan experience. Since then, the badly damaged Daniel Z. Romualdez airport in Tacloban has been repaired and a new terminal is under construction. A causeway is being built to directly connect the airport to mainland Tacloban. Ormoc Airport serves as the second gateway to the province. Inter-city mobility is aided by the expansion of Maharlika Highway and Asian Highway 26. The construction of bypass roads in Palo and Ormoc allow alternative movement routes. Collapsed bridges have been reconstructed and new roads have been provided to service the smaller barangays that are farther away from the city centers.

Community spaces:

Parks and open spaces for recreational activities have been maintained in terms of area allocation. Designated as such in the land use plans, outdoor design elements such as public art, lighting, and seating areas have been added to draw people into these social hubs. These open spaces are found in the waterfront areas as playgrounds, walking paths, and meet-up places. They are also in the city/municipal hall areas as plazas. In Tacloban, the convention center and its surrounding open spaces in Tacloban served as an evacuation center in the aftermath of Haiyan. The open plaza that is located between the Municipal Hall and cathedral in Palo was also the nerve center of rescue, relief, and recovery operations.

Memorials and Tourism Sites:

The symbols of local culture and pride were among the first to be restored. Palo Cathedral wherein many people sought refuge at the peak of the downpour was heavily damaged. The MacArthur Landing Memorial that is just off the coast also suffered the beating of the high-speed winds. Both tourist destinations have been repaired, and complementary buildings have been constructed in the vicinity. The MV Eva Jocelyn Shrine featuring part of the ship that was washed ashore has been developed as a memorial that tourists now visit. Ormoc's old city hall building has been refurbished as a museum and a new building that is located farther away from the coast functions as the city's governance center.

Governance Centers:

The City/Municipal Halls and the plazas within which they are set have been restored to their pre-Haiyan states. These seats of local power played important roles in the relief and recovery phases and now serve as development anchors due to their central locations. The administrative buildings have been expanded and the sites redeveloped to accommodate more functions. The expansive indoor and outdoor areas have been retained to serve as emergency spaces during disaster situations. The lobbies, multi-purpose halls, and corridor spaces can easily be transformed into coordination centers and evacuation spaces.

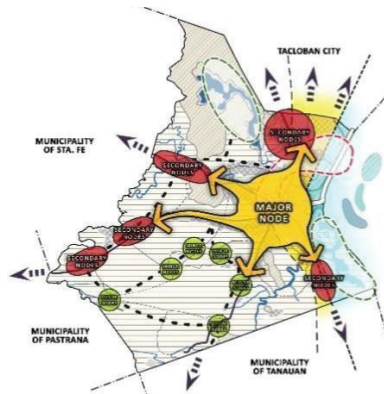
Regional Connections:

While inter-city coordination is critical to dispatching disaster response and

long-term recovery, this has proven to be challenging during and after the Haiyan disaster. The Provincial Government Building in the newly developed New Government Center that is in Palo along the boundary with Tacloban is symbolic of the regional connection goals. The physical connection afforded by the tide embankment that runs through three towns, may have been geared at the same objective of encouraging cross-city encounters. Joint management of this infrastructure is among the challenges that will have to be addressed for the long term.

Land Use Management:

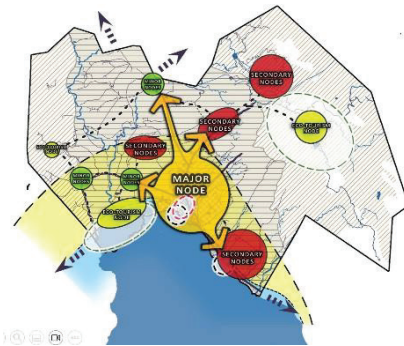
The Comprehensive Land Use Plans and Zoning Ordinances that were formulated with development and recovery components, mainstreamed disaster risk reduction management in the land management process. As seen in fig. 4, Spatial strategies that were reflective of the preferred development directions identified nodes and connections. No-build zones and high-risk areas were designated to inform locations of new residential, commercial and industrial zones. While the land allocation plans largely governed post-Haiyan development projects, some window of flexibility was allowed by the variation clauses of the Zoning Ordinances.



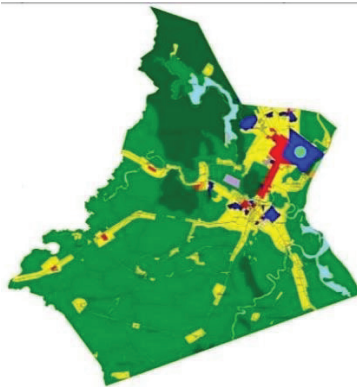
Palo Spatial Strategy



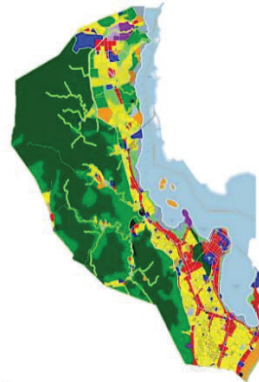
Tacloban Spatial Strategy



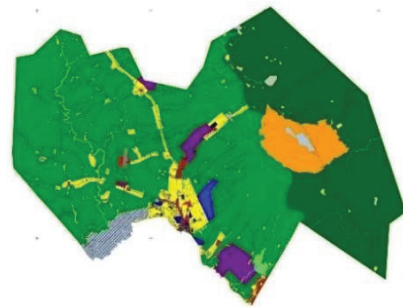
Ormoc Spatial Strategy



Palo Land Use Map



Tacloban Land Use Map



Ormoc Land Use Map

Fig.4. Spatial Strategies and Land Use Maps

Sources: Comprehensive Land Use Plans and Zoning Ordinance of Palo, Tacloban, Ormoc



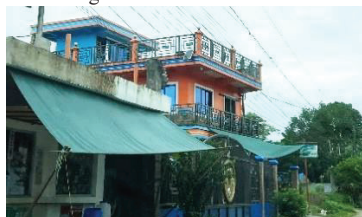
New bridges and roads



Permanent Housing



Health & Livelihood Centers



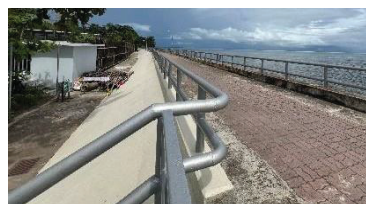
Roof Decks



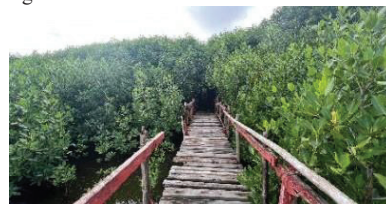
Agricultural Facilities



Slaughterhouses



Mangrove Replanting



Tide
Cultural Symbol

Embankment



Fig.5. Spatial Interpretations

Spatial Interpretations, Agility, and Resilience Issues

Based on the ecosystem approach, designing for resilience begins with an appreciation of the multi-layered and multi-directional network of moving parts that need to be given leeway to reconfigure in harmony with the whole. The difficulty in applying ecosystem dynamics (Levin, Pacala, 2003) to disaster risk reduction as part of urban governance lies in the varying adaptive capacities of people. As an example, residential mobility is enabled by affordability on the demand side and by a wide range

of residential choices on the supply side (Willibald et al, 2018). Abilities by communities to reconfigure according to what the current situation demands is constrained by the rigidity of our urban forms due to mega-scale, single mass and gated developments. Innovations in space design are also not encouraged by highly prescriptive regulatory systems that are largely based on conventional building forms (Ramos, 2025). Table 3 summarizes the assessment of observed spatial translations vis-à-vis urban agility indicators. Sample images of the spatial translations are seen in fig. 5.

Table 3. Evaluation of Spatial Translations vis-à-vis Urban Agility Indicators

URBAN AGILITY INDICATORS	OBSERVED SPATIAL TRANSLATIONS		
	CONSISTENT	INCONSISTENT	OPPORTUNITIES
ARCHITECTURE ● Continuous alignment with mission, as an enterprise ● Evolving ● Contextual, Systemic, Holistic ● Adaptable to changing circumstances ● Diversified, Replicable, Unified	- Risk assessment preceding residential land use allocation - Ecological profiling as part of the CLUP process - Cross-sector analysis as part of CLUP process - Roof deck spaces	- Present context and forecastable future as dominant basis for built-form disposition - Permanent sites - Ownership as mode of housing access	- Innovations in building-site relationship - Adaptive and transformable designs for changing contexts - Wide range of design and site choices - Non-ownership modes of housing access - Time-sharing concepts for space utilization
INNOVATION ● Going beyond business as usual	- Build back better principles underlying interventions	- Conventional building forms and materials of construction	- Updated design standards - Non-conventional and site-adaptive building forms

TECHNOLOGY • Smart/ Intelligent • Interoperable, Digitalized, Use of Information Technology • Data-driven • decision-making, Accessible Information • Innovative technologies, Accessible information	- Websites as virtual city halls - Use of GIS - Data-driven CLUP - Collapsible spaces, mainly tents	- Lack of significant residential and non-residential design innovation and use of new materials and technology - Inadequate real-time information dissemination channels	- Household-level access to information and decision-making tools - Digital city twins for simulating policy and design interventions - Real-time information access - Transformable architecture - Off-grid systems - Science-based management of infrastructure and services - Machine learning building and land development applications
ENVIRONMENT • Net-zero or Positive Energy • Minimized environmental impact, Climate change-resilient • Green technologies, environmentally friendly building design, use of recycled materials • Implementation of new systems for optimizing resource consumption • Symbiosis between cities • Floating cities, Utilizing deltas, water	- Recycling and solid waste management facilities - Designating protected areas in the Land Use Plan: Strategic Agriculture and Fisheries Development Zones (SAFDZ) Network of Protected Areas for Agriculture and Agro-Industrial Development (NPAAADs) National Integrated Protected Areas System (NIPAs) - Designating Critical Habitat Overlay Zones - Mangrove replanting and propagation in some areas - Geothermal plant, solar farms - Non-invasive tourism. Light infrastructure for mangrove areas.	- Hard infrastructure for coastal protection - Visual access to water resources is not optimized as a public amenity	- Soft and natural alternatives to hard infrastructure for coastal protection such as levees and mangrove farms - Household and community engagement in sustainable waste management to complement LGU facilities - Enhancement of cross-boundary mobility, co-management, and sharing of resources
PUBLIC SPACES • Access to public spaces	- Ongoing upgrading of CLUP-designated open and public spaces - Sports and recreational facilities - Assembly Buildings - Prominence of role of plazas in daily affairs	- Walling off the waterfront and physically cutting the water bodies from the settlement sites	- Natural alternatives to the tide embankment - Time sharing schemes for the public spaces - More transformability options for the public spaces

SERVICES ● Basic services provided ● Transport systems/ Public Transport ● Connectivity ● Mobility	- Bypass roads for redundancy - Gateways such as airports and seaports	- Lack of off-grid and back-up facilities that can function during emergencies when grid systems are not functioning	
LAND USE ● Flexible land use ● Adaptive to technological innovations ● Consider changing needs ● Multi-land uses	- Variation clauses allowing changes based on actual and emergent conditions - Tagging of risk-free areas - Multi-use buildings and sites, e.g 3-in-1 facilities	- Static urban spaces - Limited to risk avoidance strategies manifested in building in high elevations - Market-driven development resulting in land use variances	- Flexible land uses - Transformable and reconfigurable urban spaces - Adaptative architectural forms and utility systems can expand buildability of available land. - Political-economy approach to land development.
FINANCE ● Innovations in real estate financing	- Homeowners' Associations-led estate management	- Free housing - Housing delivery and access based on existing housing programs that are governed by conventional instruments such as mortgage and collateral	- Micro-finance and cooperative set-ups - Industry-based real estate financing - Finance scheme restructuring for disaster situations
INFORMAL ● "Tactical Urbanism", which refers to the global phenomenon of informal interventions in the urban fabric – both cultural and physical. ● Minimal intervention, broadly accessible ● Urban spaces that function as a temporary solution with long-term impact	- Informal commercial activities on the waterfront catering to locals and tourists. - Engagement of communities in mangrove sites management - Festivals and traditions such as the <i>tabuan</i> where vendors come in from neighboring towns, shape public spaces	- Informal businesses and entrepreneurial activities adversely affecting water quality.	- Taking stock of indigenous/local knowledge for DRRM initiatives. - Light and transient concepts drawn from informal settlements, with upgraded standards

SOCIAL INCLUSIVITY ● Community engagement ● Inclusive growth	- Stakeholder engagement as part of the CLUP formulation process - Organization into Homeowners' Association as requisite to housing access - Community engagement through the cultural landmarks - Spaces for collaboration, e.g. mangrove farms and universities	- Marginalizing effects of the tide embankment, e.g. fisherfolk, women, children.	- Community hubs for social engagement opportunities. - Social hubs for chance encounters and flow of tacit information.
PEOPLE-MACHINE-ENVIRONMENT ● Symbiotic systems ● Human-machine symbiotic intelligence ● Real-time Feedback system ● AUB approach with humanistic and ecological paradigms	- Mangrove sites infrastructure development for non-invasive tourism	- Disaggregation of settlements and environment-embedded livelihood because of relocation. - Disruptive effects of infrastructure.	- Digitalized governance systems. - Digital literacy for vulnerable groups - Human dimension in technical decision-making.
INCREMENTAL ● Kinetic city model ● Making changes as needed ● Self-built, participatory, phased, incremental building ● Repurposing use of land	- BP 220 housing models - Permanent housing based on existing standards	- National-level design standards	- Context-based standards - Form-based zoning - Land banking for incremental development
ITERATIVE ● Breaking down projects into iterative phases ● Urban transformation projects ● Performance-based generative design ● Exploring many options through evaluation and optimization computer software	- Alternative spatial strategies as part of the CLUP process	- Real world experimentation - Linear process resulting in finite outcomes	- Digital twins and computer software for simulations - Exploratory design and planning processes that lead to non-conventional solutions.
GOVERNANCE ● Urban cluster Governance ● Regional collaboration	- New Government Center - Regional Land Use Plan - Co-management of the Geothermal plant - Tide embankment with continuous pedestrian path - Restoration of city/ municipal halls and other institutional buildings	- Clustering based on administrative boundaries	- Cluster planning anchored on similar or complementary attributes, products, services. - Dynamic clusters- constantly reconfiguring based on emergent situations. - Shifts in networks and nexus of power as needed.

Opportunities for Re-interpreting and Re-imagining Resilience

Based on the findings, the post-Haiyan past interventions that were aimed at climate change and disaster resilience may be reimagined to factor in the full spectrum of agility concepts. Future endeavors that manifest in spaces and the built form may be brought to a different level by keeping pace with the dynamic variables defining context.

Contextual and Comprehensive:

The case studies reflect the acknowledgement of architecture being set in multi-layered and multi-dimensional context. Hence, the comprehensive involving various sectors largely defines the land use planning process and its translation into specific programs, projects, and activities. Architecture or the conceptualization of spaces is part of a long-term visualization of the city's future based on how planning is practiced in the Philippines. As products of a cross-sector analysis that ends with land allocation and spatial outcomes, residential and non-residential buildings are ideally the physical translation of, needs, wants, and aspirations. However, a comprehensive approach does not only target consolidating inputs from different perspectives. It is about seeing the big picture that encapsulates the relatedness of parts that make up the whole. It entails understanding of the aggregation process that underlies city creation. Any intervention be it in the form of policy, infrastructure project, or organizational design result in varying

levels of disruption that may eventually restore order in the urban system. Some disruptive effects can be permanent and irreversible. What stands out as the most visible intervention in Leyte is the tide embankment. While it was intended to protect the coastal areas from water-based disasters, it also accounts for the disaggregation of collectively functioning parts. Tourism and hospitality spaces that benefit from the vistas afforded by direct visual access have been physically disconnected from the waterfront amenity. Fisherfolk whose houses and boats used to be just across the water have also been severed from their livelihood bases.

Keeping Pace with Changes:

The context where the towns and cities are embedded is constantly changing at paces that are difficult to capture using conventional forecasting methods. While climate change effects are often referred to as slow setting, the scale of events they come with have caused chaos in recent years. Such events call for planning and design paradigm shifts that reimagine urban form. Visioning as we now know, and practice needs to break out of the mold to instigate innovation.

Planners do recognize the dynamism of the city planning context and this is expressed in the scientific planning tools in the form of margin for error and probability factors. But this ever-changing context is made up of parts that are not moving together. Lack of synchrony in technology development and institutional framework formulation is glaring as the country is still using the same national

building code, ten years after Haiyan. Building design standards are the same as they were four decades ago and remain applicable to all Philippine towns and cities with varying geographical, social and economic contexts. Procedural systems such as the issuance of building and development permits, land use and environmental clearances may also be redesigned to enable institutions to keep pace with the rate at which urban land is developed/ re-developed.

Building Back Better:

The Build-back-better principle that resonated with all sectors in the last ten years has been interpreted as sturdier and more permanent structures, based on the Leyte experience. But better can also mean being light, transient and nimble. Rather than confronting location challenges head-on with elevated structures and stronger materials, buildings can be reimaged to move with their setting to be more one or in synch with its environment.

Quick response may go beyond tents and evacuation centers and translate to transformable architecture. Innovations in form-finding informed by new materials, construction methods and utility systems can enable vulnerable communities to thrive and be productive in the face of environmental threats. Spatial transformations that involve adjustments in levels of functional networking can also prove to be essential to saving lives and property in times of disasters. Back-up systems can enable towns and cities to function off-grid, with

independent water and power systems that can be tapped when the grid system breaks down. Alternative energy sources interwoven with housing, commercial, and institutional building design can address disruptions during the most critical phases of disaster management.

Environment, Infrastructure, and Digital Technology:

Land use planning as a traditional tool for resource management divides the city into compartments of specialized functions. With the designation of protected areas, no-build zones, and inalienable land, safeguarding resources is based on the principles of delineating and restricting access. In some cases, walling off and isolating areas become the physical translation of protection akin to the spatial strategies of the mediaeval age. But resource protection strategies can also be geared toward co-existence and seamless integration based on an understanding of ecological structures of the natural and built environments. A cross-sector approach does not solve problems while creating new ones.

Catering to and interfacing all sectors involves huge data sets that need to be processed with speed and reliability. Data underlying digitalization efforts are expected to be continually updated and made accessible for exploration, decision-making, and innovation. The science of form-finding and form-production enables an iterative process that involves simulation, experimentation, and modelling concepts. With digital

infrastructure accessible at household level, stakeholder engagement can be expanded.

Infrastructure for mobility may be geared towards reconfiguring spaces. Mobility is not just about enabling movement from point A to point B. It also means providing leeway for spaces to morph as needed. Urban space permeability, interconnectedness, redundancy for mobility can level up to proceed to spatial reconfiguration.

Social Mobility and Finance:

Spatial reconfiguration and urban landscape transformation need to be backed up by social mobility strategies. Housing and livelihood financing access, for example, exploring new forms of securing loans will manifest in vibrant built-up areas with socially empowered communities. Innovations in financing may draw inputs for the so-called informal settlements where building proceeds incrementally based on varying abilities to finance construction. The spontaneous quest for and expressions of order may be gleaned from the self-initiated space production in these areas. Overly market-led developments need to be distinguished from those that attempt to adjust to new conditions. Allowing variations in land use must be done in the spirit of flexibility to emergent situations rather than as responses to pressures from the business sector.

Co-management across boundaries:

Identifying spatial clusters that cross boundaries but held together by shared socio-economic systems may be the

take-off points for co-management. Governance strategies that are based on complementary functions are key to optimizing the use of limited resources. These are the same clusters that may be tapped for coordinated action during times of calamities. Cluster management also accounts for economic resilience and ease of restoring production and distribution chains.

Moving Forward

In the last ten years, there have been great strides towards making towns and cities in the Philippines more climate change resilient as seen in the cases of Palo, Tacloban and Ormoc. With the higher levels of risk looming due to the increasing intensity and frequency of extreme events, innovation trajectories in building design and land development need to proceed at an exponential rather than linear path. The current conditions present an array of opportunities to go beyond the traditional forms of space creation.

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DYNAMICS OF SPATIAL PLANNING REGULATION IN PROTECTING CULTURAL VALUES

Case Study: Yogyakarta – Indonesia

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Abstract

Behind the San Sebastian Basilica, one of Manila's historic churches, a high-rise condominium development has sparked a conflict between developers and heritage conservation groups. The development not only threatens the authenticity of the site, but also has the potential to derail efforts to list the church as a UNESCO World Heritage Site. The case reflects the clash between economic incentives through property development and efforts to preserve culture (2023).

In Thailand, particularly in the Pattani region, there has been a long-standing conflict between the central government and the Malay Muslim community. In addition to political and identity issues, the conflict has also been fueled by economic and development policies that often ignore local traditions and cultural rights. In Bangkok and other major cities, the pressure to build office buildings and transport infrastructure has often led to the destruction of historic areas and the loss of traditional cultural knowledge and practices (2020).

In Cambodia, prioritizing tourism and economic development around the Angkor Wat site has raised concerns about cultural commodification and environmental degradation, as well as the loss of local cultural authenticity. Activists and conservationists struggle with pressure from developers and governments seeking to maximize tourism revenues (2023).

A. INTRODUCTION

Spatial conflicts in Southeast Asian countries often arise as a result of the rivalry between economic interests – such as infrastructure development, tourism, and industrial areas – and the interests of protecting culture and the rights of local communities. Governments and the private sector often prioritize economic

growth through land conversion and area development, which leads to the displacement of indigenous communities, the loss of historical sites, and the threat to local traditions and knowledge. On the other hand, efforts to preserve culture are often marginalized, even in world heritage areas, due to the pressure of economic

exploitation and the commodification of culture for tourism. Lack of public participation, weak recognition of customary land rights, and imbalanced regulations exacerbate these conflicts, so that cultural protection often loses out to more dominant economic interests. What about Yogyakarta – Indonesia?

B. H I S T O R I C A L BACKGROUND OF THE ESTABLISHMENT OF THE SPECIAL REGION OF YOGYAKARTA

1. Islamic Mataram Kingdom (16th century – early 18th century)

The origins of Yogyakarta's special status can be traced to the Islamic Mataram Kingdom which was established in the late 16th century in the interior of Central Java and Yogyakarta. This kingdom was founded by **Panembahan Senopati** around 1587 with the center of government in Kota Gede. The Mataram Kingdom reached its peak under the reign of **Sultan Agung** (1613–1645), who expanded his territory to most of Java and Madura.

Islamic Mataram combined political, cultural, and religious elements. In addition to being a worldly power, this kingdom also carried out strong spiritual and symbolic functions. The cultural strength and structure of the Mataram palace (keraton) became the historical and philosophical basis for the special status of the Special Region of Yogyakarta in later times.

2. Giyanti Agreement (1755): Separation of Mataram

After the reign of Sultan Agung, Mataram experienced decline due to internal conflict and intervention by the VOC (Dutch). Political tensions between the princes and Dutch intervention led to the breakup of the kingdom through the Giyanti Agreement on February 13, 1755.

This agreement divided the Mataram Kingdom into two powers:

- The Yogyakarta Sultanate, led by Prince Mangkubumi with the title Sultan Hamengku Buwono I.
- The Surakarta Sunanate, led by Pakubuwono III, the previous ruler of Mataram.

This separation was approved by the VOC, which had an interest in weakening the political power of Java. The Yogyakarta Sultanate then developed as a center of culture, political power, and its own economy which had traditional and spiritual legitimacy in Javanese society.

3. Formation of the Pakualaman Duchy (1813)

In 1813, the Yogyakarta region was divided again due to internal conflict. Prince Notokusumo, brother of Sultan Hamengku Buwono II, was given territory by the British (who at that time took over from the Dutch) and founded the Pakualaman Duchy. He was given the title Paku Alam I.

Since then, the Yogyakarta region has been divided into two authorities: the Yogyakarta Sultanate and the Pakualaman Duchy, both of which have autonomy

within the framework of colonial government, but still maintain Javanese traditional and cultural values.

4. Independence Period and Yogyakarta's Joining the Republic of Indonesia (1945–1950)

After the Proclamation of Indonesian Independence on 17 August 1945, the two rulers of Yogyakarta, namely Sri Sultan Hamengku Buwono IX and KGPAA Paku Alam VIII, declared their full support for the Republic of Indonesia. On 5 September 1945, they officially issued a mandate that the Yogyakarta Sultanate and Pakualaman become part of the Republic of Indonesia as a single territory called the Special Region of Yogyakarta (DIY).

Due to Yogyakarta's active and strategic role during the independence revolution (including as the capital of the Republic of Indonesia between 1946–1949), the Indonesian government recognized the special status of this region. This was later strengthened in various legal products, including Law No. 3 of 1950 and updated in Law No. 13 of 2012 concerning the Special Region of DIY, which recognizes the historical, cultural, and contribution of the Sultanate and Duchy in the formation of the Unitary State of the Republic of Indonesia (NKRI).

C. POSITION OF DIY IN THE STATE OF THE REPUBLIC OF INDONESIA

With this unique historical background, the Special Region of Yogyakarta (DIY) has a special and privileged position in

the constitutional system of the Republic of Indonesia, which is recognized constitutionally and legally. This privilege is not merely symbolic or historical, but rather provides special authority in the implementation of regional government that distinguishes DIY from other provinces in Indonesia. Here is a more detailed explanation:

1. Constitutional Recognition

Article 18B paragraph (1) of the 1945 Constitution states:

“The state recognizes and respects regional government units that are special or exceptional in nature as regulated by law.”

This article is the constitutional basis for the existence of the Special Region of Yogyakarta as a region with special status, along with other regions that have special characteristics.

2. Special Legal Basis: Law No. 13 of 2012 concerning the Special Status of DIY

This law recognizes the uniqueness of the Special Region of Yogyakarta based on its history, culture, and role in the struggle for Indonesian independence. This law grants special authority to the Special Region of Yogyakarta in five government affairs:

- Procedures for filling the positions of Governor and Deputy Governor
- DIY government institutions
- Culture
- Land
- Spatial planning

3. Governor and King

One of the real forms of the special status of the Special Region of Yogyakarta is that the Governor of the DIY is held by the reigning **Sultan Hamengku Buwono**, and the Deputy Governor is held by the reigning **Duke Paku Alam**. The filling of these positions is not through direct elections, but based on the determination and recognition of the position of the Sultan and Duke as part of the kingdom system that still exists.

4. Hybrid Government System: Modern – Traditional

DIY implements a form of government that combines a modern republican system with a traditional royal system. This is reflected in the existence of institutions such as the Paniradya Kaistimewan, as well as in the formulation of policies based on local cultural values, including:

- Formulation of land policies that take into account the Land of the Sultanate and Duchy
- Spatial planning that involves philosophical, historical, and spiritual approaches (for example, Strategic Space Units)

5. Full Integration in the Unitary State of the Republic of Indonesia

Despite its special characteristics, DIY remains an integral part of the Unitary State of the Republic of Indonesia (NKRI). This special characteristic does not create a state within a state, but is recognized as a form of pluralism in the Indonesian constitutional system that respects local history and wisdom.

D. SPATIAL PLANNING SYSTEM IN INDONESIA

1. Definition of Spatial Planning

In general, spatial planning is a process of planning, utilizing, and controlling space in order to create integration, order, and balance between environmental, social, and economic interests in a region.

According to Law No. 26 of 2007 concerning Spatial Planning, the definition of spatial planning is:

“The form of spatial structure and spatial pattern, both on land, sea, and air, which includes national, provincial, district/city, and certain regional areas.”

2. Objectives of Spatial Planning

Spatial planning aims to:

- Create a safe, comfortable, productive, and sustainable national space.
- Ensure legal certainty in the use of space.
- Create spatial justice and equitable distribution of development.

3. Principles of Spatial Planning

Spatial planning in Indonesia is based on the following principles:

- Integration between sectors and regions,
- Sustainability of natural resources and the environment,
- Efficiency and effectiveness of spatial utilization,
- Fairness and openness in decision-making,
- Suitability of spatial functions.

4. Spatial Planning Hierarchy

The spatial planning system in Indonesia follows a hierarchy from the center to the regions, consisting of:

a. National Level

- National Spatial Planning Plan (RTRWN)

Regulates the structure and spatial pattern of the entire territory of Indonesia, including national growth centers and main infrastructure networks.

b. Provincial Level

- Provincial RTRW (Provincial Spatial Planning Plan)

Describes RTRWN policies in the provincial area and serves as a reference for districts/cities.

c. Regency/City Level

- Regency/City RTRW

Regulates spatial allocation and control of spatial utilization at the district/city scale.

- RDTR (Detailed Spatial Planning Plan)

Is a more detailed description of the district/city RTRW, complete with zoning maps and zoning regulations, which are the basis for issuing spatial utilization permits such as PKKPR (Approval of Suitability of Spatial Utilization Activities).

5. Implementation and Control Documents

To control and supervise the use of space, instruments are used such as:

- Zoning Regulations
- OSS (Online Single Submission) Based Licensing

- Administrative sanctions for violations of space use

6.. Challenges of Spatial Planning in Indonesia

Some of the main challenges in implementing spatial planning in Indonesia are:

- Conflict of interest between economic development and environmental conservation,
- Inequality in land ownership,
- Lack of synchronization between central and regional planning,
- Lack of law enforcement against violations of spatial utilization.

7. Innovation and New Dynamics

In recent years, the government has pushed for the acceleration of the preparation of digital RDTR and the integration of the OSS system so that the investment licensing process becomes faster, more efficient, and based on legal certainty. In addition, certain regions such as DIY have also begun to develop spatial planning approaches based on cultural values and local wisdom through tools such as the Strategic Spatial Unit (SRS).

E. SPATIAL PLANNING CONFLICT IN YOGYAKARTA

Law No. 26 of 2007 concerning Spatial Planning produces a regulatory product called the Detailed Spatial Planning Plan (RDTR). Meanwhile, Law No. 13 of 2012 concerning the Special Region of Yogyakarta which provides authority in Spatial Planning produces the Strategic Spatial Unit (SRS). Discussion of the existence of 2 spatial planning regulations

that have different backgrounds and substances in the same space is very important because it concerns fair, sustainable spatial governance, and respects local characteristics within the framework of the Unitary State of the Republic of Indonesia. Here are some of the main reasons why this issue is important to discuss:

1. Avoiding Overlapping Authority

RDTR is a legal product of Law No. 26 of 2007 concerning Spatial Planning, which applies nationally and is the technical/legal basis for licensing of spatial utilization (for example PKKPR through OSS). On the other hand, SRS is a product of Law No. 13 of 2012 concerning the Special Region of DIY, which gives DIY the authority to formulate spatial planning policies based on local cultural, historical, and philosophical values.

If there is no coordination between the two, there will be overlapping regulations and authorities, where permits issued based on RDTR may be rejected or considered inconsistent with the values maintained in SRS.

2. Maintaining a Balance between Technical and Cultural Approaches

RDTR uses a technocratic approach—based on spatial data, functional analysis, and economic projections. Meanwhile, SRS emphasizes a cultural-philosophical approach, such as the concept of the “Yogyakarta cosmological axis,” sacred areas, or customary lands of the sultanate.

Discussing this conflict is important to build a balance between technically

efficient development and the sustainability of living spaces that are full of cultural and spiritual meaning. Without healthy discussion, there is a risk that sacred or historical spaces will be marginalized by the development agenda.

3. Ensuring Legal Certainty and Spatial Justice

The conflict between RDTR and SRS can create legal uncertainty, both for local communities, investors, and government officials. For example, when permits have been issued nationally through RDTR and OSS, but are then faced with rejection by the DIY Regional Government because they conflict with the SRS.

In-depth discussions and deliberations will help formulate a regulatory harmonization scheme, so that legal certainty and spatial justice can be guaranteed.

4. Improving the Quality of Spatial Governance in the Era of Regional Autonomy

Discussion of this conflict is also important in the context of decentralization and regional autonomy. DIY is an example of a region that has special autonomy based on privileges. The conflict between RDTR and SRS shows the challenges in synchronization between the center and regions, as well as between the national legal system and local wisdom.

Studying this conflict will open up space for national spatial planning policy reform to be more responsive to the diversity of local values and conditions in various regions in Indonesia.

5. Maintaining the Integrity of the Special Status of the Special Region of Yogyakarta

By discussing and raising this conflict scientifically and openly, the community and government can maintain the integrity of the Special Status of the Special Region of Yogyakarta so that it does not only become a symbol, but also becomes the basis for substantive considerations in formulating regional development policies.

If not discussed, there is the potential that the values of the special status will be considered as an obstacle to investment or development, even though they can actually be a sustainable and dignified alternative spatial planning model.

F. POSITION OF PERDAIS IN THE LEGAL SYSTEM IN INDONESIA

Each type of regulation has a different position, legal force, and scope of regulation. To understand the position of the Special Region Regulation (Perdais), especially in the context of spatial planning in the Special Region of Yogyakarta (DIY), two things need to be explained: the hierarchy of legislation and the special position of DIY.

1. Hierarchy of National Legislation

Based on Article 7 of Law No. 12 of 2011, the hierarchy of legislation in Indonesia is as follows:

- a. The 1945 Constitution of the Republic of Indonesia
- b. Law / Government Regulation in Lieu of Law (Perppu)
- c. Government Regulation (PP)
- d. Presidential Regulation (Perpres)
- e. Provincial Regulation
- f. Regency/City Regulation
- g. Village Regulation or equivalent

Important note: Law No. 13 of 2012 concerning the Special Status of the Special Region of Yogyakarta adds a new category, namely the Special Region Regulation (Perdais), which is equivalent to the **Provincial Regulation**, but has a special substance based on the special status of the Special Region of Yogyakarta.

2. Position and Function of Perdais

Perdais (Special Regional Regulation) is a regional legal product that can only be made by the DIY Regional Government based on Law No. 13 of 2012 concerning the Special Region of DIY.

Perdais regulates five special affairs of DIY:

- a. Procedures for filling the positions of Governor and Deputy Governor
- b. DIY Regional Government Institutions
- c. Culture
- d. Land
- e. Spatial planning

Position of Perdais in the Hierarchy

- Perdais is not an ordinary Perda, but has legal force equal to a Provincial Regulation.
- However, its substance comes directly from the special authority granted by the Special Region Law.
- In the context of spatial planning law, Perdais can regulate spatial

planning that differs from national provisions, as long as it is still within the framework of the Republic of Indonesia and **does not conflict with higher laws and regulations.**

3. Position of Perda's in Spatial Planning

a. Legal Standing

- Law No. 13 of 2012 provides a legal basis for DIY to formulate spatial planning policies based on cultural, historical, and philosophical values.
- Based on this law, DIY can formulate Perda's Spatial Planning,

c. Legal Consequences

- When there is a conflict between the provisions in the RDTR and the provisions in the SRS/Perda's, regulatory harmonization is necessary.
- If there are no explicit provisions in the Law or higher Government Regulation regarding this alignment mechanism, then this issue could become material for judicial review or policy resolution between institutions (for example between the DIY Regional Government and the Ministry of Agrarian and Spatial Planning (ATR/BPN).

Type of Authority	Authority	Content	Position in Hierarchy
Perda's	Special Perda's DIY, based on Law 13/2012	Regulating spatial planning with cultural values	= Provincial Regulation
RDTR (national)	National (Law 26/2007)	Technical spatial regulation, legal formal OSS	Regulated in regular Regional Regulation

including devices such as Strategic Spatial Units (SRS).

b. Position in relation to RDTR/RTRW

- RDTR and RTRW are national products stipulated in Law No. 26 of 2007 concerning Spatial Planning.
- Meanwhile, SRS and spatial planning policies based on specialization are products of special regions, which can complement, adjust, or in some aspects, conflict with national products.

G. C O M P A R I S O N O F SUBSTANCE OF DETAILED SPATIAL PLANNING (RDTR) AND STRATEGIC SPATIAL UNITS (SRS)

Technically, RDTR is a detailed planning document prepared based on the direction of the Regency/City Spatial Planning Plan (RTRW), with a strong technocratic approach, based on spatial data and scientific analysis. RDTR is used as an operational basis for licensing of spatial utilization, including the issuance of the Approval of Suitability of Spatial

Utilization Activities (PKKPR). The preparation process follows the national procedures and standards set by the Ministry of Agrarian Affairs and Spatial Planning/BPN, and through a formal public consultation process.

Meanwhile, SRS is prepared within the framework of the special status of DIY based on the authority of special status in the field of spatial planning and land as regulated in Law No. 13 of 2012. Technically, SRS not only considers spatial and ecological aspects, but also includes historical, philosophical, and cultural considerations inherent in certain areas. The SRS preparation method involves elements of the palace, indigenous communities, and local institutions such as Paniradya Kaistimewan. This approach reflects DIY's efforts to maintain the character of space that reflects local values and the spirituality of Yogyakarta.

Philosophically, RDTR is based on the logic of modern development planning that is oriented towards spatial efficiency, economic growth, and legal certainty. The goal is to create spatial order that is measurable and easily controlled administratively. In this case, space is considered a commodity that can be regulated based on optimal function and use according to rational technocratic calculations.

In contrast, SRS represents the philosophical view that space in Yogyakarta is an entity that is full of cultural and spiritual meaning, not merely a physical space that can be divided into sections based on technical functions. For example, the Imogiri area is not only

assessed based on slope or land use, but also as a sacred area that has a historical relationship with the ancestors of the Mataram kingdom. This makes the SRS approach more holistic and contextual, although at the same time it tends to be more difficult to codify technically in a national standard format such as RDTR.

In its implementation, RDTR is administratively binding and is the main basis for the national licensing system, including the OSS (Online Single Submission) system. On the other hand, SRS has not been fully integrated into the national licensing system, and its position is often subordinate or merely complementary. This disharmony becomes a source of conflict in implementation in the field, especially when an activity has obtained a permit based on the RDTR, but is rejected by the DIY Regional Government on the grounds that it does not comply with the values in the SRS. The following is a comparison table that clarifies the differences between the Strategic Spatial Unit (SRS) and the Detailed Spatial Plan (RDTR) from various aspects:

Aspect	Strategic Spatial Unit (SRS)	Detailed Spatial Plan (RDTR)
Legal Base	Law No. 13 of 2012 concerning the Special Status of the Special Region of Yogyakarta, further regulated in the Perda's	Law No. 26 of 2007 concerning Spatial Planning, further regulated in PP & Permen ATR
Author's Authority	The DIY Regional Government through the Special Administrative Region and related Local Government Organization (OPD)	District/City Government with technical guidance from the Ministry of ATR/BPN
Philosophical Approach	Culture, historical values, spirituality and local wisdom	Technical, rational, functional and economical
Coverage Area	Certain areas that are considered culturally and historically strategic (not always large)	The administrative area of a district/ city as a whole, divided into sub-districts/villages
The main purpose	Maintaining the sustainability of the unique values and cultural identity of the DIY space	Providing legal certainty and direction for the use of space for development
Method of Compilation	Cultural participatory, involving the Kraton, traditional figures, and local communities	Technical, based on spatial data and RTRW norms, according to national standards
Final Product	Local value-based strategic planning document	Complete legal-formal spatial documents with zoning maps and zoning regulations
Legal force	Special Regional Regulations (Perda's), do not automatically enter the national licensing system	Regional Head Regulations, directly used in the OSS (Online Single Submission) system
Functions in Licensing	Not automatically recognized as the basis for Approval of Suitability of Spatial Utilization Activities (PKKPR)	Not automatically recognized as the basis for Approval of Suitability of Spatial Utilization Activities (PKKPR)
General Conflict	Not in sync with RDTR; local values may conflict with technical designations	Considered to ignore the cultural dimensions that exist in local communities

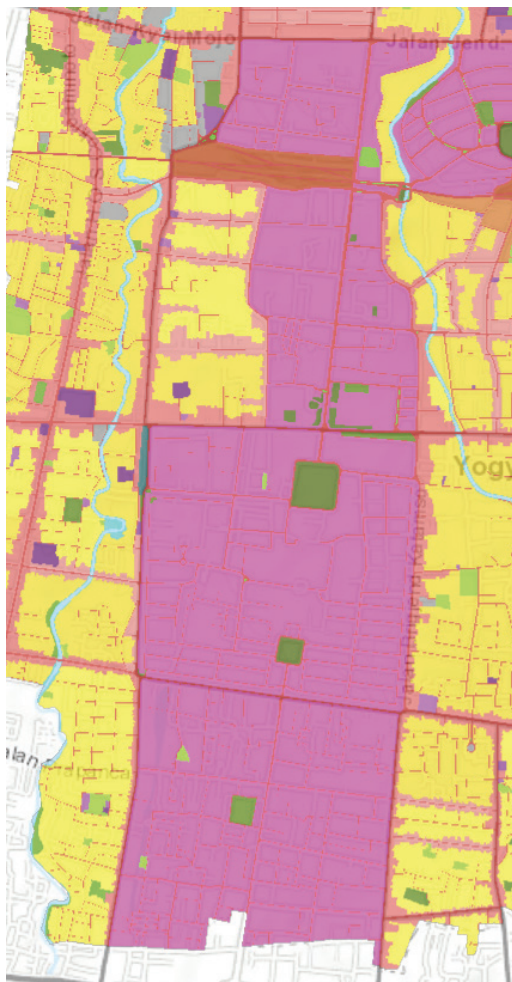
H.EXAMPLE OF SPATIAL PLANNING REGULATION CONFLICTINYOGYAKARTA

Cosmological Axis Area Case:

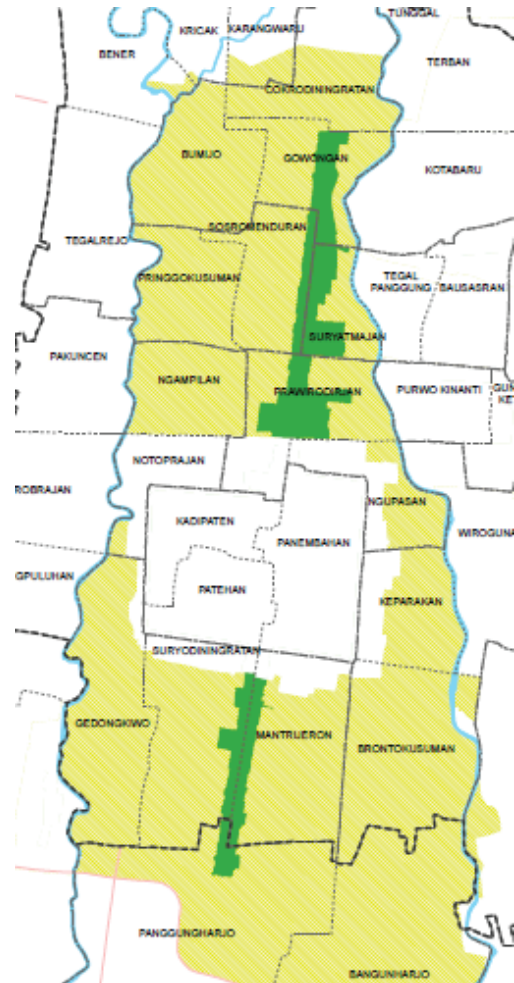
Krapyak Stage – Kraton and Tugu – Margo Utomo/Malioboro/Margo Mulyo Street.

1. Zoning in the Yogyakarta City RDTR (2021 – 2041)

- Malioboro Street and its surroundings: intensive commercial zone (K1/K4)
- Several areas on the west/north side: mixed zone
- Tall buildings (hotels and apartments) are allowed with certain conditions
- Building orientation is free as long as it meets the Building Coverage (KDB) and Floor Area Ratio (KLB)



RDTR of Yogyakarta City



SRS for the Cosmological Axis Area

2. Zoning and Rules in the Cosmological Axis SRS

- The area is regulated as a sacred corridor that reflects Javanese cosmology and the axis of the relationship between humans-nature-God
- Prohibition on building tall buildings that block views or damage the axis line
- Building orientation must face the main axis
- Use of materials and building forms must be in harmony with traditional Javanese architecture
- Sacred zones and cultural heritage must not be commercialized

3. Conflicts that occurred

- Several permits for hotels and high-rise buildings have been issued based on the RDTR which contradicts the SRS.
- Protests from cultural and academic communities emerged because the buildings were considered to disturb the sacredness and symbolic value of the area.
- The City Government adheres to the RDTR, while the DIY Regional Government through Dispetaru and Paniradya Kaistimewan seeks to maintain the values in the SRS.

I. DESIGNATION OF THE COSMOLOGICAL AXIS OF YOGYAKARTA AS A WORLD HERITAGE SITES 2023

Spatial Planning in Yogyakarta entered a new chapter when the Yogyakarta Cosmological Axis area was designated as a World Heritage by UNESCO in 2023. This designation requires the government to provide a Management Plan designed to maintain, manage, and develop the world cultural heritage area so that it remains sustainable, in accordance with the principles of preservation established by UNESCO. The Management Plan includes:

- Protection of Outstanding Universal Value (OUV)
- Development control
- Heritage and buffer zoning arrangements
- Community and institutional involvement

The Management Plan is an integral part of the Regional Government's duties related to the designation of the Yogyakarta Cosmological Axis as a world heritage, namely:

- resolving development pressures;
- reducing environmental pressures;
- overcoming natural disasters and disaster preparedness;
- developing sustainable tourism; and
- resolving issues of pressure on the surrounding community

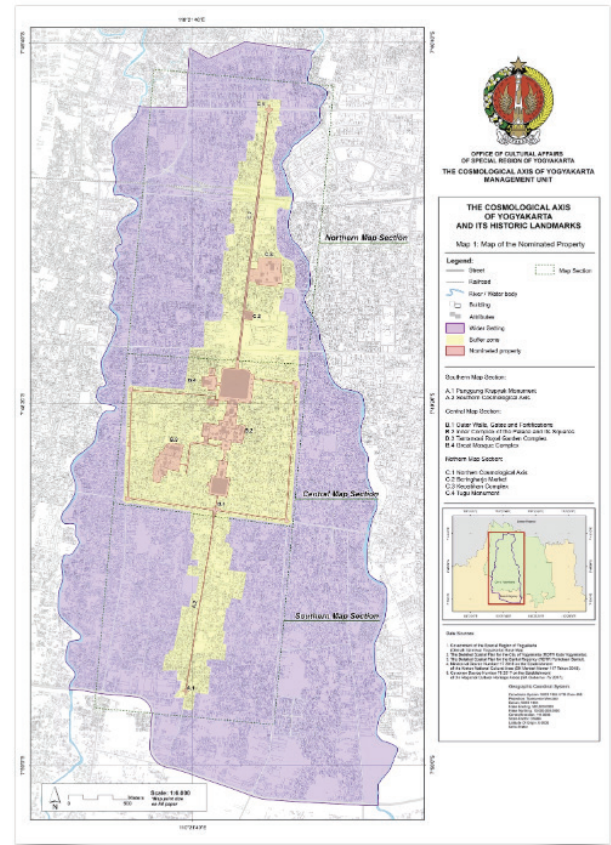
1. Relationship of Management Plan with SRS (Strategic Spatial Unit)

- SRS Sumbu Filosofis is part of the product of the special status of DIY (Law No. 13 of 2012) which compiles space based on Javanese cultural philosophical values.
- This Management Plan is substantially in line with the principles and regulations of SRS, because both prioritize:
 - o Preservation of the symbolic meaning of space (from Panggung Krapyak – Kraton – Tugu)
 - o Restriction of building height
 - o Orientation and morphology of space that reflects Javanese cosmology

In other words, the Management Plan strengthens and legitimizes the existence of SRS, especially in spatial and development arrangements.

2. Relationship between Management Plan and RDTR of Yogyakarta City

- The Yogyakarta City RDTR still uses a technocratic and functional approach: designating the Malioboro area and its surroundings as a commercial zone (K1/K4).
- This has the potential to conflict with the stricter guidelines in the Management Plan and SRS in limiting the function, scale, and appearance of buildings.
- The RDTR opens up opportunities for the construction of hotels or high-rise buildings, while the SRS and Management Plan prohibit them in order to maintain authenticity and heritage value.



The Map of The Cosmological Axis of Yogyakarta and Its Historic Landmarks Area

J. P O T E N T I A L O F MANAGEMENT PLAN IN OVERCOMING SPATIAL PLANNING CONFLICTS IN YOGYAKARTA

Because it concerns spatial management to protect one of the world heritages, namely protecting the Outstanding Universal Values of the Yogyakarta Philosophy Axis, the substance of the Management Plan must be positioned in the highest hierarchy in spatial planning. Therefore, in substance the Management Plan has the potential to resolve spatial conflicts.

Role	Explanation
International legitimacy documents	As a UNESCO prerequisite, the Management Plan is morally and politically binding, even for the central government.
Harmonization reference	The Management Plan can be used as a basis for adjusting the RDTR to accommodate cultural values and world heritage area preservation regulations.

Development control instruments	Providing detailed guidance on conservation zoning, visual restrictions, building materials, and tourism management.
Cultural diplomacy tools	With UNESCO recognition, the DIY Regional Government has a stronger bargaining position to defend the SRS approach in the face of national regulations.

The Management Plan strengthens the legal position and cultural values of the SRS, while forcing the RDTR to adjust through revisions to zoning, technical directives, and development controls. Its existence also provides a strong basis for rejecting development that is contrary to the vision of preserving world cultural heritage in the area.

Aspect/ Substance	Management Plan (MP)	SRS (Strategic Spatial Unit)	RDTR (Detailed Spatial Planning)	Integration/ Harmonization Required
Legal Base	UNESCO Decree & DIY Governor Regulation	Law No. 13 of 2012 & Regional Regulation/ Governor Regulation	Law No. 26 of 2007 and PP No. 21 of 2021	RDTR needs to recognize MP & SRS as special directors
Coverage Area	Core Zone, Buffer Zone & Wider Setting	The axis area of the Krapyak Stage – Kraton – Tugu	The entire area of Yogyakarta City, with micro zoning	Adjustment of RDTR zoning in the SRS/MP area
Main spatial function	Protection of Outstanding Universal Value	Preservation of philosophical and cultural values of speciality	Land use planning (commercial, residential, etc.)	Synchronization of strategic cultural space functions
Zoning and boundaries	Very strict: building height restrictions, spatial orientation	Sacred zone, height limit, building orientation	Generally loose, opens up space for investment & high rise buildings	Revise RDTR to adopt SRS/MP prohibition zones

Institutional	UNESCO, DIY Regional Government, City Government, Kraton	DIY Regional Government, Special Administrative Region, Kraton	Yogyakarta City Government, Technical Service, ATR/ BPN	Cross-institutional forum for coordination
Licensing	Indirect, but strong normative influence	Not included in the OSS system, used as a consideration	Integrated OSS and national Approval of Suitability of Spatial Utilization Activities (PKKPR)	OSS must recognize MP & SRS areas
Planning approach	Preservation of universal and cultural values	Cultural, philosophical, symbolic	Technical, spatial, functional	Revise the RDTR approach to be more culturally sensitive
Legal force status	Mandatory after UNESCO designation	Regional legal products (Perdais/Pergub)	Technical regulations for district/ city spatial planning	RDTR Regional Regulation must accommodate MP & SRS as reference documents
Concrete setting example	Ban on tall buildings around Tugu – Kraton	Morphological arrangement and orientation of traditional buildings	Allowing commercial functions in Malioboro and surrounding areas	Harmonization of technical arrangements through revision of RDTR

K. THE ROLE OF CENTRAL AND REGIONAL GOVERNMENTS IN OVERCOMING OVERLAPPING SPATIAL PLANNING

The previous presentation very clearly shows that there are spatial regulations that are not harmonious and have the potential to cause obstacles in the development process in Yogyakarta and will further result in a chaotic urban landscape. However, with a collaborative approach

and harmonization of regulations, Yogyakarta can be an ideal example of spatial planning that maintains cultural values while attracting quality investment.

To achieve all of this, a strong role of the Regional Government is required in overcoming these problems, including:

1. Harmonization of Planning Documents

- Revision of the Yogyakarta City RDTR to accommodate values and preservation zones in the SRS.

- Merging the Sumbu Filosofis area as a special cultural protection zone in the RDTR.
- Synergy between Paniradya Kaistimewan, Dispetaru, and Bappeda of Yogyakarta City to compile mutually supportive documents.

2. Integration of SRS into the OSS System

- Proposal to the Ministry of ATR/BPN so that the SRS area is registered in the indicative map accessed by OSS.
- Developing preservation parameters (building height, orientation, building materials) as a prerequisite for licensing.

3. Socialization and Education for Investors

- The DIY and Yogyakarta City governments need to create a culture-based investment guide, so that investors know the limitations from the start.
- Provision of digital information about the SRS area through a GIS system or public portal.

4. Development of a Harmonious Investment Scheme

- Encourage investments that strengthen cultural values: thematic restaurants, cultural galleries, traditional MSMEs, homestays with local architecture.
- Incentives for development that meets preservation criteria (can be through fiscal incentives or ease of permits).

L. CONCLUSION

To conclude, the spatial planning in Yogyakarta in the future must be able to become a harmonious bridge between investment needs and the preservation of cultural values. The preparation of the RDTR, management of the Strategic Spatial Unit (SRS), and implementation of the Management Plan need to be directed at the integration of economic interests with the protection of cultural heritage, so that every development policy not only encourages investment growth, but also strengthens the identity and sustainability of local culture. With cross-sector collaboration, transparency, and inclusive public participation, Yogyakarta can become an example of an investment-friendly city while still upholding cultural values, creating a competitive living space without losing its identity.

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Colonial Legacies and Migration

Localized Practice of Spanish Colonial Urban Planning Traditions in Asia: A Case Study of Intramuros, Manila in the 16th-17th Centuries

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Abstract

This study examines the localized practice of Spanish colonial urban planning traditions in Asia through the case of Intramuros, Manila, and its surrounding *pueblos*. While prior research has mainly focused on architectural elements, this study shifts the perspective to the city scale, analyzing how Spanish urban ideals were adapted to Manila's unique conditions. Drawing from the experiences of the *Reconquista*, *Las Leyes de Indias*, and colonial strategies in the Americas, Spanish planners imposed a structured spatial order. However, local climate, defense concerns, and socio-economic dynamics necessitated modifications, leading to a distinctive colonial urban form. By highlighting the interplay between imported urban planning principles and local adaptations, this research seeks to provide a clearer understanding of the historical significance of the city's landscape.

Keywords:

Colonial Urbanism, Hispanic urbanism, Philippines, Spatial Adaptation, Fortifications

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Introduction

In 1571, the Spanish Governor of the Philippines, Miguel López de Legazpi (1502 – 1572), proclaimed the establishment of a settlement in Manila. In the ensuing years, walls, *fortaleza* (fortress), and *baluartes* (bastions) were constructed along the southern bank

of the Pasig River, creating a fortified city known as Intramuros. For over two centuries, the city and its surrounding *pueblos* (Extramuros) formed the centre of Spain's colonial endeavors in Asia. Its spatial layout reflected the adaptability of Spanish colonizers in response to

the diverse actors in the region and the complexities of international relations. Today, the walls of Intramuros continue to stand at the heart of Manila, remaining one of the most famous tourist attractions in the Philippines. This study aims to explore both Intramuros and Extramuros on an urban scale, examining the historical context and various factors that influenced their spatial structure.

The Birth of Manila: From Barangay to International Port City

During the Spanish colonial period, the term “Manila” encompassed the geographic expanse along the northern and southern banks of the Pasig River, including both Intramuros and its adjacent *pueblos* and *arrabales*, collectively referred to as Extramuros. The following paragraphs delineate the evolution of Manila from a nascent settlement into an international port city.

Barangay

Manila region was originally a low-lying, unstable delta wetland. By the 11th century, the land had gradually risen into a stable plain, attracting settlements. These settlements were organized into small units known as *barangays*, the fundamental social and political structure of Tagalog society¹. Over the centuries, these coastal *barangays* developed into a sophisticated political and social hierarchy through extensive trade with China, India, and other Southeast Asian islands.

The Kingdom of Maynila

With the expansion of population and settlement, a more centralized form of

governance emerged by the 16th century, named the Kingdom of Maynila (circa 1500–1571). The ruling elites of the kingdom predominantly identified as Muslims, whereas the indigenous Tagalog populace, belonging to the Austronesian ethnolinguistic group, practiced a blend of animism alongside influences from Buddhism, Hinduism, and Islam, acquired through commercial exchanges. Notably, Maynila lacked extensive defensive fortifications, largely due to the absence of substantial external threats. When the Spanish first arrived, they documented the royal area—later the site of Intramuros—as being encircled by wooden palisades, supplemented by fortifications composed of coconut trunks filled with soil and equipped with light artillery²².

An International Port City

Felipe II de España (r. 1556–1598) initiated the Spanish colonization of the Philippines. After shifting colonial footholds from Cebu to Panay, Miguel López de Legazpi declared Manila a city. Within a few decades, the layout of a city took shape, featuring a *plaza mayor*, a cathedral, and the *Palacio Real*, from which a grid system expanded outward. In response to the pirate Limahong’s incursion in 1574, wooden defensive walls were constructed, formally defining the city’s periphery. Subsequently, *Fortaleza de Santiago* was established at the estuary of the Pasig River. By the early 17th century, Manila’s fortifications were further strengthened with stone walls, *fosos* (moats), and baluartes. Intramuros primarily housed the colonial

¹ Scott, W. H. (1994). pp.4-6

² Chao, Y. H. (2015). p.28.

government and religious institutions, while Extramuros became home to Chinese, Japanese, and indigenous Filipino settlements. These groups engaged in trade and labor, contributing to the city's economic activity. At this stage, Manila had become a heavily fortified yet bustling port city, driven by international commerce [fig.1].

8th to the 15th century. During this era, Christian kingdoms perceived cities as crucial military units, rapidly establishing new settlements in strategically salient locations³. To consolidate control over newly acquired territories, Spain instituted a series of demographic, social,

3 Crouch, Dora P; Garr, Daniel J; Mundigo, Axel I;. (1982). pp.26-27.



Fig.1. View of Manila on the Lid of the Arcón Filipino. The depiction, by an unknown author, showcasing Intramuros and its surrounding *pueblos* in the first half of the 17th century. Source: Museo de Arte Jose Luis Bello, Puebla. Mexico.

Spanish Urban Planning Perspectives in the Late 16th Century

Intramuros and Extramuros reflects contemporary Spanish perspectives on city planning. The following section outlines its historical development, from the Late Middle Ages to the Age of Exploration and finally to the establishment of Intramuros in the latter half of the 16th century.

Urban Planning in Late Medieval Spain: Conquest, Defense, Paradise, and Order

Spain's urban planning experience was significantly influenced by the *Reconquista*, which spanned from the

and urban policies collectively known as *Repoblación*, which included the settlement of Christian migrants. Cities that developed under this policy frequently originated as military bases or were created to manage the Muslim *mudéjares*⁴. A pertinent example of the former is Santa Fe, a military base established by the Catholic Monarchs during the 1491 siege of Granada. This city was enclosed by rectangular walls and featured a grid layout with two perpendicular main streets leading to four gated entrances. At the intersection of these streets was

4 Gutkind, E. A. (1967). p.242.

the *plaza mayor*, which was surrounded by the royal palace, municipal hall, and church. An illustration of the latter is Villarreal[fig.2, right], which exhibited a similar city plan to that of Santa Fe, incorporating round bastions at each corner to accommodate strong defensive needs.

Beyond the physical construction of urban environments, Spanish urban planning was profoundly influenced by Christian ideals. The conception of an ideal city was often informed by the biblical vision of *La Jerusalén del Cielo*[fig.2, left]. During both the *Reconquista* and the subsequent American colonization, Spain endeavored to establish *Orden* through

barbarism, paganism, and disorder⁵. This ideology was institutionalized in royal and ecclesiastical texts; for instance, *Las Siete Partidas*, compiled under King Alfonso X of Castile (r. 1252–1284), defined a city as a space enclosed by walls, its perimeter marked by fortifications, towers, and gates—elements regarded as sacred and inviolable. Similarly, the Catalan Franciscan friar Francesc Eiximenis (1330–1409), in his work *Lo Crestia* (c. 1380s), articulated that an ideal city should possess a square layout, a palace adjacent to high defensive walls, and a central plaza at the highest elevation featuring a church, all structured in a cross-shaped spatial arrangement.

⁵ Gutkind, E. A. (1967). p.242.

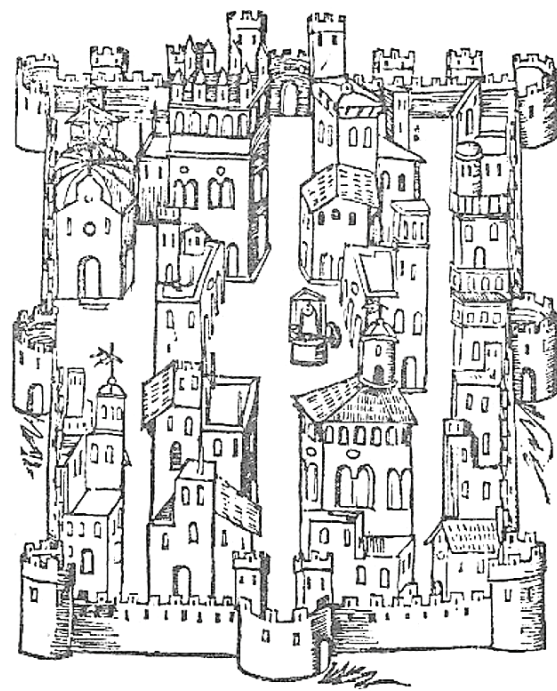
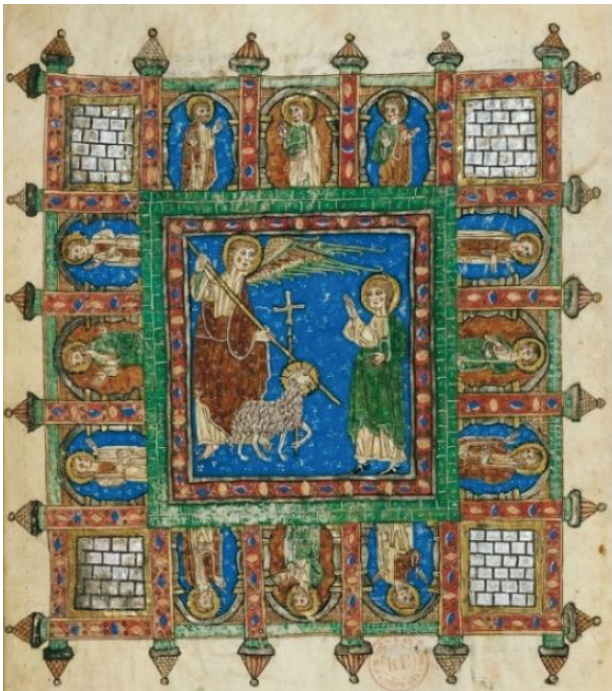


Fig.2. (left) *La Jerusalén del Cielo*. Source: Bibliothèque Nationale, Paris, N.a.l. 2290, fol.161v.
(right) Villarreal in 1564. Draw by Rafael Martí Vicianá in his book *La Crónica de la ínclita y coronada ciudad de Valencia y de su reyno*. Source: Bayarri, J. V. G. (2015).

the founding of cities. The city itself symbolized Christian civic society, while the surrounding wilderness represented

Spanish Urban Planning in the Americas: Plaza Mayor and Grid Systems

Christopher Columbus (1451–1506) set sail for the Americas in 1492, marking the beginning of the Age of Exploration. During this epoch, the Spanish established numerous colonial settlements in the New World, progressively developing a systematic spatial model. By the time Intramuros was founded in the 1570s, King Philip II had enacted *Las Leyes de Indias*⁶. This legal framework not only integrated urban planning experiences from the Americas but also drew upon medieval resettlement policies, religious ideologies, and Renaissance perspectives influenced by Italy and the Low Countries.

Las Leyes de Indias addressed three principal themes in urban planning: site selection, layout, and defense. With respect to site selection, Spanish colonial cities were categorized as either inland or coastal, with Manila classified as a coastal city. The code recommended the establishment of towns in proximity to ports that offered geographical advantages for transportation, commerce, and defense⁷. Examples of Spanish colonial port cities include Santo Domingo, Panama

City, and Cartagena. Santo Domingo and Panama City were strategically positioned on the western banks of river estuaries, while Intramuros was located on the southern bank⁸.

In terms of urban layout, *Las Leyes de Indias* established a framework of spatial planning principles, which included the following⁹:

- Dimensions of the *plaza mayor*: A rectangular space measuring 400*600 pies (Spanish feet)¹⁰.
- Street Hierarchy: Major roads extended from the four midpoints of the *plaza mayor*, and two additional streets branched from each corner.
- Orientation: The corners of the *plaza mayor* were to align with the four principal wind directions.
- Location of the Church: The church was to be located in an independent area, elevated on high ground, and visible from all sections of the town.

For example, Santo Domingo featured a well-organized rectangular grid with an east-west axis parallel to the coastline, tilted at a 30-degree angle [fig.3, left]. Each block incorporated internal courtyards, and the city center was dominated by a cathedral. Similarly, Panama City was designed around the *plaza mayor*, with orthogonally aligned streets and land parcels. The principal roads extended east-west, running parallel

6 The original title is “*Ordenanzas de descubrimiento, nueva población y pacificación de las Indias dadas por Felipe II, el 13 de julio de 1573, en el bosque de Segovia*”. In academic discussions, this ordinance is commonly referred to by its abbreviated name, with *Las Leyes de Indias* being the most widely used term. Besides, the “*Las Leyes de Indias*” discussed in this research does not refer to *Recopilación de las Leyes de los Reynos de las Indias*, a legal code issued by King Charles II of Spain in 1680.

7 “*When establishing a town near a riverbank, the eastern bank should be chosen.... As the sun rises, its light will first shine upon the pueblo before reaching the water.*” (*Las Leyes de Indias*, Article 40) “*A coastal location should not be chosen... unless it is near a port, where accessibility, trade, and defense necessitate it.*”(Article 41)

8 “*If the site is in a coastal area, port conditions must be considered.... Avoid locations where the sea is to the south or west.*” (Article 111-2)

9 Dimensions of the plaza mayor (Article 113), street hierarchy and the city’s orientation (Article 114), and the location of the Church (Article 124)

10 One Spanish pie is approximately 28.5 cm. Thus, the dimensions of 400*600 pies are roughly 114*171 meters.

to the coastline, with the cathedral and municipal hall prominently positioned on the eastern side of the plaza[fig.3, right].

Regarding defensive structures, Santo Domingo benefited from natural barriers: its southern and eastern flanks were shielded by water, and its northern terrain was rugged, complicating any potential attacks. The *Sir Francis Drake in Santo Domingo* (1586) depicts its western boundary fortified with walls, which featured three city gates. At the river's mouth stood the *Fortaleza Ozama*, designed by an Italian architect¹¹ [fig.3, left]. On the other side, the *Planta y Prospectiva de la Ciudad de Panamá* (1586) illustrates a major *fortaleza* situated south of the primary port, separated by a moat. Proposed fortifications aimed to enclose the western and northern landward

existing settlement patterns, colonial cities in the Americas afforded Spanish authorities the opportunity to impose *Orden* directly through spatial planning. The *plaza mayor* and grid system served as symbols of Spanish culture and imperial grandeur. While medieval cities were defined by defensive walls, American colonial cities frequently lacked such fortifications. Few coastal cities, such as Santo Domingo, constructed walls in response to pirate threats, while the majority remained open and unwalled for two primary reasons: for one, American indigenous resistance was not regarded as a significant military threat; second, Spanish colonial ideology viewed indigenous peoples as inferior yet subjects of the Spanish Crown, considered souls in need of Christian salvation¹². In this

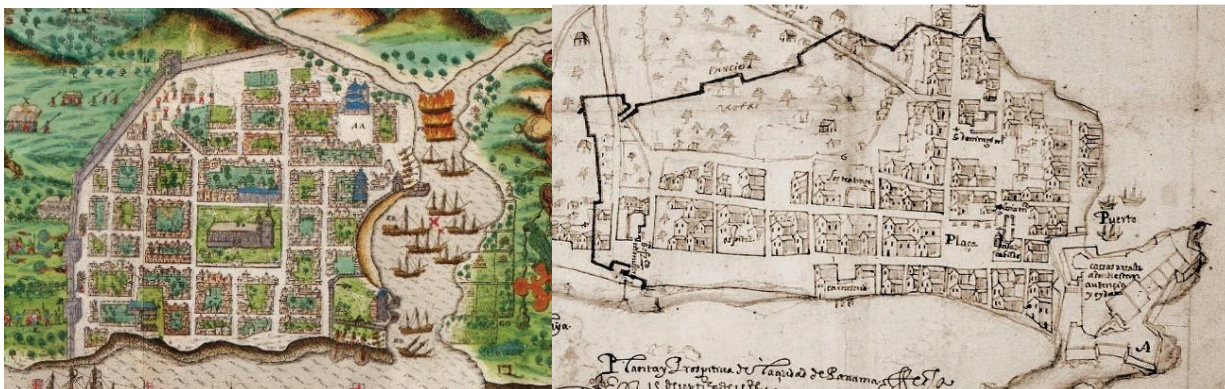


Fig.3. (left) *Sir Francis Drake in Santo Domingo*. Draw by Giovanni Battista Boazio in 1586. Source: Jay I. Kislak Collection Rare Book and Special Collections Division, Library of Congress (25.3). (right) *Planta y Prospectiva de la Ciudad de Panamá*. Draw by Bautista Antonelli in 1586. Source: Image courtesy of the Archivo del Museo Naval, Madrid, Spain.

perimeters, with bastions projected at the northwest and southwest corners[fig.3, right]; however, these fortifications were never fully realized.

Unlike late medieval Spanish cities, where urban planning had to adapt to

context, the construction and maintenance of physical walls were perceived as both a misallocation of resources and an unnecessary provocation. Instead, the Spanish implemented a “muro espiritual¹³” as a substitute for physical

11 布野修司, & Jimenez Verdejo, J. R. (2013). p.199.

12 Wyrobisz, A. (1980). p.30.

13 Kagan, R. L., & Marias, F. (2000). p.34.

fortifications. Consequently, most American colonial cities lacked clearly defined boundaries¹⁴, and the emblem of urban order transitioned from the medieval city wall to the colonial grid system.

Continuity and Adaptation of Spanish Urban Planning Traditions in Manila: Enclosed or Open, Defensive or Cooperative

By examining the case of Manila alongside examples from the Americas, it becomes clear that the principles guiding the location and layout of Intramuros were derived from the same inherited tradition. Features such as the *plaza mayor*, grid system, and the cathedral standing prominently at the edge of the plaza are characteristic of a typical Spanish colonial city. A direct comparison can be drawn with Santo Domingo, another port city, as both exhibit a similar spatial organization: their urban axes align parallel to the coastline, religious edifices dominate the cityscape, and a huge *fortaleza* was established at the river mouth from the outset. Plus, both cities reinforced their walls and defensive structures by the late 16th century in response to foreign invasions. However, the political and social contexts of the two cities were markedly different. Santo Domingo dealt with clear external threats—such as pirates and various European military forces—while the Spanish in Manila navigated a more complex relationship with the diverse ethnic communities present. This intricate dynamic is reflected in the city's spatial

organization.

The map *Descripción Geométrica de la Ciudad y Circunvalación de Manila y de sus Arrabales al Consejo de las Indias...* (1671) illustrates the distribution of *arrabales* and *pueblos* surrounding Intramuros [fig.4]. These settlements, situated in close proximity to Intramuros, underscore their strong connections to Spanish society through trade, labor, and the provision of daily necessities. However, the defensive system reveals underlying tensions: for example, the *cortinas*¹⁵ (curtain walls) directed toward these settlements were fortified with *baluartes* specifically aimed at the Chinese *Parián*, the Japanese *Diláo*, and the indigenous community of *Bagumbayan*. The level of fortification targeting these external settlements even surpassed that of the *cortinas* facing Manila Bay and the banks of the Pasig River¹⁶. These features suggest that, in addition to countering maritime threats, the Spanish in Manila were particularly focused on monitoring and defending against the non-Spanish communities residing in the *Extramuros*.

Intramuros exemplified the defensive and enclosed nature typical of a medieval Spanish city, while simultaneously, the whole region functioning as a multicultural trading hub in Asia. Strategically located at the intersection of the South China Sea and the Indian Ocean, Manila emerged

¹⁵ These curtain walls are named *Cortina del Parián*, *Cortina de Diláo*, and *Cortina de Bagumbaya*.

¹⁶ Along the coasts of Manila Bay and the Pasig River, there were six *fortines* (small fortresses) and a *reducto* (redoubt). In contrast, the other three sides of the city were protected by *baluartes*, double-layered *Foso-Contrafoso*, and additional defensive structures. On the side facing *Parián*, a *tenaza* (tenaille) was constructed, and on the side facing *Bagumbayan*, a *revellin* (ravelin) was placed.

¹⁴ Hardoy, J. (1973). p.319.

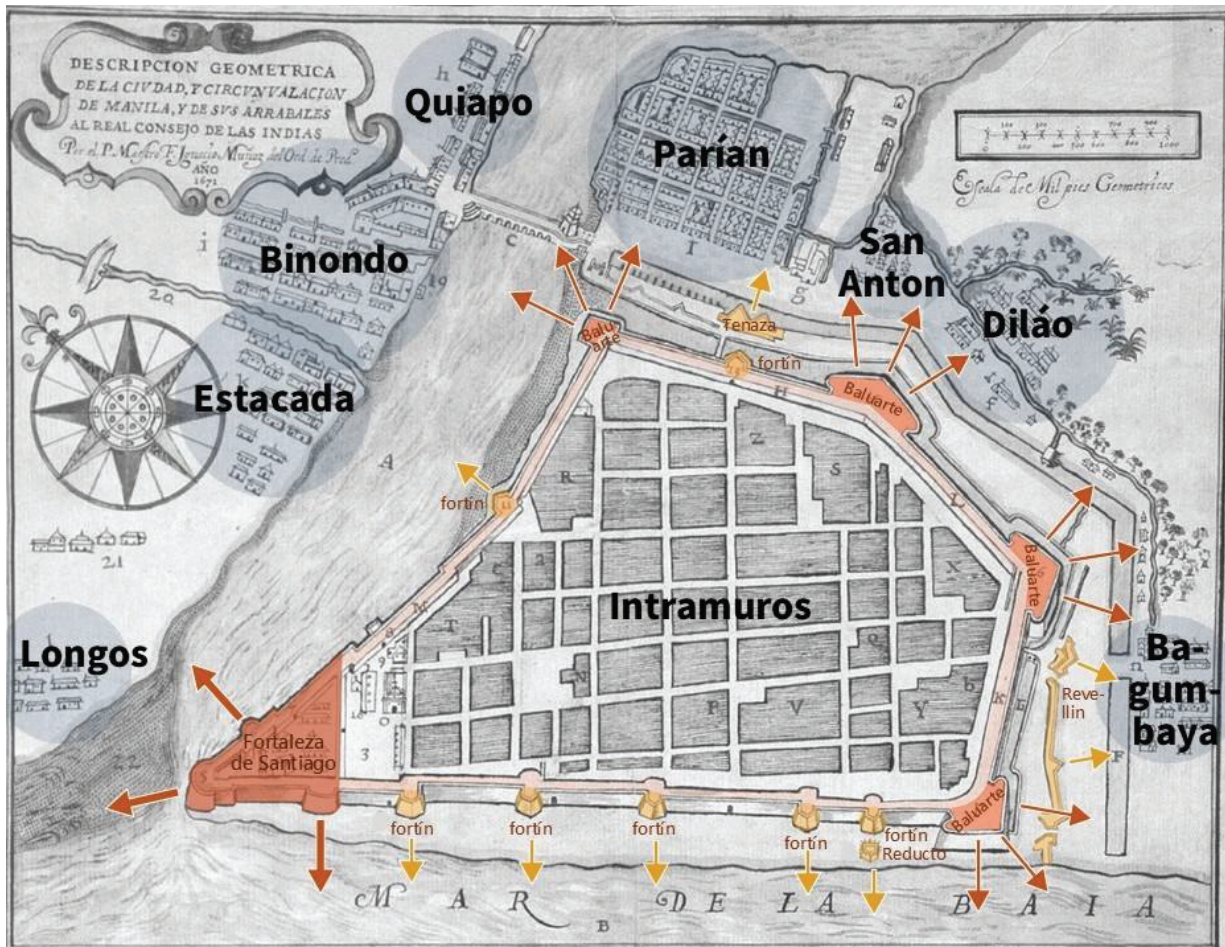


Fig.4. *Descripción Geométrica de la Ciudad y Circunvalación de Manila y de sus Arrabales al Consejo de las Indias*. Source: Archivo General de Indias, MP-FILIPINAS,10

as a significant center of commerce even prior to the Spanish colonization, thereby establishing a historical precedent for cultural openness and engagement with diverse external influences¹⁷. Comparative analysis reveals that other Asian trading hubs, such as Banten and Ayutthaya, developed analogous spatial patterns, characterized by a central walled core surrounded by distinct ethnic enclaves¹⁸. The subsequent establishment of the Dutch colonial city of Batavia further illustrated this spatial model, which regarded East Asian residents as a potential threat¹⁹.

17 Tremml-Werner, B. (2015). p.282.

18 Ibid. p.292.

19 黄恩宇(2024).

In the context of operating a port city in Asia during this epoch, facilitating the coexistence of varied cultural groups crossing cultural and political boundaries was paramount. This necessity rendered the Spanish rulers in Manila uncertain and ambivalent in their governance strategies. For the Spanish, colonies were generally conceived as extensions of the empire, with inhabitants regarded as subjects of the crown—an ideological stance entrenched in their experiences in the Americas. However, the influx of foreigners in Manila, hailing from influential states such as China and Japan, as well as intricate maritime trade networks, compelled Spanish



Fig.5. Details of fig.1, showing Parián (top), Intramuros (bottom left), Binondo (presumed, bottom center) and Bagumbayan (presumed, bottom right)²⁰. Source: Photographed by the author from the *Manila Galleon: From Asia to the Americas* exhibition at the Asian Civilisations Museum (ACM), Singapore, January 2024.

²⁰ Within Intramuros, most buildings were European-style two-story structures with entrances located on the gable end, constructed from stone or brick. In contrast, the Chinese Parián, likely due to frequently relocations, consisted of simple houses built with readily

authorities to reassess their position. The Spanish grappled with categorizing these diverse groups, operating within Spanish-controlled territory, as subjects, partners, or adversaries.

Moreover, beyond the confines of Intramuros, the Spanish found it untenable to replicate the colonial

paradigms established in the Americas, wherein political authority and religious hegemony were asserted through spatial design. The landscape of *Extramuros* presented a heterogeneous amalgamation of cultures, thereby impeding the Spanish from effectively manifesting the grandeur of their empire or showcasing Iberian

traditions in a convincing manner²¹, as the depiction of *Parián* in the *View of Manila on the Lid of the Arcón Filipino* [fig.5]. The painting portrays a Christian cross, which symbolizes Catholicism. In contrast, the figures are depicted in attire emblematic of Ming dynasty styles, and the architectural representations adhere to traditional *bahay kubo* structures, featuring wooden and *caña* (bamboo) frameworks complemented by *nipa* (thatched palm) roofs²² [fig.5].

Conclusion

This study has explored the practice and evolution of Spanish urban planning traditions in Manila, offering a perspective on the historical significance of the spatial structure at an urban scale. Unlike current preservation efforts in Manila, which focus primarily on individual buildings, this research suggests that future historical conservation should prioritize reconnecting Intramuros with the surrounding *pueblos*. The following are the key historical values :

Continuity and adaptation of Spanish colonial strategies in Asia

Intramuros embodies the accumulated urban planning experience of the Spanish from the late medieval period through the Age of Exploration, featuring elements such as the *plaza mayor*, grid system, cathedral, and walled fortifications. However, its defensive structures and the

dense clustering of *pueblos* outside its walls reflect a shift in Spanish colonial policy—from a singular, top-down rule to a more complex network of relationships, and from an entirely closed space to one that gradually accepted openness.

A history beyond the Spanish narrative

Manila's history is not solely defined by the Spanish perspective, nor was Intramuros a self-sufficient entity. A more complete historical understanding emerges only when the surrounding settlements are considered. Therefore, future preservation efforts should focus on representing the relationships among Spanish colonizers, diverse actors, and indigenous Filipinos, as well as examining how these groups organized their urban spaces within their respective enclaves.

Manila's significance in a broader regional and global context

Manila's historical value extends beyond the Philippines. Examining the city on an urban scale allows for a deeper understanding of its role in Asia and the trans-Pacific trade network. Future research could further explore Manila's connections with other Spanish colonial cities and Asian colonial ports, fostering comparative discussions across regions.

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21 Tremml-Werner, B. (2015). p.292.

22 According to Reed, R. R. (1978). pp. 43-44, the Spaniards initially built their houses using readily available traditional Filipino materials. However, after experiencing frequent fires, they gradually abandoned these highly flammable materials and instead encouraged the use of more durable construction materials such as stone and brick.

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Reinterpreting Military Cultural Heritage: The Early Modern Dutch East India Company Legacies in Asia.

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Abstract

This study examines Taiwan's engagement with its colonial material legacies through the Tainan 400 initiative, in comparison with cases in Jakarta and Ambon, Indonesia. By analyzing spatial governance, cultural memory, and local participation, it argues that colonial heritage preservation is a form of cultural politics, not merely cultural management. In Taiwan, the Dutch colonial legacy—distanced by time and ruptured authority—has been selectively depoliticized and reappropriated, contrasting with the more politically charged Japanese and KMT eras. However, drawing on Smith's (2006) critique of the Authorized Heritage Discourse, the study cautions against equating civic participation with critical historical engagement. The comparative cases highlight Jakarta's top-down, institution-led revitalization of Kota Tua and Ambon's grassroots reinterpretation of colonial memory. Ultimately, the paper concludes that navigating colonial heritage demands a balance between conservation and critique, grounded in plural participation, historical justice, and epistemic openness. Such an approach enables ethical local agency and fosters transnational dialogue within a dynamic field shaped by identity, accountability, and cultural power.

Keywords:

1, Urban Preservation 2, Colonial Architecture 3, Memoryscape 4, Adaptive Reuse 5, Postcolonial Identity

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Introduction

Contemporary Asian cities increasingly grapple with the cultural legacies of colonial rule, a pressing issue in cultural politics and memory studies. Colonial military architecture, a material trace of imperial power, often becomes a site of contested meanings across national and local contexts. In Taiwan, responses to colonial heritage vary: Japanese and post-war sites remain politically charged, while older Dutch and Qing legacies—distanced by time and political rupture—are more readily integrated into local culture and urban memory. These variations highlight the entangled dynamics of memory, temporality, and politics in postcolonial heritage discourse.

This paper examines Dutch East India Company (VOC) military heritage, using Taiwan's recent "Tainan 400" initiative as a starting point. It then compares heritage reinterpretation in Jakarta's Kota Tua and Ambon's colonial forts. These cases, shaped by differing political systems, institutional conditions, and local engagement, reveal colonial heritage's evolution from passive preservation to active reinterpretation. Adopting a comparative, transregional lens, the paper explores how these legacies are renegotiated at the intersection of local knowledge, institutional frameworks, and collective memory—positioning heritage as a dynamic site of cultural negotiation and historical reconstruction.

Colonial Heritage and the Construction of National Identity

Engaging with the material and symbolic legacies of colonial rule has become a pressing and contested issue in modern nation-state formation. As Benedict Anderson (1983) argued, nations are imagined communities lacking inherent shared memories before state formation. Constructing national narratives thus involves reinterpreting the past through heritage practices, a political and cultural process.

Colonial heritage, particularly military architecture, holds an ambivalent position. More than mere remnants, these structures embody imperial power while evoking cultural trauma, contested memory, and symbolic capital. Drawing on Laurajane Smith's (2006) view of heritage as an active cultural process, this paper conceptualizes colonial military heritage as an intersection of institutional narratives, collective memory, and identity politics. Scholarship on "trauma-informed heritage" (Feakins et al., 2024) further highlights their emotional and political weight in societies grappling with imperial violence.

Building on this framework, the paper investigates how postcolonial societies reinterpret VOC military heritage within contemporary cultural and political contexts, focusing on "Tainan 400" in Taiwan and Kota Tua (Jakarta) and Fort Victoria (Ambon) in Indonesia. These sites offer contrasting examples of colonial legacies' integration, transformation, or contestation through

urban policy, institutional mediation, and local participation.

Through a comparative, transregional approach, this study explores how colonial heritage is mobilized in constructing national and local identities, and how heritage practices reflect broader dynamics of postcolonial governance, historical representation, and cultural negotiation.

Taiwan's Engagement with Colonial Heritage

Taiwan's urban development reflects layered historical regimes: the Dutch colonial period (1624–1662), the Ming Zheng regime (1662–1683), the Qing Dynasty rule (1683–1895), the Japanese colonial period (1895–1945), and the post-1945 Kuomintang (KMT) colonial rule (1945–present). Each period left distinct spatial legacies. Tainan originated with the Dutch-built Fort Zeelandia and city, the island's first planned colonial city (翁佳音, 2017; 黃恩宇, 2019). The Ming Zheng regime restructured it into Taiwan-fu (連橫, 1976), Qing-era development extended around Fort Provintia, and the Japanese modernized infrastructure (曾國棟, 2024; 洪嘉呈, 2024). The KMT colonial regime largely retained these frameworks.

Serious engagement with colonial heritage emerged after martial law ended in the 1990s. Memory discourse initially focused on the Japanese era (Chang, 2014), while postwar trauma was institutionalized via 228 Peace Memorial Day (National Archives, 2008; 張炎憲, 2006). Once-neglected Japanese sites

were reframed as cultural assets amid a broader pluralist turn.

In contrast, Dutch and Qing sites—more historically distant and politically detached—face fewer sensitivities. Structures like Fort Zeelandia or the Tainan Prefectural City Wall (Qing) are now seen as shared heritage rather than symbols of trauma. Initiatives like “Tainan 400” (2024) and “IF 300” (2025) frame these sites through cultural identity rather than political contestation (FHCCR, 2025).

This raises key questions: Why are older colonial legacies more readily embraced? Does historical distance reduce tension? How has scholarship helped reframe these sites as cultural origins or urban identity anchors? The next section explores these questions through the case of “Tainan 400,” analyzing how early colonial heritage is reinterpreted via planning, research, and community action.

The Development and Reflections on the “Tainan 400” Project

Academic Research as Foundational Support

The 2024 “Tainan 400” initiative builds on years of research and excavation of Dutch fortifications in Taiwan. Professor Huang's team at National Cheng Kung University has reconstructed Fort Zeelandia and Fort Provintia (17th-century VOC occupation) using archival documents, historical imagery, site analysis, and digital modeling (黃恩宇, 2019, 2022). Professor Liu's archaeological work uncovered key remains of Fort Zeelandia (李德河, 2006),

while Professor Chen's excavations revealed Fort Provintia's structural features (陳維鈞, 2017, 2019), confirming their historical importance and offering insights into early colonial urban life.

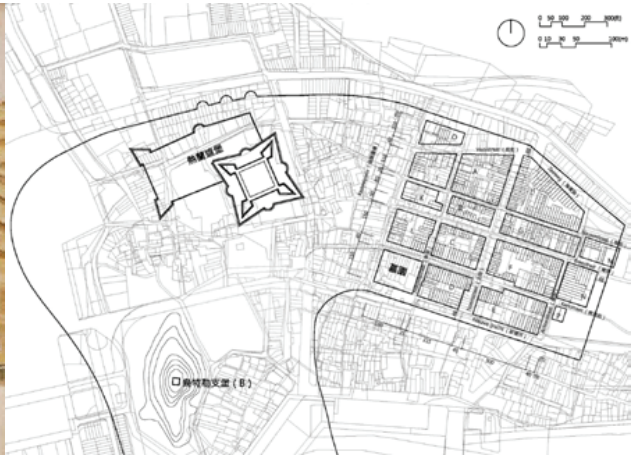


Fig.1. Reconstructed Fortress and City Plans Based on a Comparative Study of 1648 Antique Maps. Source: from 黃恩宇, 2019.



Fig.2. Archaeological Site Exhibition of the Zeelandia Settlement in Tainan. Source: captured by the author, 2025.

Based on this research, the Taiwanese government is formally reassessing both forts' heritage value (黃恩宇, 2023), following international guidelines (ICOMOS) to understand them as part of a broader historical landscape, informing conservation and public engagement (Kyriakidis, 2019).

Academic research is crucial for such initiatives, as the Burra Charter emphasizes "understanding and assessing

scholars, officials, and communities, enabling critical interpretation and social integration of early colonial heritage.

Community Engagement in the "Tainan 400" Initiative

"Tainan 400" is not a single event, but a city-wide cultural experiment centered on historical memory. (Tainan City Government, 2025) Beyond marking 400 years since Tainan's founding, it critically engages with colonial

history and strengthens local identity. Government, academia, and communities collaborated to transform colonial sites from passive landmarks into active spaces of participation.

The city government established the Tainan 400 Project Office in 2024 to coordinate sub-projects including exhibitions, tours, forums, and workshops (Tainan City Government, 2023). Among these, the archaeological exhibition on Fort Zeelandia had the greatest impact, presenting research findings and spatial reconstructions of 17th-century urban life (fig. 2).

Partnering with universities and cultural foundations, the initiative promoted both knowledge and local connection. Programs like “Walking Tainan” guided participants along historical routes, while AR, VR, and immersive installations digitally recreated VOC-era landscapes, offering multisensory experiences (Zeelandia Museum, 2025; fig. 3).

themed on the Dutch colonial era, local groups reinterpreted heritage in creative, accessible ways. What was once an official narrative has become part of everyday civic culture (fig. 3).

This process shows that “Tainan 400” is not merely a top-down initiative, but a dynamic form of heritage-making shaped by both institutions and communities. Former symbols of domination are being reimagined through localized practices. “Decolonization” and “re-localization” unfold in tandem, turning static ruins into arenas of memory and identity, integrated into the city’s evolving historical awareness.

Reflections on the “Tainan 400” Initiative

“Tainan 400” highlighted the historical value of Dutch colonial military heritage and its urban fabric, revealing its potential in shaping contemporary identity. Spatial memory practices reintegrated colonial sites into daily life, linking history and urban experience. However, critical



Fig.3. Fort Zeelandia AR interface and user engagement, with related game launch. Source: Tainan City Government, 2023.

These efforts sparked grassroots engagement. From market branding and commemorative products to games

heritage perspectives reveal complex layers of social memory requiring deeper reflection.

Jones (2016) notes heritage's social value lies in emotional and communal significance, not just "authenticity". "Tainan 400" demonstrated this through community-led tours, cultural markets, digital reconstructions, and educational games, transforming Dutch colonial heritage into a shared cultural asset.

However, inclusive engagement led to unexpected reinterpretations. A local "Anping Fort Birthday Party" (fig. 4) reframed a site of colonial control as a joyful public event (Tainan City Government, 2024), raising questions about historical reconciliation, creative reimagining, or cultural depoliticization.



Fig.4. Local community and elementary school co-host "Happy Birthday Fort Zeelandia" event.
Source: Tainan City Government, 2024.

Smith's (2006) critique of the Authorized Heritage Discourse (AHD) adds nuance. AHD often prioritizes material aesthetics over critical reflection on colonial violence. "Tainan 400" diverges by grounding itself in research and fostering inclusive participation, avoiding simplistic colonial narratives.

However, translating this knowledge into everyday cultural practice can inadvertently echo AHD. For example,

former colonial power sites might be rebranded as appealing cultural consumption spaces, driven by public enthusiasm rather than state ideology. This well-intentioned "bottom-up" reinterpretation risks depoliticizing traumatic histories and diluting their critical potential, revealing a gap between the initial framework and public reception—highlighting tensions in shared historical practice.

Thus, while "Tainan 400" offers a promising model of research-based, community-oriented heritage engagement, its popular reinterpretations may generate new memory tensions and

historical ambiguities. These observations necessitate reconsidering colonial heritage's multiple functions as evidence of past violence, civic identity material, and a platform for public discourse and offer a critical lens for comparing how societies navigate colonial legacies today.

VOC Military Heritage and the Politics of Colonial Memory in Indonesia

Like Taiwan, Indonesia was a key node in the Dutch East India Company's (VOC)

trade network, with both regions retaining 17th-century colonial military remains. However, differences in the duration and intensity of colonial rule, and in each nation's path to independence, have led to distinct heritage interpretations, preservation strategies, and cultural narratives. Comparing these cases not only clarifies the specificity of the "Tainan 400" model, but also reveals how colonial legacies are shaped by different configurations of memory and politics.

Although VOC planning shaped both regions in the early 17th century, Indonesia underwent much longer and more intense colonial domination. After the VOC's fall, the Dutch Crown ruled for over 150 years, until independence in 1949—making Indonesia one of Asia's most extensively colonized nations (Brown, 2003). As a result, colonial-era urban and military infrastructure remains widespread, from Batavia (Jakarta) to Fort Victoria in Ambon. While some see these structures as historical testimony, others regard them as spatial manifestations of colonial trauma—what Feakins (2024) terms "traumatic heritage."¹

In contrast to Taiwan's recent participatory heritage model, Indonesia faces sharper tensions between political memory and cultural management. The government must balance nationalist sensitivities with international heritage standards and tourism goals. This "double bind" frames colonial sites as both painful national symbols and global

cultural assets, demanding a delicate negotiation between decolonial critique and conservation.

In the early 2000s, the Indonesian government began systematically documenting colonial fortifications. A major initiative, Inventory and Identification of Forts in Indonesia (2007–2010), was led by the NGO Pusat Dokumentasi Arsitektur (PDA) and Dutch consultancy PAC. The project catalogued 422 VOC-era forts and resulted in two landmark publications (PDA 2010; 2012), now key references for assessing heritage value at both official and community levels. Its focus on understanding significance aligns with the Burra Charter's principles (Australia ICOMOS, 2013), signaling a shift toward more reflexive, postcolonial heritage practices.

Yet Indonesia's heritage model remains largely technical, centered on documentation and classification. Unlike Taiwan's "Tainan 400," which combines interdisciplinary research, civic engagement, and city branding, Indonesia leans on international partnerships. This may stem from the vast number of colonial sites, uneven local governance, military control in certain areas (e.g., Ambon), and limited community participation structures. The following sections examine Jakarta and Ambon as case studies to explore how Indonesia negotiates its VOC colonial heritage.

Jakarta: VOC Heritage and the Dissonance of Urban Memory

Jakarta, formerly Batavia and the VOC's Asian hub, served as a key military,

¹ "Trauma heritage" as the material and immaterial legacies of historical trauma, which continue to influence how societies remember, interpret, and engage with the past, often raising complex ethical and political considerations. (Feakins, Barrett, & Bower, 2024)

commercial, and administrative center in the 17th and 18th centuries, playing a crucial role in colonial governance and urban planning experiments (Ampt et al., 2017; Parthesius, 2010). The Dutch presence produced an extensive system of fortifications, canals, civic infrastructure, and port facilities, alongside valuable records that underpin studies of Indonesia's colonial heritage.

By the 19th century, much of this infrastructure—most notably Batavia Castle—was dismantled as colonial priorities shifted. Surviving elements are often fragmented or subsurface, reflecting both urban modernization and what Tunbridge and Ashworth (1996) describe as dissonant heritage,² wherein symbols of former power lose visibility and are subject to neglect. Batavia's legacy thus poses both material and interpretive challenges for contemporary heritage discourse in Indonesia.

In recent years, heritage agencies in Jakarta, with support from the Indonesian Association of Archaeologists (IAAI), have re-engaged with this layered and contested legacy. Excavations at the former castle site have uncovered foundations and fortification elements, offering renewed opportunities for heritage planning and interpretation, and signaling a shift from archival documentation toward public, materially grounded engagement.

The Kota Tua (Old Town) district, containing surviving colonial buildings such as the former city hall, marketplace, and warehouses, has become a focal point of revitalization. Since the 2010s, the Jakarta Old Town Reborn (JOTR) initiative—uniting public, private, and international actors, including Dutch architects—has sought to balance preservation and urban renewal through adaptive reuse and streetscape improvements (Antaranews, 2022).

Although these tangible enhancements are significant, local community involvement in shaping narratives around these colonial spaces remains limited. As Logan (2009) notes, colonial buildings in postcolonial societies often exist in semantic suspension—appreciated for aesthetic or economic value, yet disconnected from the difficult histories they embody. Despite some participatory efforts, Jakarta's heritage planning remains largely centralized and top-down, lacking grassroots reinterpretation or critical public dialogue on colonial memory. This underscores the broader challenge of moving beyond symbolic inclusion toward reflective, community-grounded discourse.

Compared with Taiwan's "Tainan 400" initiative—which integrates archaeology, community storytelling, and public festivals—Jakarta's model has been more institution-driven. While both approaches reflect distinct contexts, the Jakarta case highlights the importance—and difficulty—of fostering inclusive, critically engaged, and socially grounded heritage strategies. Kota Tua thus emerges

2 "Dissonant heritage" refers to heritage places that evoke conflicting narratives and memories for various stakeholders. These sites often carry difficult or traumatic pasts, leading to contested interpretations and challenges in management and representation. (Tunbridge & Ashworth, 1996)



Fig.5. Fort Victoria (currently military, with well-preserved walls and stone plaques naming bastions) and the reconstructed Fort Amsterdam (post-1991). Source: captured by the author, 2019.

not merely as a site of preservation, but as a space where Indonesia continues to negotiate the meanings and memories of its colonial past.

Ambon: Localized Colonial Heritage and Memoryscapes in Eastern Indonesia

Unlike Jakarta's Kota Tua (Dutch administrative and commercial center), Ambon (Maluku Islands) reflects a more localized, militarized colonial memory-making. Since the 16th century, Ambon was a contested hub for European spice trade control. Its main fortifications, Fort Victoria and Fort Amsterdam, embody the Portuguese-to-Dutch military governance transition (Ampt et al., 2017), now the most intact, research-relevant VOC military heritage in eastern Indonesia, offering insights into Company defense and regional geopolitics (Pusat Dokumentasi Arsitektur, 2012).

Ambon's preservation challenges differ from Kota Tua's. Fort Victoria remains under military jurisdiction with limited public and research access.(fig. 5) Fort Amsterdam (Hila), structurally restored in the 1990s and public, involved original material replacement and additions,

raising authenticity and conservation concerns in postcolonial contexts (Denyer, 2011), underscoring the balance between limited resources, emerging awareness, and diverse expectations.

Despite these limitations, Ambon's military heritage retains spatial continuity and interpretive potential. 2019 surveys near Fort Victoria show little change since the 17th century, with identifiable religious and hydrological features offering landscape-based interpretation and integrated planning. A Kapitan Pattimura monument near the fort, narrating his resistance, adds political memory, creating a visual dialogue between colonial authority and anti-colonial resistance.

This spatial juxtaposition forms a "memoryscape," illustrating local agency and growing recognition of the fort's potential for urban continuity and plural identity. While lacking a "Tainan 400"-like initiative, Indonesian scholars advocate for deliberate strategies: heritage-sensitive zones, improved infrastructure, and reframing colonial sites as cultural landscapes

(Kusumaningrum, 2023), suggesting a shift from semantic suspension towards reflexive, locally grounded heritage interpretation in postcolonial Indonesia.

Conclusion

This study began with an examination of the Tainan 400 initiative to explore how Taiwan engages with the material legacies of its multiple colonial pasts, then extended the discussion to comparative cases in Jakarta and Ambon, Indonesia. By analyzing spatial governance, cultural memory, and local participation, this paper argues that colonial heritage preservation is not merely cultural management but a form of cultural politics shaped by historical re-narration and identity negotiation.

Taiwan's varying approaches to different colonial legacies reveal that historical memory is inseparable from the political and cultural contexts of the present. Dutch colonial heritage, due to temporal distance and the rupture of colonial authority, has undergone a certain "depoliticization" allowing it to be more neutrally received and even reappropriated as local cultural assets unlike the more politically charged legacies of Japanese and KMT-era rule. However, as Smith (2006) critiques in her analysis of the Authorized Heritage Discourse (AHD), participation and activation do not automatically translate into critical engagement with history. While Tainan 400 showcases a vibrant model of civic and cultural activity, its celebratory and commercial aspects merit caution, as they risk simplifying history

or reinforcing dominant narratives.

The Indonesian cases offer a valuable contrast. Jakarta's Kota Tua demonstrates how institutional support and international cooperation can revitalize urban heritage, yet limited community participation highlights gaps in cultural agency. In contrast, Ambon's commemorative landscape, shaped by the interplay of Fort Victoria and the Kapitan Pattimura monument, exemplifies how local actors—despite limited resources—can meaningfully reinterpret colonial history. This layered memoryscape suggests neither full acceptance nor outright rejection of colonial heritage, but rather a negotiated and symbolic reterritorialization.

Taken together, these cases affirm that colonial heritage preservation and reinterpretation are not mere technical interventions or singular narratives. Instead, they are deeply embedded in ongoing nation-building, historical accountability, and cultural power dynamics. Postcolonial societies must balance conservation with critique, resisting the reduction of heritage to a depoliticized commodity while remaining alert to exclusionary national memory projects. From Tainan to Jakarta to Ambon, these examples suggest that approaching heritage as a continuously evolving social practice—grounded in plural participation, historical justice, and epistemic openness—enables local communities to contribute ethically and reflexively to global heritage discourse and foster meaningful transnational dialogue.

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Heritage and Tourism

Development of Sustainable Tourism Village Design for the Kemesu Valley Community amid the Onslaught of Modernization

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Abstract

The phenomenon of urban communities traveling to rural areas has become a trend in the last ten years, resulting in changes in land use in some rural areas. Changes in land use in the Dlinggo Bantul area, originally intended for agricultural land, have changed to tourist destinations on a massive scale. This has had positive and negative impacts on the community. The positive effect on the community is community income increase from the tourism sector. Still, the negative impact is that many tourism areas in the Dlinggo Bantul area are not in line with the conditions of local natural resources and culture. This negative impact will gradually cause a crisis in the identity of the native character of Dlinggo Bantul Village, which still maintains Javanese culture. However, the hope of the Dlinggo Bantul Village Community, especially the Lembah Kemesu Community, is for a better economy, by pioneering the establishment of a Tourism Destination Village. The study of the research aims to produce a transformative approach formulation for the development of a sustainable Tourism Destination Village for the Lembah Kemesu Community in Bantul Village that is adaptive to local cultural and ecological characteristics. The study uses the Participatory Design Method by presenting representatives of the Community from the Lembah Kemesu Community. The results of the research of the Kemesu Valley Community in pioneering a sustainable Tourism Destination Village are transforming expertise in local food processing, raw material sources for facilities, the character of the hill ecosystem and livelihoods as farmers, Javanese arts and culture skills, and home residents as important aspects in the transformation of the design of the Kemesu Valley Community Tourism Destination Village.

Keywords

tourist destination village, village community, participatory design

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Introduction

Urban Tourists' interest in experiencing village tourism is increasing, driven by the desire of tourists to seek authentic experiences that are different from urban life. City tourists want a direct experience of local culture and traditions (Yung Lun Liu, et al., 2023), as well as a local community atmosphere that is different from the experience in urban areas with high levels of activity and dense settlements. Village tourism is supported by technological developments and ease of transportation that make it easier for city people to travel to villages so that tourists can plan trips, find locations, and travel (Francesco P., Fabrizio P., 2025). The increase in interest in traveling to villages is also influenced by the need for a healthier and quieter environment for activities and an atmosphere that supports relaxation (Li Heying., et al., 2024; Rongrong J., Hong X., 2025). This condition is influenced by the situation after the COVID-19 pandemic which has increased human awareness of the importance of maintaining health. In addition, awareness of mental health is rising, where village tourism helps to reduce stress and improve mental health (Ralf C.B., Marry-Ann C., 2022).

The Tourism Development in the village also provides opportunities and challenges for development. The opportunities provided to the village community are economic growth and diverse sources of livelihood (Harne., et al., 2020). The addition of opportunities for tourism in the village also increases the acceleration of development growth

in the village, both the growth of public facility infrastructure and transportation. So that tourism opportunities in the village can increase local revenue which is an important sector for the welfare of the village community (Sukarta, et al., 2023). However, the challenge with the existence of tourism in the village is the change in land function. The function of land in tourism facilities can threaten food security and the balance of the local ecosystem. Research by Iemaaniah and Selvia (2024) shows that in Kuta Village, Central Lombok Regency, there has been a significant conversion of agricultural land due to tourism development, even though the government has set policies to anticipate this. Likewise, a study by Fransisca Livia P. S. (2021) in Sleman Regency revealed that the development of tourist villages has not been fully effective in controlling the conversion of rice fields, which is influenced by economic factors and community perceptions of land function. In addition, the impact of changes in land use can affect social and cultural transformation in villages and even erode local values in villages such as in the Sasak Tourism Village, Ende, Lombok (Surahman, et al., 2020) such as the way of dressing and cultural customs values begin to change. Tourism in villages can also grow several foreign infrastructures and cultures in the village area to attract tourists, such as the example of Little Tokyo Jogja Tourism, in Dlingo District which presents Japanese-style building infrastructure to attract tourists, and the Hobbit House in Songgo Langit. Therefore, tourism planning

in villages is important to apply the principles of sustainable development in the development of tourist villages to maintain local conditions and culture so that they are not lost. An approach that integrates local wisdom in tourism planning can help maintain the cultural identity and natural environment of the village (Tou., et al., 2020).

Several strategies to support sustainable village tourism have been written by several researchers [tab.1]. The strategy aims to reduce the degradation of village transformation due to modern- themed tourism or internalization of foreign culture. Sustainability strategies in rural tourism are also needed to maintain cultural sustainability and strengthen local character. The conclusion of several strategies used to develop sustainable tourism in villages, it is important to emphasize the existence of structured and organized human resources and the ability to manage tourism in the village. Second, various attractions and innovative economic activities that maintain locality. Third, facilities and amenities that support activities with a sustainable system. Fourth, cooperation with various external parties and industries that support the sustainability of tourist villages. Fifth, the existence of government policies that strengthen the position of sustainable tourist villages. Sixth, the existence of accessibility and transportation facilities that support tourist villages. Finally, the use of information technology for marketing tourist villages. The seven strategies that are directly related to the development of sustainable village

tourism design will be closely related to the strategy of organizing activities and attractions, organizing facilities and amenities, organizing transportation, and promotional media. The four strategies above are the direction for the design development approach using the Participatory Design Method in the Tourism Village in the Kemesu Valley as a sustainable village tourism that promotes local wisdom.

Table 1: Sustainable Tourism Strategies

Sustainable Tourism Policy and Strategy Development (UNESCO)¹	Strategi Pengembangan Desa Wisata Berkelanjutan di Kabupaten Magelang (Achsa, et al.,2024)²	Strategi Pengembangan Pariwisata Berkelanjutan di Desa Lambangjaya (Dewi, et al., 2022)³	Pengembangan Desa Wisata Berkelanjutan: Studi Kasus di Desa Paccekke, Kabupaten Barru, Indonesia (Junaid I., et al., 2022)⁴	The Role of Rural Tourism in Strengthening the Sustainability of Rural Areas: The Case of Zlakusa Village (Curcic, N., et al.,2021)⁵
advocating policies and frameworks that support sustainable tourism as an important vehicle for managing cultural and natural heritage	Professional management	Attractions, Accessibility and Amenities	Utilizing the potential of other tourist villages in Barru Regency to improve the quality of tourist trips through innovative tour packages.	Diversification of economic activities
Developing strategies through broad stakeholder engagement for the planning	human Resources	human Resources	utilization of social media in order to optimize the publication and promotion of tourist villages	Which is accompanied by cohesion of the population through association and organization;
development and management of sustainable tourism that follows a destination approach and focuses on empowering local communities	organizational completeness	BAS (Branding, Advertising and Selling) marketing strategy	the importance of sustainable environmental management to anticipate the negative impacts of massive tourist visits	Organized activities aimed at local or republican authorities
	facility	Society and Industry	the importance of utilizing village potential as a guide for types of tourism and alternative tourism	Activation of human and social capital
	tour packages		Stakeholder collaboration through optimizing the role of each stakeholder element	Initiating activities involving marginalized groups
	cooperation			
	targeted management			

1 whc.unesco.org. (2025). diakses 3rd April 2025 at 04.00pm

2 Achsa, A., Verawati, D. M., & Hutajulu, D. M. (2024). Strategi Pengembangan Desa Wisata Berkelanjutan di Kabupaten Magelang. *EKOMABIS: Jurnal Ekonomi Manajemen Bisnis*, 5(02), 221-236.

3 Dewi, S. N., Dienaputra, R., & Rakhman, C. U. (2022). Strategi pengembangan pariwisata berkelanjutan di desa lambangjaya. *Barista: Jurnal Kajian Bahasa dan Pariwisata*, 9(1), 61-71.

4 Junaid, I., Dewi, W. O., Said, A., & Hanafi, H. (2022). Pengembangan desa wisata berkelanjutan: Studi kasus di desa Paccekke, kabupaten Barru, Indonesia. *Journal of Regional and Rural Development Planning (Jurnal Perencanaan Pembangunan Wilayah dan Perdesaan)*, 6(3), 287-301.

5 Ćurčić, N., Mirković Svitlica, A., Brankov, J., Bjeljac, Ž., Pavlović, S., & Jandžiković, B. (2021). The role of rural tourism in strengthening the sustainability of rural areas: The case of Zlakusa village. *Sustainability*, 13(12), 6747.

Method

Lembah Kemesu Tourism Village is an initiative of the Gunung Cilik Village community, Dlingo, Bantul, to improve the economy of the community in the area, most of whom work as farmers and ranchers. Dlingo District is an area that has experienced rapid development since 2015, as an area used for tourism (Tri Astuti, A.D.S., 2021). The tourism offered by Dlingo District is in the form of natural tourist attractions, arts and culture, and small industries as well as the presence of tourist villages spread across six villages. Lembah Kemesu Tourism Village took the initiative to develop their livelihoods in the tourism sector because if they farm in a year they will experience a dry season. To develop a sustainable rural tourism design, researchers use the Participatory Design Method.

The Participatory Design Process is carried out through a series of stages, starting from collecting information on location resources that support the development of sustainable tourism villages using surveys and directed interviews, then continuing with Focus Group Discussions. Focus Group Discussions are carried out by experimenting with the design with the community. The Community Targets of the Participatory Design Method are the communities involved in the development of the Lembah Kemesu Tourism Village such as the Farmer and Linmas Groups groups that own most of the land area for the development of the Tourism Village, the PKK/Aisyiyah Mothers Group, the Karang Taruna Group, and Community

Representatives, namely the Head of the Hamlet. The total number of participants was 18 people. In the design experiment, the community representatives who were present were made into groups, each group consisting of 4-5 people accompanied by an instructor from the research team to help read the location on the map and describe the conditions of the location. Each group was given a monochrome contour map and a colored map. Before starting, each group was given material on the findings of interviews and location surveys related to the resources owned by the Lembah Kemesu Tourism Village Development Location. After the material, each community group conducted an experiment to describe the desired tourism design in the Kemesu Valley by placing colored stickers that depict the facility code, for 30 minutes.

Furthermore, through discussion sessions and workshops, the community is invited to contribute to determining design priorities and provide feedback on the concepts developed. This technique ensures that planning is not only based on theory or technical standards, but also contributes to local social, economic, and cultural aspects. In analyzing the results of the Participatory Design method, a qualitative approach is used with thematic analysis techniques. Data obtained from interviews and group discussions will be coded and categorized into main themes that reflect the needs and expectations of the community. In addition, to understand the extent of community involvement and satisfaction with the design process carried out, a descriptive analysis is used

that compares preferences before and after the design intervention is carried out. This analysis method allows researchers to identify emerging patterns and evaluate the effectiveness of the participatory approach in producing sustainable design solutions.

Result and Discussion

Contextual Resource Conditions to Support Sustainable Rural Tourism Design

To support the development of sustainable tourism villages, several resource aspects are needed, such as natural resources, cultural resources, human resources, infrastructure resources, technology and information resources, financial resources, and institutional resources and policies. Resources are used for the development of Tourism Village designs that focus on resource utilization strategies to produce attractions, amenity facilities, transportation, and appropriate promotional media that are sustainable and build local wisdom. The condition of local resources can be seen in the table below [tab.2].

2.	Cultural Resources	- Regular religious study activities - Gamelan arts groups - Regular community group meetings - Farming and harvesting activities in certain seasons
3.	Infrastructure Resources	- Community House for Homestay - Prayer room in tourist area - Empty land area that can be used as parking - Tourist land area of 110,000m2 or 1.1 ha
4.	Technology and Information Resources	- The Lembah Kemesu Tourism Village already has an Instagram, but it is not activated, because tourism is not running
5.	Financial Resources	- Agriculture - Cassava, corn, and family medicinal plant plantations - Several bamboo craftsmen communities - Tracking activities by jeep
6.	Institutional Resources and Policies	- There is no official policy from the local government
7.	Human Resources	- The Kemesu Valley Tourism Village Group has been formed - Bamboo craftsmen community - The community can process garden plants as food and beverage ingredients

Table 2: Condition of Existing Resources in the Kemesu Valley Tourism Village Development Area

No	Types of Resources	Existing Condition of Kemesu Valley
1.	Natural resources	- The village contour varies, from slopes to hills - Views of rice terraces and gardens - Various kinds of family medicinal plants in gardens and fields - Various kinds of birds - Beautiful scenery, and wind potential in slopes and valleys - Saujana in high areas - Tall trees in rows - Water sources



Fig.1. Left. Scenery from the valley. Center. Jeep Facilities. Right. Family Medicinal Plants (TOGA).
Source: elaborated by the author

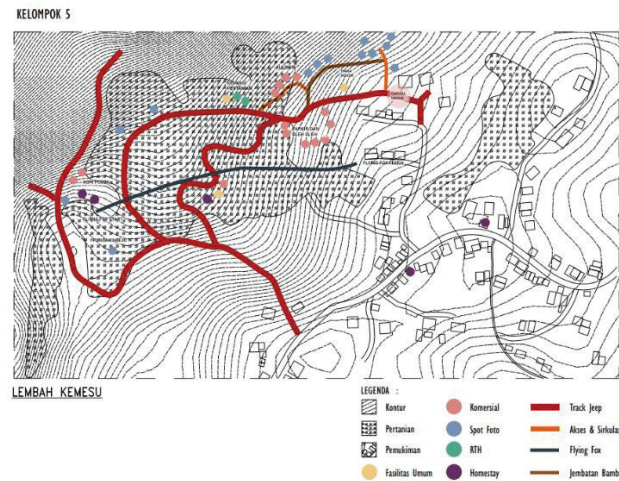
Development of Supporting Facility Design for Tourism Villages by the Kemesu Valley Community by Paying Attention to Natural Resources

Each group was given a map image to experiment to develop the design of the Kemesu Valley tourist area as expected. The results of the five groups were redrawn using digital as in the following table [tab.3].

Table 3: Design Image of Kemesu Valley Tourism Village, Results of Experiments with the Community

Mapping of Supporting Facilities for Kemesu Valley Tourism Village	
Group 1	Group 2
LEMBAH KEMESU SKALA 1 : 2300 LEGENDA : - Kontur - Pertanian - Pemukiman - Komersial - Fasilitas Umum - Panggung Seni - Pendukung - Spot Foto - Pintu Masuk - Akses & Jalan - Jembatan	LEMBAH KEMESU SKALA 1 : 2300 LEGENDA : - Kontur - Pertanian - Pemukiman - Fasilitas Umum - Komersial - Spot Foto - KEM - Homestay - Trek - Akses - Jemb - Jemb
Group 3	Group 4
LEMBAH KEMESU SKALA 1 : 2300 LEGENDA : - Kontur - Pertanian - Pemukiman - Fasilitas Umum - Komersial - Spot Foto - KEM - Homestay - Trek - Akses & Jalan - Jembatan	LEMBAH KEMESU SKALA 1 : 2300 LEGENDA : - Kontur - Pertanian - Pemukiman - Fasilitas Umum - Komersial - Spot Foto - KEM - Homestay - Trek - Akses & Jalan - Jembatan

Group 5



The design results are analyzed based on the repetition of the position of the application of facilities on the available contours. Based on the repetition of the placement of crucial components in the master plan that have the same theme or function is explained according to the

development needs of the Kemesu Valley Tourism Area design which is described based on the needs of attraction facilities, amenities, accessibility, and promotional media which can be seen in the table below [tab.4].

Table 4: Comparison of Designs of the Five Groups

Design Facility	Comparison of Designs of the Five Groups	Related Resources
Accessibility	All designs add at least a road connecting the two entrances and exits.	- Infrastructure Resources
Attractions	The modified road branches off following potential areas to certain views, particularly towards a narrow rice field that overlooks a cliff.	- Natural resources
Amenities	Most of the parking areas are designed to be centered on the north side of the area near the gate. Only group four makes the parking area into two locations, namely in the north and in the south.	- Infrastructure Resources - Institutional Resources and Policies
Attractions	The entire design uses water elements in the form of small rivers/streams in its tourist attractions. This is proven by the marking of river flow lines and the position of the bridges which are marked on the map.	- Natural resources
Accessibility	Most of the designs condition the main entrance gate to the north, this is because based on FGD the northern area has a gentler contour than the southern area.	- Infrastructure Resources

Amenities	Two types of homestays are carried out based on the community's master plan. The first type of homestay is a homestay that utilizes buildings/houses owned by the community. The second type of homestay is a newly built homestay located in several tourist areas. For the second type of homestay, most masterplans tend to place the homestay in the northern area of the Kemesu Valley Tourism Area. The homestay is made scattered and can enjoy the view of the rice fields and the heights to the west to the north.	- Infrastructure Resources - Natural resources - Financial Resources - Human Resources
Amenities and Attractions	Most of the commercial areas that are for sale such as food/ culinary places that sell processed plantation products, and souvenir shops are placed near the main access road area in Lembah Kemesu. The positions are spread in the north and south.	- Financial Resources - Human Resources - Infrastructure Resources - Natural resources
Amenities	Public facilities such as prayer rooms and toilets tend to be spread across various areas north and south of the area. However, people tend to place public facility areas also close to the road.	- Human Resources - Infrastructure Resources
Attractions and Promotion Media	People tend to create photo spot areas on the left side of the road or areas that directly face open views or parks. Photo spot areas are spread across a number of potential strategic views and tend to be at high altitudes.	- Technology and Information Resources - Cultural Resources - Natural resources - Infrastructure Resources
Attractions and Amenities	The addition of Green Open Space areas, which can be in the form of parks and so on, tends to be located in dry rice field areas before the rainy season, namely the central area of the area towards the north.	- Cultural Resources - Natural resources - Human Resources
Attractions and Promotion Media	Stage, the use of the stage in the three masterplans is placed at the lowest point in the middle rice field area which is the widest area to see the open view. The stage is also placed to avoid being blocked by other functions. The potential for natural scenery at the location shows the need for a background view that blends with the stage.	- Cultural Resources - Human Resources
Amenities	Gazebos tend to be placed on secondary access roads/ extensions of the main access roads in the Kemesu Valley area. The gazebo shown in the two master plans is placed side by side with an area shaded by trees.	- Natural resources - Infrastructure Resources
Attractions	<i>Flying Fox, there is one masterplan that includes this function. The attraction is made crossing over a sloping agricultural area.</i>	- Natural resources

The results of the master plan for the development of the Tourism Village were presented by each small group to the other Focus Group Discussion participants. The results showed that several Community concentrations related to the development

of the design of the Kemesu Valley Tourism Village related to the Utilization of Scenery as an important aspect to be utilized in tourism. Tourists can experience the experience of riding a bicycle while going around the Kemesu

Valley tourism area, where the current condition that has been carried out by the Community is the use of Jeep vehicles for tracking rocky dirt roads in the Kemesu Valley Tourism area. Abundant Natural Resources such as fertile soil, large green areas, and bamboo cultivation can be developed for their utilization. The Community has tried to build a prayer room overlooking the hilly scenery, although the current condition has not yet provided a masterplan direction. In addition, the Community strongly supports the utilization of abundant agricultural products, spices, and local culinary skills as part of organizing tourism and preserving local food security. The Community makes efforts by serving local sweet potatoes every time there is a Community gathering activity. The community also has a residence that is currently used as a lodging, so even though the development of Village Tourism planning will build new homestays in special areas to see the potential for beautiful scenery, to experience the experience of living in the village, tourists are invited to stay at residents' homes while experiencing the experience of being a resident. The community also explained the culture of perform bathing rituals in local springs, that can be a special attraction to attract tourists. Gamelan art owned by the Community group can also be offered as part of the tourist experience when visiting the Lembah Kemesu Tourism Village.

However, the challenges felt by the Community in developing the Tourism

Village are related to the creation of a shared vision and mission related to the objectives of the Lembah Kemesu Tourism Village, and the existence of a number of skilled Human Resources. There has been no real cooperation between the Lembah Kemesu Tourism Group and the government, as well as funding sources. In addition, the condition of the tourist land that will be utilized still has access in the form of a dirt road with stones, so it will make it difficult for visitors to circulate in the Lembah Kemesu Tourism Village area. The results of the Focus Group Discussion and Participatory Design show that the Community is aware of the need for a Sustainable Tourism Village. The Lembah Kemesu Tourism Village is important to be sustainable in terms of Natural Resources, sustainable in terms of Cultural Resources, sustainable in terms of Infrastructure Resources, sustainable in terms of Financial Resources, sustainable in terms of Institutional and Policy Resources, sustainable in terms of Human Resources, and sustainable in terms of Technology and Information Resources.

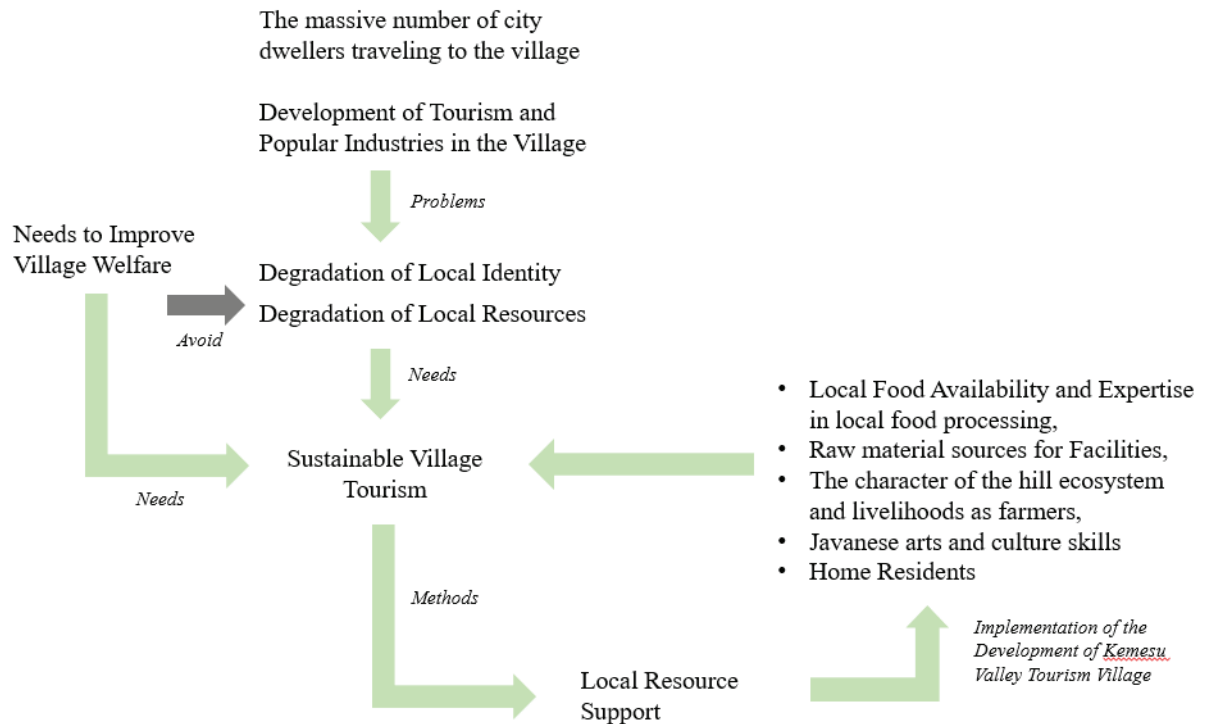


fig.2. Research Framework Source: elaborated by the author

Conclusion

Tourism development in villages, especially in Dlingo District, Bantul, is happening so fast, but if tourism development is not directed and only pursues economic interests, it can result in negative transformation. Transformation of land use for artificial tourism that does not reflect local culture, transformation by incorporating cultures from outside to attract visitors, to social transformation will have an impact on the erosion of local wisdom owned by the village. Efforts to reduce the degradation of local wisdom in villages due to tourism are by implementing sustainable tourism development in villages. By using participatory design and focus group discussions, the development of an ideal tourism village design for the Kemesu Valley Community was carried out.

The community showed the need for a sustainable Tourism Village and the need to strengthen the use of existing resources to avoid internalization of foreign culture and loss of local identity. The Kemesu Valley Community implemented the development of a Tourism Village Design that prioritizes transforming expertise in local food processing, local building material sources, the character of the hill ecosystem and livelihoods as farmers, Javanese arts and culture skills as important aspects in the transformation of the design of the Kemesu Valley Community Tourism Destination Village. The use of local resources is not only to increase the tourist attractions owned, but also to maintain local identity, preserve art and culture, avoid the extinction of local food due to food from outside the region, and

increase community resilience, especially socially, culturally, and economically. It is hoped that this research can be the basis for the development of tourism that develops certain villages so that they are not decreased by the flow of tourism and popular industries in the world, but can still maintain local identity and resources in order to create sustainable village community resilience.

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**Traditional Knowledge
and
Sustainable Practices**

TRADITIONAL NEIGHBORHOODS OF BORNEO; THE CHALLENGES AND WAY FORWARD FOR WATER VILLAGES TO BE URBAN RESILIENT, A CASE STUDY IN KAMPONG AYER, BRUNEI.

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Abstract

The water villages of Borneo today are a juxtaposition of the urban fabric that are now decaying in contrast to their land-based counterparts, distancing itself from the once symbiotic relationship that made up the urban Borneo settlements. Maintaining the indigenous population has remain to be a challenge as these settlements are now synonymous with poverty, crime infested and cheap accommodation for immigrants. Moreover, the lack of utilities such as proper sewage and waste disposal puts ecological pressure on the river. This paper will focus into the water village in Brunei Darussalam; the objective is to understand the challenges of modernizing contemporary water villages. The paper also recommends strategies and ways forward to create a resilient urban neighborhood that lives in sync with the riverine ecosystem.

Keywords

Urban Resilience, Water-based urbanism, Traditional urban neighborhoods, Urban Borneo, Brunei Darussalam

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Introduction

Situated in Southeast Asia, Borneo Island is 748,168 square kilometers, making it the third largest island in the world. It is among the islands that is shared between three different states which are the Sultanate of Brunei with 1%

of the total land area. The constitutional monarchy of Malaysia with the state of Sabah, Sarawak and the Federal territory of Labuan occupies 26% of the island's landmass. The largest share of the island belongs to the Republic of Indonesia

with 73% and it is divided into five administrative provinces namely North, East, South, West and Central Kalimantan (Geology.com, 2005). Recently the island hosted the newly capital of Indonesia called Nusantara since 2024.

Despite the differences in political administration, the three states shared a common urban typology which is the water-based settlements that are in major cities as well along the main rivers and estuaries of the island. Its dense forest and hilly interiors have made the population concentrate along the coasts and major river.

Objectives and outline of the paper

Among the main objectives of the paper includes (1) understanding the challenges of modernizing water-based settlements (2) recommending approaches to create a resilient urban neighborhood for water-based settlements.

This paper is divided into two sections whereby the first part gives the historical context for the existence of water-based settlements in Borneo. The second part describes the case study for the water village in Brunei. This discusses the development of the settlement, the challenges of overpopulation, and hazards such as fires and deteriorating housing stocks that influence government intervention specifically for the water village. The efforts by the government towards the development of a modern water village which is a pilot model of the water village and its drawbacks. Recommendations with concept based on the lesson learned provides a compliment

for modification from the existing modern water villages.

Research methodology

This paper adopts a qualitative research methodology that involves two parts; the first part is a literature reviews on secondary data and analysis of planning documents and policies in Brunei Darussalam. The second part involves observation and field survey of the given village in Brunei's water village from an urban design perspective, looking into the conditions and context of the local ecosystem and surrounding. This offers an insight into the ongoing situation and the policies that affected the water village.

Water-based urbanism in Borneo Island

The water villages of Borneo represent the traditional urban fabric that historically dominates major settlements on the island. Settlements such as Bandar Seri Begawan, Kota Kinabalu and Banjarmasin are amongst the cities that house these traditional urban settlements, representing the identity that defines urban Borneo. Historically these water-based settlements once serve as the capital for the kingdoms of Brunei, Pontianak and Kutai and were built along the estuaries of the rivers that provides transportation accessibilities to the hinterlands (Evers, 2015). These settlements are termed as 'river culture' where it refers to the adaptiveness of the water-based settlements in the physical, social and economic and dependency to the river in their daily needs (Michiani & Asano, 2019).

Most of these water-based settlements have proximity to the core urban areas that provide a natural market for residents to live, work and contribute to the lively scenes of the city. The water-based settlements of Borneo were known to be resilient cities prior to the British and Dutch colonial era. In this regard, water-based settlements were resilient as they have developed capacities that help to absorb future shocks and stresses not limited to its functionality but to the social, political and economic structures (Kozlowski, Ibrahim , & Zaini, 2021). The built form for these water-based settlements responds to the tropical climate where the materials were sourced locally from the surrounding forest such as bamboo and thatch while the water below provides a natural cooling mechanism. Traditional orientation of the building helps keep homes ventilated. Even though during the colonial period, resiliency was seen more adaptive with the introduction of sawn timber and neoclassical architectural styles that were introduced that suited the tropical environment and climate (Kozlowski, Ibrahim , & Zaini, 2021).

Today, with land side development which provides ample amenities through suburbanization and affordable mobility, water-based settlements face challenges such as decaying urban neighborhood that losses the appeal for contemporary urban living. Traditional water villages are a juxtaposition of the urban fabric that are now decaying and in need of modernization to catch up with their contemporary counterparts. Most

worrying is that these traditional urban settlements are subjected to discrimination which relates these settlements to poverty, crime infested and cheap accommodation for immigrants, further eroding the once symbiotic relationship of urban Borneo settlements. This problem transcends nation states despite Borneo being shared with three countries. Without the proper support and impetus to retain the traditional urban neighborhoods, there is a fear of losing the identity of Borneo cities. Resiliency again needs to be adaptive that should encapsulate the socio-economic traditional values, innovation in infrastructures and supporting policies of water-based settlement adaptation.

‘Kampong Ayer’ of Brunei Darussalam as a case study

This paper will investigate the water-based settlement in Brunei Darussalam known as ‘Kampong Ayer’. Historically the water village was the political center, commerce and culture for the state. As colonial power has influenced modern governance, there was a shift from a water-based urbanism towards a land-based settlement. Brunei became a British protectorate in 1906 where among the recommendations were to move the government administration on land which is adjacent to the existing water villages starting with the Sultan’s palace and the British Residence, the land-based new town was functional by 1908. Soon it was followed with relocation programs which families participated were given incentives such as freehold land titles (Asbol Mail & Tassim Abu Bakar, 2016).

Tradition played an important factor in its slow adaptation as the existing social structure that forms water-based urbanism has not yet changed. Sanitation was a problem that led to an epidemic which cost lives during the early 20th century. However, a shift in the stigmatization of vaccination between 1927 to 1950 has created a significant population growth which has led to more demand to house the new population (Leblanc, 2017).

The adaptation of water-based living towards land was a slow process in the beginning of the 20th despite efforts on development on land infrastructures with modern facilities were underway. Yet the local population were indifferent to the development that takes place at that time which hinder rapid migration to the new suburbs (Asbol Mail & Tassim Abu Bakar, 2016). This would become rapidly adopted after the post second world war reconstruction and oil windfall towards the 1970s and 1980s. On the land side there were major developments in the road constructions that opened new areas for suburbanization. Despite that, majority would still prefer to live in the water village as it is more cheaper compare to its land-based counterparts as the building and its maintenance works were distributed among the family members and it is flexible according to their affordability (Huszar Brammah & Associates, 1987).

Concurrently, this was also the peak of the water village population boom as the population grew with modern amenities provided such as healthcare and education facilities, fire and police

stations and utilities such as water and electricity. Unfortunately, introducing sewage and wastewater was difficult to implement in existing neighborhoods and the waste was thrown directly to the water below. There were also changes in the construction materials where previously most houses were built with wood or bamboo walls, mangrove stilts and thatched roofs which were replaced with sewn timber walls, concrete stilts and corrugated zinc roofs respectively. By the 1980s the water village become densely populated which had resulted from good healthcare coverage and stable economy allowing natural population growth. Traditionally the villages are formed from close-knit families and as the population grew, expansion towards open spaces has gone unhindered in which approvals were held by village head with limited state interference (Leblanc, 2017).

The overcrowding resulted in chances of fire outbreaks were imminent. Without proper planning and building forms that were close with no fire break barriers, a single fire can easily spread to a wider area within the water village. This has led the government to introduce strict measures to limit the natural development of the water village, namely the Emergency Order 1982. In this matter, the role of the village head in the matters of application and extension of new structures in the water village was taken over by the District Officer (Jabatan Penerangan, 2007). The Emergency Order 1982 also consists of building guidelines introducing modern planning methods in the water village. However, the ability to reconstruct the

houses after a devastation of either fire or structural collapse would not allow the rebuilding of livelihood in the water village, this means that the displaced local will be relocated either on land or moving to surrounding water villages. In this matter, resilience after disasters and shocks was not considered to maintain the traditional urban settlements.

The government has introduced a modern concept for water villages living with full amenities including sewage. This was to be located south of the main water village area, and it was designed to be more suburban with its rigid structure and generic housing typologies. This was a response to another fire break in 1992 where it displaced about 1,100 people. This resulted in the formation of the modern water villages of Bolkiah A and Bolkiah B with 226 dwelling in 1994 and 250 dwelling in 1995 respectively (Tassim & Abu Bakar, 2018). These new houses were built with concrete stilts that were driven to the riverbed, significantly reducing the chances of collapse due to river sedimentation movement.

However, these new settlements have changed the socioeconomic dynamics of the water village as the rigidity of the new settlements lacks the building of community spirit such as public spaces. Thus, people are reluctant to participate in community activities (Husni Damit, 2010). Moreover, Pengiran Adnan Pengiran Badaruddin (2001) commented that the linearity of the new settlement does not produce the desired spatial and social ambiance in comparison to its traditional counterpart.

Traditionally, compact settlements allow the creation of pocket spaces in which communities would interact, the pathways that cross the houses, given a bench and extended roofing forms a unique public space for interaction and 'eyes of the street'. Another key feature in Kampong Ayer is the 'bakut' which are natural depositional features that form an embankment of small patches of dry land amidst the surrounding water villages. These 'bakut' functions as a cultural space that supports cultural and economic activities in a water-based settlement complex (Hassan & Yong, 2019). The layout in which the settlement is located also signifies its relation to the environment as such the settlements were laid out parallel to the flow of the river. This was seen in Chinese geomancy or Feng Shui particularly during its pre-Islamic era in which Bruneian Malay houses in the water village influenced the orientation of the settlement which can be seen today (Pengiran Adnan Pengiran Badaruddin, 2001). These shows that traditional settlements incorporate natural features to supplement the socio-economic needs of society in which the settlement has a symbiotic relationship to the natural surroundings.



Fig.1. Modern water-based settlement in the suburbs (<https://www.pinterest.com/dixiebabs/brunei-darussalam> (Tassim & Abu Bakar, 2018))

Urban Planning for ‘Kampong Ayer’

It was not until the 1980s that the Brunei government has introduced several masterplans for its riverine settlement as follows:

- Town and Country Planning Appraisal Report in 1982
- Urban Design Study report by Kenzo Tange in 1985
- ‘Kampong Ayer’ and the Central Area report by Huszar Brammah in 1987
- ‘Kampong Ayer’ Improvement Plan by Arkitek Ibrahim in 1997
- Bandar Seri Begawan Masterplan by HOK Group in 2010

The Town and Country Planning Appraisal Report gives the detail of the historic settlement of the water village and conducted surveys on the contemporary residence of that year. This was followed by the Urban Design Study Report by Kenzo Tange which focusses on Bandar Seri Begawan in general but also considers the water village as part of the important visual corridors of the city. The plan highlights the problem

faced by the water village where (i) overcrowding at 373 person per hectare which is consider high and risky for the settlement, (ii) sanitation problems from sewage and waste disposal has cause the environment to be polluted and (iii) unplanned layout of the settlement which they described the buildings to be erected randomly without regulations (Kenzo Tange Associates , 1985).

In this matter he also introduced a bold design of a rigid housing structure with a central spine for shops and amenities. In reference to his observations that the quality of the houses is deteriorating, he proposes a complete overhaul of the existing war village to reduce the density from 373 people per hectares to 250 people per hectare. (Kenzo Tange Associates , 1985). However, other planners that conducted the study soon after commented that the effort to modernize the water village was a total disruption to the existing social and physical form (Huszar Brammah & Associates, 1987) and omits the people’s aspiration with the revolutionary approach (Arkitek Ibrahim, 1997). However, it is noted that as time pass and with urgent needs to house displaced population, Kenzo Tange’s idea appear to be bear fruit albeit in a smaller scale as such the case of ‘Kampong Bolkiah A & B’ and the recent ‘Projek Perintis Menaik Taraf Kampong Ayer’ (‘Kampong Ayer’ Upgrading Pilot Project) was commenced 2011.



Fig.2. Grid-layout of the water village (Kenzo Tange Associates , 1985)



Fig.3. 'Projek Perintis' modern grid-layout water village next to traditional settlement (Author)

Although Huszar Brammah's study was divided between the Central Area or downtown Bandar Seri Begawan and the water village, the proposal were not as revolutionary to that from Kenzo Tange but an infrastructural approach towards mitigating environmental degradation from open sewerage and dumping such as proposing sewerage treatment facilities and a detailed housing model for modern water village living with a garbage collection system and similar facilities that can be found with its land- based counterpart.

The 'Kampong Ayer' Improvement Plan by Arkitek Ibrahim was considered the first comprehensive and multi-sectoral

study to be conducted specifically for the water village. His approach is more moderate by considering the introduction of fire breaks into the water village, maintaining existing houses that were in good condition while adding modern houses to be built alongside the settlement.



Fig.4. Moderate approach for modernizing the water village (Arkitek Ibrahim, 1997).

The recent Bandar Seri Begawan Masterplan in 2010 highlights a holistic approach on the elements of ecological heritage, Bruneian identity and sustainable economy as the guiding principle for the water village (HOK Group, 2010). The three principles were mostly focused on creating tourism and leisure facilities for water villages, indicating a shift of mindset in creating opportunities for the residents towards provision of services for tourism products.

With the efforts been made on the planning level, this would have enticed the local population to stay in the water village and would eventually attract its land-based residents to come back to the water village. However, from these masterplans that were presented there were no substantial improvements that were carried out and the status remains

unchanged (Department of Town and Country Planning, 2008). This was due to the existing Emergency Order that is still in place and the lack of active participation from various government agencies has slowed down the regeneration process. Moreover, the fate of the water village depends on the Brunei Government as they are the main financier and execution of the projects.

Recommendation for a resilient water village

Although the masterplans emphasize on infrastructural provisions primarily sewerage and waste disposal to enhance the ecological quality of the water village. These masterplans have not put much emphasis on the human scale aspect. Traditionally the growth of the houses in the water village grew gradually alongside the needs of the household such as new family members where such houses contain multiple households living in the same house. The growth of the house will extend to wherever there were spaces along the river space, hence the unplanned and crowded housing happened. Therefore, there were no parcellation or strata within the traditional water village settlement. Land parcel (on water) were given to modern housing such as those from the ‘Kampong Ayer’ Upgrading Pilot Project. Despite that, these modern houses were still not given the opportunity to naturally expand their houses within their confine parcel.

Michiani & Asano (2019) believes that upgrading the infrastructures of existing water-based settlements is humanistic in approach without the need

for eviction or relocating its residents. As with their example for Banjarmasin, their approach is applicable to any water-based settlement such as:

- (i) Arranging the street network as a fundamental system of settlement structure.
- (ii) Developing public utilities that enhances the livelihood of the residents.
- (iii) Providing public spaces as ‘external organs’ that forms the settlements sense of place and identity.

Husni Damit’s (2010) approach to the ‘external organs’ is by reutilizing burned areas to be converted into public spaces that would allow residents to communicate and express their belonging to their settlement. This would be achieved by relaxing the Emergency Order 1982 that had hindered the resilient process.

Most importantly, planners and urban designers plays an important role in creating action plans as the profession act a middle person in communicating the local aspirations and guiding government policies. Comprehensive planning requires the understanding of the cultural and environmental context that resulted a unique plan that caters specifically to the needs of the locality.

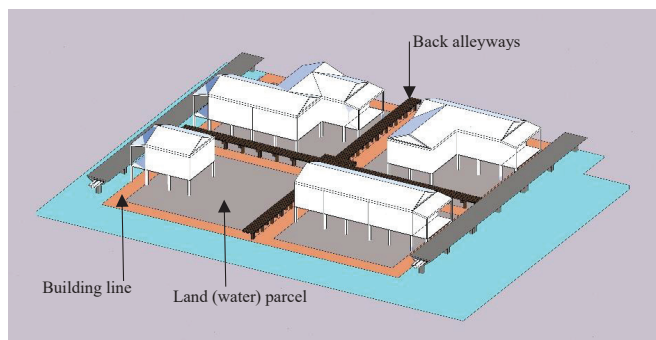


Fig.5. Recommendation for parcel and growth for the water village (Author)

Conclusion

A look into bringing back the natural growth of the water village could be a suitable framework for urban resilience. A resilient water village should allow the ability of the local community to develop its socio-economic structures by having infrastructures that enhance the livelihood, creating economic opportunities to sustain and maintain their lifestyle and revisiting the cultural symbiotic relationship with its natural surroundings asserts commitment to environmental sustainability. Most importantly, an external policy (government edict similar to the Emergency Order 1982) that acts as a guidance, not a hindrance to safeguard the cultural heritage of the water-based settlements.

By enhancing and acknowledging communities with similar opportunities to their land counterparts, an integration of modern land (or water) use system could be a revival not only for Brunei's water village but a template for urban Borneo's unique identity.

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INTEGRATING BALINESE VERNACULAR ARCHITECTURE AND PASSIVE COOLING FOR SUSTAINABLE URBAN LANDSCAPES IN BALI

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Abstract

Bali, as a prominent tourist destination in Southeast Asia, faces significant environmental challenges due to rapid urbanization and the growing demand for energy-intensive cooling systems in the hospitality sector. Traditional Balinese architecture, deeply rooted in the Tri Hita Karana philosophy, offers a sustainable alternative by emphasizing harmony between humans, nature, and spiritual values. This study explores the integration of passive cooling strategies with Balinese architectural principles to develop a green building model that reduces energy consumption while maintaining cultural authenticity. The research examines case studies of hotels in Bali that incorporate natural ventilation, locally sourced materials, and adaptive building orientation to optimize thermal comfort. Utilizing a mixed-methods approach, including field observations, energy consumption analysis, and stakeholder interviews, the study highlights the effectiveness of passive cooling in mitigating the urban heat island effect. The findings suggest that modern buildings can significantly benefit from incorporating traditional design elements, reducing reliance on air-conditioning while promoting environmental sustainability. This study contributes to the discourse on urban landscapes in transition by demonstrating how indigenous architectural knowledge can inform contemporary green building practices in tropical climates.

Keywords

Balinese Vernacular Architecture, Passive Cooling, Sustainable Urban Landscape, Green Building, Energy Efficiency

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Introduction

The island of Bali is a global icon of tourism that has undergone significant development, particularly since the opening of the international tourism sector in the mid-20th century. The massive increase in tourist visits has led to a surge in the demand for accommodation facilities, especially hotels and resorts, which typically utilize air conditioning (AC) systems extensively. This results in high energy consumption in the building sector, which contributes significantly to greenhouse gas emissions and exacerbates the urban heat island (UHI) phenomenon in tourist-dense areas such as Kuta, Seminyak, and Nusa Dua (Santamouris, 2015; Putra, et al., 2020).

Rapid urbanization, which is not balanced by sustainable planning principles, has led to ecological pressures on the local environment, including rising air temperatures, reduced green open spaces, and degradation of air and water quality. In this context, there is an urgency to find an architectural approach that is not only energy-efficient but also responsive to the character of the humid tropical climate and local cultural values (Hyde, 2008).

Balinese vernacular architecture has long shown extraordinary ecological intelligence. By relying on the principles of building orientation based on cardinal directions, natural cross ventilation, high roofs, and the use of local materials such as wood, natural stone, and reeds, traditional Balinese buildings are naturally able to create thermal comfort without the need for mechanical technology

(Oliver, 2006). More than that, Balinese architectural design is based on the philosophy of *Tri Hita Karana* - a concept of harmonization between humans (*pawongan*), nature (*palemahan*), and spirituality (*parahyangan*) - which is the foundation of cultural and environmental sustainability (Ardika, 2017).

In the modern context, there is a significant challenge in integrating these traditional architectural principles into contemporary building design practices, especially in the hospitality sector, which is heavily influenced by global standards and high comfort requirements. One approach that has begun to be explored is the use of passive cooling strategies, which are cooling systems that rely on passive design elements without the aid of machines, such as natural ventilation, shading, thermal insulation, and the utilization of vegetation (Givoni, 1998). This approach not only naturally lowers indoor temperatures but also significantly reduces electricity consumption.

This research aims to explore the integration of Balinese vernacular architectural principles and passive cooling strategies as a green building design model that is not only energy-efficient but also preserves local architectural heritage. Through case studies of hotels in Bali that have incorporated traditional elements into their modern designs, this study aims to explore how the values of local wisdom can be applied in contextual, sustainable, and applicable architectural solutions to today's tropical climate challenges. The results of this study are expected to make a scientific and practical contribution

to the development of an adaptive, low-carbon, and cultural identity-based tropical urban landscape.

Literature Review

Conceptual and Theoretical Framework

Vernacular architecture is an architectural system that emerges from a community's adaptive process to its local natural, social, and cultural environment. As a representation of cultural values, vernacular architecture develops organically and maintains the principles of resource efficiency and ecological harmony without dependence on modern technology (Oliver, 2006). Its main characteristics include the use of local materials, traditional construction techniques, and adaptation to local climatic conditions. In the Balinese context, vernacular architecture is strongly influenced by the Balinese Hindu belief system and the *Tri Hita Karana* philosophy, which emphasizes harmony between humans (*pawongan*), nature (*palemahan*), and God (*parahyangan*) (Ardika, 2017).

These concepts are manifested in the form of buildings that follow the concept of *sanga mandala* - a zoning system and spatial orientation based on the cardinal directions and spiritual values (Putra, et al., 2020). In addition, the use of materials such as red bricks, natural stone, bamboo, wood, and roofs from reeds or palm trees strengthens adaptability to hot and humid tropical environments. Design elements such as natural cross ventilation, a high roof with open ceilings, and the strategic use of an open porch (*bale*)

support optimal air circulation and natural lighting.

On the other hand, the passive cooling strategy is a building design approach that aims to create thermal comfort through the use of natural elements without relying on mechanical cooling systems such as air conditioning (Givoni, 1998). This approach includes principles such as cross ventilation, natural shading, heat reflection through light-colored roofs, the use of shade vegetation, and controlled natural lighting. Passive cooling strategies not only enhance energy efficiency but also contribute to reducing carbon emissions and mitigate urban heat island (UHI) effects, which are increasing in tropical urban areas.

The integration of Balinese vernacular architecture with passive cooling strategies provides a strong conceptual foundation for the development of sustainable tropical architecture. This approach emphasizes the importance of contextual architecture, which is a design that responds to environmental, social, and cultural conditions simultaneously (Fathy, 1986). Thus, building models that combine local architectural principles with passive technology are not only ecologically relevant, but also culturally identity relevant. *Previous Research and Gap Identification*

Studies on energy efficiency and adaptive strategies in tropical architecture have been widely conducted, especially in the context of climate change and global urbanization. Hyde (2008), in his book on *bioclimatic housing*, emphasizes that the success of tropical home design depends

heavily on the adoption of passive technology and a deep understanding of the local climate. Designs such as cross ventilation, natural thermal insulation, and space placement based on wind and solar direction have been proven to lower cooling energy requirements.

Meanwhile, Ng and Givoni (1999) examined the application of passive design in the tropical regions of Southeast Asia. They found that local culture-based approaches were more effective in improving thermal comfort than the application of non-contextual international design standards. Their research reveals that traditional architecture in the tropics has developed efficient natural solutions to mitigate heat and humidity, but these solutions have not been fully incorporated into modern architecture.

Several local studies have examined the potential of traditional Balinese architecture to be applied in contemporary design (Dwijendra, 2021; Putra, et al., 2020). However, these studies are generally still descriptive and limited to aesthetic or symbolic aspects. There has been limited research that systematically analyzes the integration of passive cooling strategies with Balinese architectural principles in the context of modern tropical urban landscapes, particularly in the hospitality sector, which is highly sensitive to user comfort and energy efficiency. This gap is what this research aims to answer, namely by providing an integrative approach between local architectural design and passive cooling strategies in sustainable building development in Bali.

Research Methods

Research Design

This study employs a mixed-methods approach, combining qualitative and quantitative methods, to gain a comprehensive understanding of the integration of Balinese vernacular architectural principles and passive cooling strategies in hotel buildings in tropical regions. This approach is considered relevant because it captures the interpretive dimension of cultural values and user perceptions (qualitative aspects), while also providing a measurable empirical basis related to thermal performance and building energy efficiency (quantitative aspects) (Creswell, et. Al., 2018).

The primary strategy employed in this study is exploratory case studies, which were selected because they are well-suited for understanding complex phenomena in real-life contexts. The case study allowed researchers to examine the relationship between local architectural practices, passive design strategies, and building thermal performance in-depth and contextually (Yin, 2018). The unit of analysis in this study is several hotels in Bali that are known to have adopted elements of traditional architectural design and passive cooling strategies, both explicitly and implicitly.

Data Collection

The data collection technique is carried out in a triangulated manner to ensure the validity and reliability of the research results. First, field observations are conducted to document the physical

characteristics of the building, including the orientation of the building mass, the layout of the space, the type of roof and openings, as well as the architectural elements that function as passive coolers, such as cross ventilation and shade-providing vegetation. Observations were carried out using structured observation sheets and photo documentation.

Second, semi-structured interviews were conducted with key informants, including hotel owners, architects, and building operations managers. This interview aims to explore their perceptions and strategies for implementing local values and energy efficiency through passive design. The interview guidelines were compiled based on indicators from the principles of vernacular architecture and the principle of passive cooling (Hyde, 2008; Oliver, 2006).

Third, quantitative data analysis was conducted, which included the collection of information on building energy consumption, particularly regarding the air conditioning system. Additionally, temperature and humidity measurements were taken at several representative points within the room to assess the level of thermal comfort. Measurement instruments is a digital thermos hygrometer.

Analytical Approach

The collected data was analyzed using two main approaches: thematic analysis for qualitative data and quantitative comparative analysis for technical data. Thematic analysis was conducted by coding, categorizing, and interpreting

interview transcripts and field notes to identify key themes, including “local value,” “thermal comfort,” and “design adaptation” (Braun, et al., 2006).

Meanwhile, quantitative data were analyzed by comparing energy consumption (kWh/m²) between hotels that applied passive strategies and those that did not and evaluating thermal performance through analysis of the average room temperature, daily temperature fluctuations, and relative humidity. To support the validation of the results, microclimate simulation modeling in buildings was conducted using software such as DesignBuilder or EnergyPlus, which measures the thermal performance of buildings virtually based on local Bali climate data (Givoni, 1998).

The validity and reliability of the data are guaranteed through the triangulation process of the method, which compares the results of observations, interviews, and numerical data to find consistency between findings. This approach provides methodological strength to theoretical generalizations as well as a deep understanding of local contexts.

Results and Discussion

Research Results

The results showed that hotels in Bali that applied Balinese vernacular architectural principles and passive cooling strategies experienced a significant increase in energy efficiency and thermal comfort. Some of the hotels that were the subject of the study incorporated elements such as cross ventilation, high ceilings with open rafters, open porches (*bales*) as

transitional spaces, and the use of local materials, including natural stone, teak wood, bamboo, and natural stone, as natural thermal insulation.

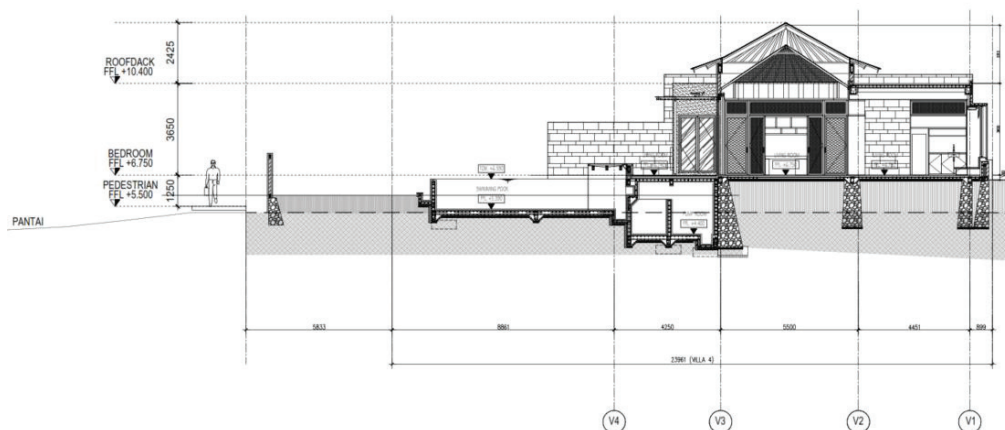
Observation data and temperature measurements show that the average room temperature in buildings that adopt a passive strategy is 2–3°C lower than in conventional buildings with enclosed structures made of glass or plain concrete.



Photo 1. Lobby with multi roof level and overhang to let cross air ventilation.



Photo 2. Roof overhang and vertical screen.



Drawing 1. Roof overhang and vertical screen.

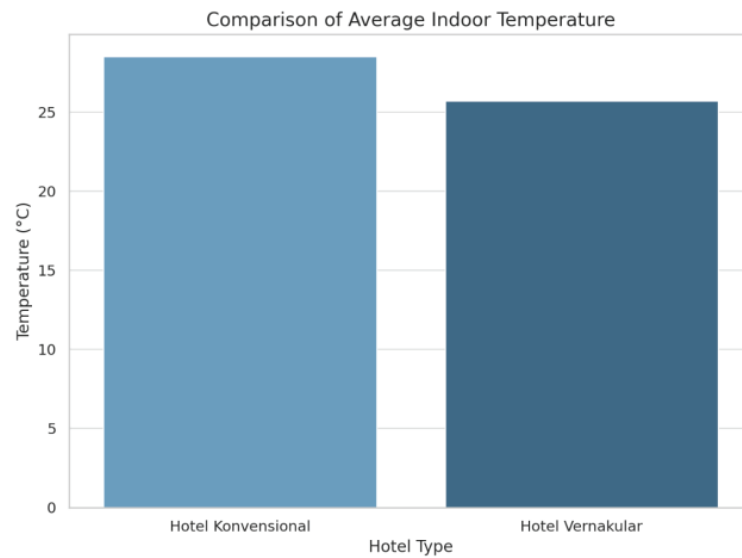


Fig.1. Average indoor temperature comparison between conventional and vernacular-designed hotels.

In addition, the results of interviews with hotel managers show a decrease in electricity consumption for air conditioning (AC) by up to 20%-25% per month compared to similar hotels that do not adopt a passive strategy.

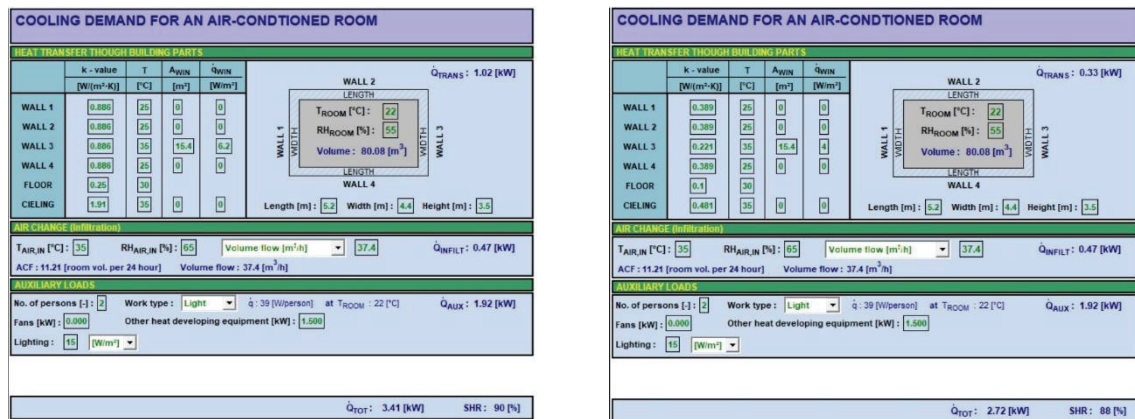


Fig.2. Comparison of cooling demand for an Air-Conditioned room between design without and with passive cooling design with CoolPack software.

Tabel 1. Comparison of saving energy consumption between conventional design and hotels adopting vernacular design with passive cooling strategies

Cooling Demand for Air- Conditioned Room	Heat Transfer through Building Parts	Total Auxiliary Loads
Basic Room	1.02 kW	3.41 kW
Room with Passive Cooling Design	0.33 kW	2.72 kW
Energy Savings (percentage)	67.6%	20.2%

Building orientation factors also play an essential role. Buildings with an east-west orientation, which avoids direct exposure to the afternoon sun, exhibit better indoor temperature stability than those with a north-south orientation. The hotel, which incorporates vegetation as natural shade in its façade and roof areas, also exhibits superior thermal performance and provides a calming psychological effect for its visitors.

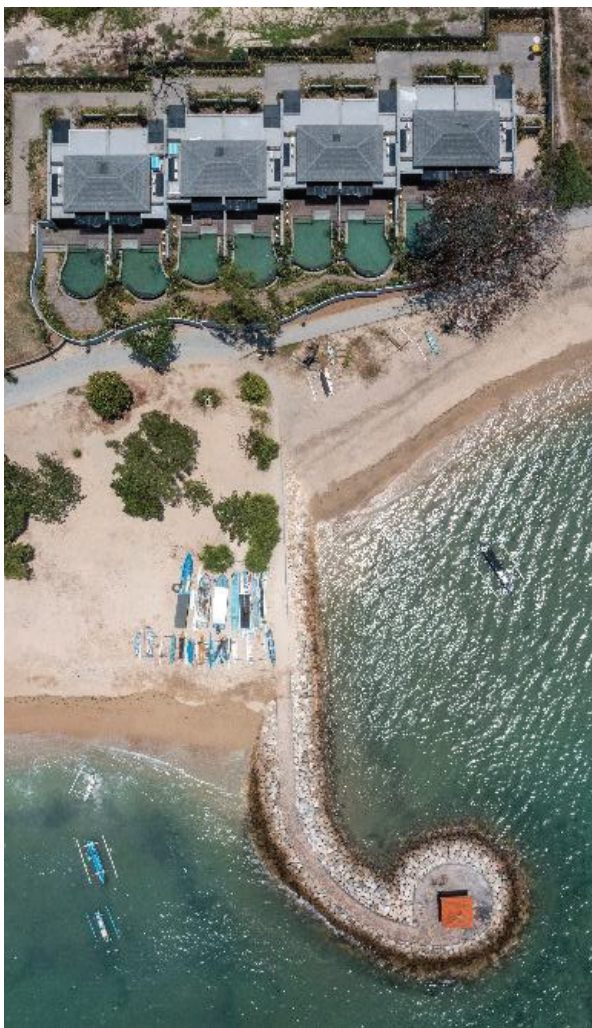


Photo 3. Building orientation towards the South and vegetation.

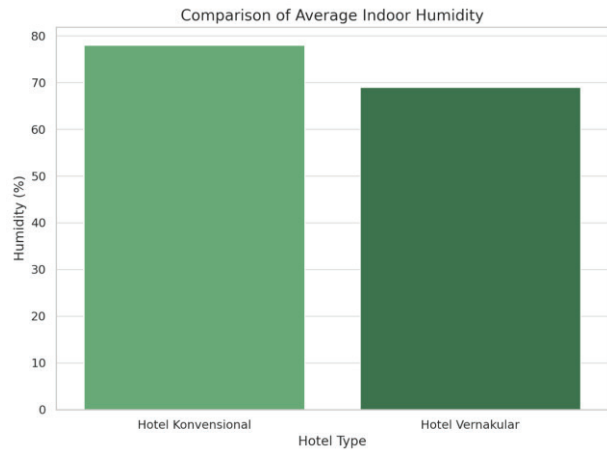


Fig.3. Average indoor humidity levels in different hotel types.

In general, the incorporation of local elements and passive design strategies results in buildings that are not only energy-efficient but also offer added aesthetic appeal and a strong cultural identity for users and hotel managers alike.

Discussion

These findings reinforce the argument that integrating traditional architecture with passive cooling strategies can address energy efficiency challenges in tropical buildings, particularly in the hospitality sector. In line with Givoni's theory (1998), passive strategies are most effective when designed contextually, specifically by paying attention to the local climate, residents' habits, and the availability of local resources. In the case of Bali, this contextual approach is embodied in the form of architecture that blends seamlessly with nature, is open, and utilizes natural airflow as its primary ventilation system.

The *Tri Hita Karana* philosophy, the basis of Balinese architectural cosmology, has also been practically implemented

in modern building design. The concept of harmony with nature (*palemahan*) is translated in the form of green open space and the use of natural elements in the building structure. Harmony with humans (*pawongan*) can be seen from the thermal comfort achieved without excessive energy exploitation. Meanwhile, harmony with spirituality (*parahyangan*) is reflected through the orientation of buildings that follow the sanga mandala system and the use of sacred symbols of Balinese architecture that are maintained (Ardika, 2017; Putra, et al., 2020).

These findings underscore the importance of an architectural design approach that focuses not only on the technical aspects of energy efficiency but also on the socio-cultural aspects. This aligns with Fathy's (1986) idea, which emphasizes that contextual architecture will be more durable, readily accepted by society, and ecologically and socially cultural sustainable. Therefore, design models that integrate local principles and modern strategies become relevant in the construction of adaptive and characterful tropical urban landscapes.

Research Limitations

Although the results obtained show a positive trend, this study has some limitations that need to be noted. First, the number of cases studied is limited to a few hotels in specific areas of Bali, so generalizations to all hospitality buildings in Bali and other tropical regions must be made with caution. Second, this study is cross-sectional, which means it

cannot capture the long-term dynamics of building performance, especially in the face of extreme seasonal climate change.

Additionally, this study has not fully examined the economic aspects of implementing passive design strategies, such as a comparison of initial costs and long-term return on investment (life cycle cost analysis). Additionally, the analysis of user behavior in relation to thermal comfort has not been the primary focus. Follow-up research, employing a longitudinal approach and quantitative evaluation of user perceptions, can enrich the understanding and strengthen the results of this study.

Conclusion

Conclusion

This study concludes that integrating Balinese vernacular architectural principles with passive cooling strategies can be an effective design approach in addressing sustainability challenges in the tropics. This approach not only reduces building energy consumption, especially the need for artificial refrigeration (AC), but also maintains the sustainability of Bali's local cultural identity. The study's results showed that the application of cross ventilation, high roofs, the use of local materials such as natural stone and wood, and the orientation of buildings that follow the Balinese cardinal pattern significantly increased thermal comfort while reducing energy consumption by up to 25%.

Building designs that combine local architectural elements and passive design principles have proven responsive to the

humid tropical climatic conditions while reinforcing the meaning of space within the Balinese cultural context. Therefore, this integrative model can serve as a reference for a new standard in green building design that is relevant to the tropics and sensitive to the local socio-cultural context.

Theoretical and Practical Implications

Theoretically, this research makes a significant contribution to the development of tropical architecture theory and locally based sustainable design. The integrative approach offered expands our understanding of how traditional knowledge, or local wisdom, can be adapted and actualized in contemporary architecture. This aligns with the thinking of Givoni (1998) and Oliver (2006), who emphasize the importance of contextual, adaptive, and ecologically based architecture in addressing climate challenges.

In practical terms, these findings offer strategic insights for architects, urban planners, property developers, and policymakers, particularly in the tourism development and tropical urbanization sectors. Designs based on passive strategies and local wisdom not only provide energy efficiency but also offer aesthetic appeal and cultural added value for users and tourists alike. This design model can be adopted as *a site-specific approach* in both new building projects and renovations of existing buildings in tropical regions.

In addition, this research encourages the importance of incentive and

regulatory policies that promote the use of local materials and passive systems in the design of new buildings. This is particularly relevant in the context of sustainable urban planning, where the issues of energy efficiency and the preservation of local identity are two of the primary challenges.

Recommendations and Suggestions for Further Research

To develop a more comprehensive understanding, further research is recommended to Expand the scope of the case study by involving more types of buildings, such as villas, resorts, and homestays, in various areas of Bali and other tropical regions to reinforce the generalizability of the results. Conducting longitudinal studies to observe the thermal performance and energy efficiency of buildings in the long term, as well as analyzing the impact of seasonal changes and climate variations on building performance. Integrate socio-economic approaches, particularly in assessing occupant and user perceptions of thermal comfort, as well as the feasibility of development and operational costs associated with locally based design and passive strategies. Develop evaluation tools or design assessment parameters that combine technical aspects (energy, climate) and cultural aspects (symbolic meaning, traditional spatial planning) to support a more inclusive participatory design process. Involve cross-disciplinary disciplines, such as anthropology, environmental engineering, and urban planning, to create a more

holistic approach to developing culturally based sustainable architecture.

Thus, this research opens space for further discussion and exploration of the importance of bridging traditional architectural values with the demands of modern design, within the framework of both global and local sustainability.

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Community Driven Design and Planning

INCORPORATING ECOLOGICAL AND CULTURAL SUSTAINABILITY IN THE SELECTION OF ARCHITECTURAL MATERIALS: A MODEL DERIVED FROM TRADITIONAL BALINESE ARCHITECTURE

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Abstract

Integrating ecological and cultural sustainability in architectural material selection has become increasingly important in Southeast Asia, where traditional practices are facing challenges from modernization and environmental concerns. This study develops a sustainable material selection model inspired by traditional Balinese architecture. Using a mixed-methods approach, qualitative and quantitative data were collected through interviews with local artisans and architects, field observations, surveys with design practitioners, and multi-criteria decision analysis (MCDA). The results show that traditional materials such as bamboo, coconut wood, and natural stone are ecologically sustainable due to their low carbon footprint, renewability, and recyclability. These materials also carry symbolic and cultural significance aligned with the principles of Tri Hita Karana—the harmony among humans, nature, and the divine—and Asta Kosala Kosali, which governs spatial arrangements in Balinese architecture. The proposed model integrates material lifecycle assessment, cultural relevance, and local availability, providing a practical framework for sustainable design. Validation through case studies in Bali confirmed the effectiveness of this approach in striking a balance between ecological and cultural priorities. This model offers valuable insights for sustainable development in culturally sensitive contexts across Southeast Asia.

Keywords

Sustainable architecture, ecological sustainability, Balinese architecture, material selection, cultural preservation

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Introduction

Amidst the current era of globalization, the climate crisis, and rapid urbanization, the world of architecture faces a significant challenge in transforming into a more sustainable practice. The Southeast Asian region, particularly Indonesia, is under dual pressure from modernization and environmental degradation, which threaten both cultural heritage and ecosystem balance. According to the *UN Environment Programme (UNEP) report (2022)*, the construction sector accounts for approximately 37% of global carbon emissions and is one of the most significant contributors to climate change. In the local context, data from the *Ministry of Public Works and Public Housing (PUPR)* indicate that the use of conventional building materials in

Bali, an island with strong local wisdom and a distinctive traditional architectural identity, is a concrete example of the conflict between cultural preservation and modern development. Pressure from the tourism sector has led to the rampant use of materials that are not by the local context, both ecologically and culturally. A study by Putra and Dwijendra (2020) found that more than 72% of hospitality projects in Bali over the last decade have ignored traditional architectural principles, including form, spatial planning, and material selection, resulting in the degradation of cultural values and the loss of local characteristics.

Figure 1 below shows a comparison of the trends in the use of building materials in Bali based on a survey of 150 construction projects between 2015–2023:

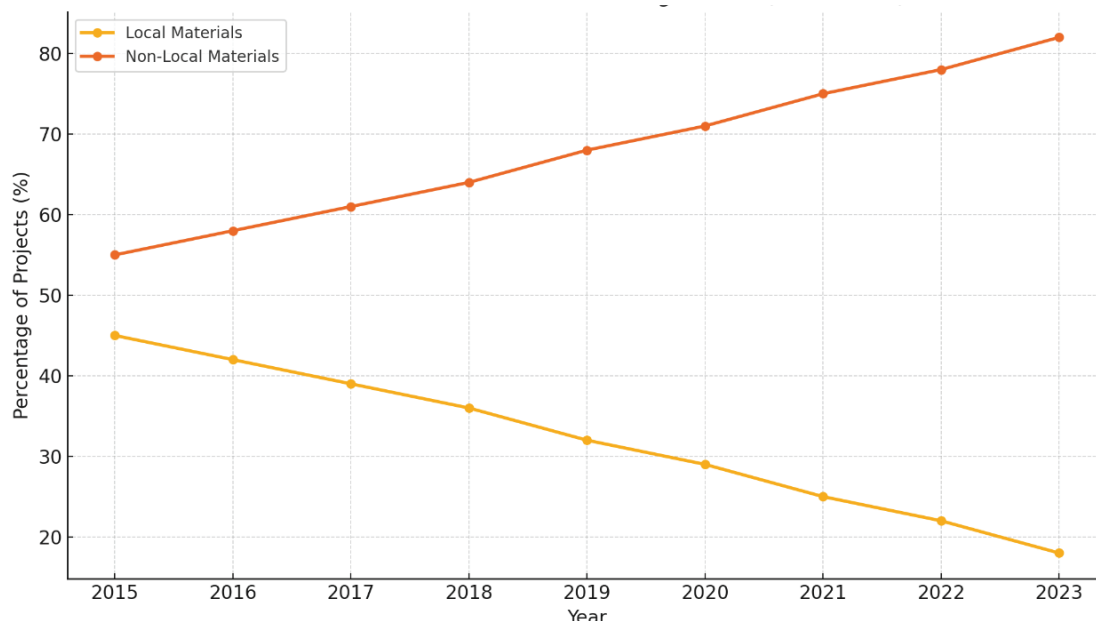


Fig.1. Trends in Architecture Material Usage in Bali (2015-2023)

Indonesia— such as concrete and steel— is increasing by 6.3% annually, in line with the growth of the tourism sector and infrastructure development.

As seen in Figure 1, the trend of using local materials, such as bamboo, coconut wood, and pavement, continues to decline, being used in only 18%

of projects in 2023, while non-local materials, including precast concrete, imported granite, and tempered glass, dominate more than 82% of projects.

This phenomenon highlights the urgent need to develop a material selection approach that considers not only the ecological impact but also the cultural values inherent in the local community. Bali has two main principles that can be used as a foothold in the selection of sustainable architectural materials:

- Tri Hita Karana: the principle of harmony between humans (*pawongan*), nature (*palemahan*), and God (*parahyangan*), which forms the basis of the Balinese people's philosophy of life and is reflected in the design of buildings and the relationship between humans and the environment (Dwijendra, 2021).
- Asta Kosala Kosali: a traditional spatial system derived from Balinese Hindu sacred texts, which regulates the proportion, orientation, and function of space in conventional house architecture (Sudarsana, 2019).

The study aims to develop an architectural material selection model that combines the two principles and considers ecological sustainability through material life-cycle analysis (LCA), as well as symbolic value and local availability. Using a *mixed-methods* approach, this research will make a significant contribution to the development of a contextual, sustainable, and culturally meaningful architectural design approach.

Literature Review

Conceptual and Theoretical Framework

Sustainability in architecture encompasses not only energy and material efficiency, but also ecological, social, and cultural dimensions. Specifically, ecological sustainability is defined as an approach in architectural practice that aims to minimize environmental impact through the reduction of energy consumption and carbon emissions, the use of renewable materials, and the management of the building life cycle (Kibert, 2016; Ching & Shapiro, 2014). Materials that are local, natural, and have minimal industrial processes, such as bamboo, clay, or coconut wood, are often the focus of this approach because they have a low carbon footprint and can decompose naturally (Hassanpour et al., 2020).

On the other hand, cultural sustainability refers to the integration of cultural values, symbolism, local practices, and social identity into the architectural design and construction process (Vale, 2014). This is especially important in a region with a strong cultural heritage, such as Bali, where architecture not only functions functionally but also represents the cosmological system, social relations, and spiritual beliefs of the people. Cultural sustainability is also an instrument in preventing cultural homogenization due to globalization (Rapoport, 2005).

In the context of Bali, the Tri Hita Karana principle serves as the primary conceptual foundation for sustainable architectural development. This principle emphasizes harmony between humans (*pagan*),

the natural environment (palemahan), and spirituality (Narayanan), which implicitly leads to the selection of materials that are friendly to nature and have spiritual meaning (Dwijendra, 2021). The implementation of Tri Hita Karana is seen in the spatial arrangement, building orientation, and selection of traditional house material elements.

Additionally, the Asta Kosala Kosali system serves as a guide to traditional Balinese architecture, governing the layout and proportions of space based on Balinese Hindu teachings. This concept is similar to the principles of *feng shui* in Chinese culture but is more firmly rooted in local belief systems and customs. Asta Kosala Kosali reflects a hierarchical and symbolic structure in space—where the choice of materials and the orientation of buildings are adjusted to the values of purity, function, and cosmic harmony (Sudarsana, 2019).

Thus, the selection of architectural materials in Bali cannot be separated from both ecological and cultural aspects. This conceptual framework is the basis for research in designing a holistic and contextual material selection model.

Previous Research and Gap Identification

Studies on local materials and ecological sustainability have been conducted in various contexts. Rapoport (2005) emphasizes the importance of traditional materials in creating contextual architecture, both ecologically and culturally. He highlighted that materials such as bamboo, wood, and natural stone have a close relationship with

the local environment, as well as have a high symbolic content and heritage value. Bamboo, for example, is a fast-growing, strong, and very low carbon footprint material, making it a top choice in eco-friendly building design (Salura & Sebhikhi, 2017).

Another study by Hassanpour et al. (2020) found that the use of natural materials such as clay and local stone can reduce energy consumption by up to 40% in the life cycle of buildings while improving thermal quality and user comfort. In Bali, research by Dwijendra and Putra (2020) demonstrated that traditional houses constructed with local materials exhibit higher resilience to tropical climate change compared to modern buildings that rely on industrial materials.

However, most of these studies tend to highlight only the ecological or technical aspects of using local materials without systematically integrating cultural elements. Another limitation is the lack of an approach that incorporates local principles such as *Tri Hita Karana* and *Asta Kosala Kosali* in the material selection decision-making model.

In addition, a *multi-criteria decision analysis* (MCDA)-based approach to sustainable material selection is still rarely applied in the local context of Southeast Asia. This study fills this gap by offering a material selection model that simultaneously considers ecological impact, cultural significance, and local availability and is validated through architectural case studies in Bali.

Research Methods

Research Design

This study employs a mixed-methods approach, combining qualitative and quantitative methods to provide a more comprehensive understanding of the selection of sustainable architectural materials based on ecological and cultural values. The selection of this approach is based on the need to explore cultural values and local wisdom in depth through qualitative methods, as well as to test and validate findings empirically through a quantitative approach. The research design strategy employed is a sequential explanatory design, where the research process begins with qualitative data collection, followed by quantitative analysis to reinforce and explain the previous findings (Creswell & Plano Clark, 2018; Ivankova, Creswell, & Stick, 2006). This approach is considered appropriate because it effectively bridges the symbolic meaning in Balinese culture with the practical needs of material selection in contemporary architectural design.

Data Collection

Data collection was conducted through three primary techniques: in-depth interviews, field observations, and quantitative surveys. In-depth interviews were conducted with 12 key informants, including local architects, traditional building craftsmen, and traditional leaders who have in-depth knowledge related to the philosophy of *Tri Hita Karana* and *Asta Kosala Kosali*. Semi-structured interview techniques were used to explore

their perceptions of material sustainability from spiritual, social, and ecological aspects. In addition, observations were conducted directly on ten traditional and semi-traditional buildings in the Ubud, Gianyar, and Badung areas, focusing on the types of materials used, construction techniques, and the relationship between the building structure and its surrounding environment.

To strengthen the validity of the data, a quantitative survey was conducted among 100 respondents, comprising architects, interior designers, and building consultants who are actively working in Bali. The survey employed a five-point Likert scale questionnaire to assess participants' perceptions of 12 material selection criteria, categorized into ecological aspects (such as life cycle assessment, carbon emissions, and recyclability) and cultural aspects (including symbolic meaning, spiritual value, and customary acceptance). The questionnaire has been validated by three experts in sustainable architecture through content validity and tested for reliability, yielding a Cronbach's Alpha value of 0.842, indicating high internal consistency (Hair et al., 2019).

Analytical Approach

The analytical approach employed in this study utilizes Multi-Criteria Decision Analysis (MCDA), an effective method for handling complex decision-making processes that involve various qualitative and quantitative criteria. This method is used to assess and compare several material alternatives based on three

main dimensions, namely ecological sustainability, cultural relevance, and local availability (Cinelli, Coles, & Kirwan, 2014). First, identification of the main criteria and sub-criteria is carried out through qualitative findings and literature review. Furthermore, weighting was carried out using the Analytic Hierarchy Process (AHP) method, based on the results of surveys and discussions with experts, which resulted in weights of 40% for the ecological aspect, 35% for the cultural aspect, and 25% for the local availability aspect. Five types of local materials commonly used in Balinese architecture—bamboo, coconut wood, pavement, clay, and palm oil—were analyzed and scored based on the specified parameters. The analysis process is carried out through the scoring stage, normalization, and value aggregation, culminating in the final ranking of each material alternative. Model validation was conducted through two case studies of contemporary architecture projects in Gianyar and Ubud, which still incorporate local principles. The validation results show that the developed MCDA model is able to recommend materials that not only meet the aspects of ecological sustainability, but also have symbolic and spiritual value that are culturally relevant in the Balinese context.

Table 2. MCDA Criteria and Subcriteria

Categories	Subcriteria	Weight (%)
Ecological	LCA, Carbon Emissions, Recycling	40
Cultural	Symbolic, Spiritual, Customary Value	35
Locality	Local Availability, Transport Costs	25

Results and Discussion

Research Results

Based on the results of data analysis collected through observations, interviews, and quantitative surveys (see Chapter 3), it was found that the three main types of materials in traditional Balinese architecture—bamboo, coconut wood, and natural stone of the paras type—have advantages both in terms of ecological sustainability and cultural relevance. These three materials show high scores in *the Life Cycle Assessment* (LCA) with low carbon emissions and renewable material properties. Bamboo, for example, has a growing time of only 3–5 years and produces a 67% lower carbon footprint than concrete in the life cycle of buildings (Hassanpour et al., 2020).

From a cultural perspective, the material is rich in symbolic meanings and religious rites that align with the principles of *Tri Hita Karana* and the traditional *spatial system of Asta Kosala Kosali*. For example, bamboo is used for *penjor* in religious rituals, while paras stone is used as a structural and decorative element in temples and traditional houses. Coconut wood is widely used as structural

beams and ceilings, which is believed to bring a balance between natural elements and ancestral spirits (Dwijendra, 2021).

The following table 1 summarizes the quantitative scores of five materials based on three key dimensions in the MCDA model: ecological impact, cultural relevance, and local availability.

Table 1. MCDA Score for Balinese Traditional Materials

Material	Ecological (%)	Culture (%)	Locality (%)	MCDA Total Score (%)
Bamboo	90	95	85	90
Coconut Wood	80	85	75	81.25
Batu Paras	70	80	70	73.75
Citrus Fruit	65	60	85	68.75
Clay	60	65	80	66.25

The material selection model developed in this study integrates three main dimensions: (1) ecological impact (LCA-based), (2) cultural relevance (local symbolic, spiritual, and aesthetic value), and (3) local availability. The weights for each dimension were determined using the Analytic Hierarchy Process (AHP): 40% for ecological aspects, 35% for cultural elements, and 25% for local availability. The results of the evaluation of the five local materials are presented in the following Figure 2.

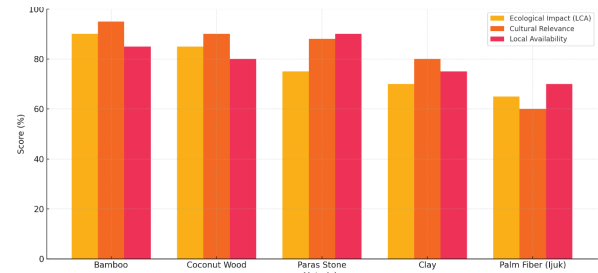


Fig.2. Sustainability Evaluation of Traditional Balinese Materials (Scored by MCDA-AHP Model)

The quantitative data in Figure 2 and Table 1 were obtained from the results of a survey of 100 respondents and the weighting of AHP conducted with three architectural sustainability experts (see Research Methods, Analytical Approach subsection).

As seen in Figure 2, bamboo occupies the highest position in terms of ecological sustainability (90%) and cultural relevance (95%), followed by coconut wood and pebblestone. Materials such as palm oil and clay have moderate value but still show considerable potential if managed through a locally based approach.

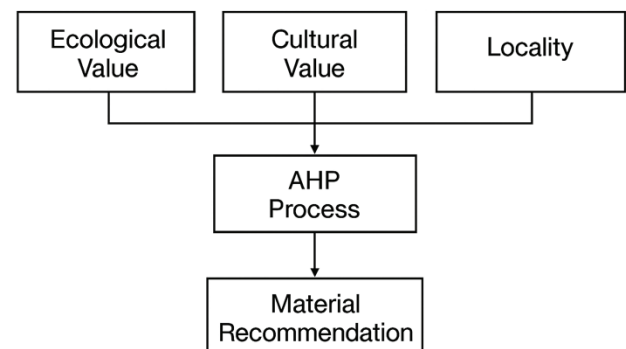


Fig.3. Conceptual Diagram of Material Selection Model

This model has been tested through two case studies of building projects in Gianyar and Ubud, which demonstrate that the model's recommended results align with actual field practices, where a combination of bamboo and flat stone is

predominantly used in building structures and facades.

The concept of sustainability, initially rooted in resource efficiency and reducing



Fig.4. Case Study of Building A (Ubud) and B (Gianyar)

Figure 4 below shows two case studies of buildings in Gianyar and Ubud that were the location of the model validation. This building still uses traditional materials such as bamboo and paras stone, which shows the real implementation of the principles of Tri Hita Karana and Asta Kosala Kosali. In the Ubud project, the dominance of bamboo and coconut wood shows high adherence to local principles, while in the project in Gianyar, a combination of new materials such as paras stone and tempered glass began to appear. The MCDA model is able to reveal differences in material choices based on the weight of the ecological and cultural value of each project.

Discussion

The findings of this study confirm that preserving local culture is not only in line with the principles of ecological sustainability but also enriches the values of sustainability in a multidimensional way, especially in tropical, spiritual, and communal contexts, such as in Bali.

environmental impact, has evolved into a holistic approach that incorporates cultural identity, symbolic values, and local wisdom as essential elements in the design and development process (Vale, 2014; Rapoport, 2005).

In this context, materials such as bamboo, coconut wood, and paras stone are judged not only for their low carbon footprint and ease of recycling but also for their attachment to the social structure and spiritual system of Balinese society. For example, bamboo is not only a construction material but is also used in various religious practices such as *penjor*, *rebuttal*, and traditional ceremonies, making it a symbol of life, fertility, and the vertical connection between humans and God (*palemahan-parahyangan*). This supports the view of Dwijendra and Utami (2022), who emphasize that material sustainability in traditional Balinese architecture is not only a technical issue but also a form of expression of sacred values that are part of society.

Furthermore, the principle of Tri Hita Karana as the philosophy of life of the Balinese people becomes an integrative foundation that connects humans (*pawongan*), nature (*palemahan*), and God (*parahyangan*). In architectural practice, this philosophy is implemented in the selection of materials, the orientation of the building, and the relationship between the building and the surrounding natural landscape. The use of local materials that are renewable and have spiritual significance is believed to strengthen environmental karma and spiritual blessings, which in turn enhances the long-term social acceptance and structural sustainability of buildings (Dwijendra, 2021).

Additionally, the multi-criteria decision analysis (MCDA) approach employed in this study represents a significant methodological contribution. The MCDA enables a systematic evaluation of various material alternatives based on ecological, cultural, and local considerations. The finding that bamboo scored highest in all of these dimensions suggests that the contextual use of local materials has a strong scientific basis and is not just a local customary practice or romanticism. This approach is also in line with the United Nations Sustainable Development Goals (SDGs), particularly SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production), which encourage integration between sustainability and cultural inclusivity (UNEP, 2022).

In a global context, this model addresses the challenges posed by

the homogenization of architecture, characterized by the dominance of modern construction technology that often overlooks local identity. In an increasingly uniform urban landscape, local values are key to maintaining differentiation and *place identity* (Norberg-Schulz, 1980). By making cultural value a key variable in material selection, architecture can emerge as a response that is not only technical to the climate crisis but also as a social expression and collective identity that permeates people's daily lives.

In contrast to the global MCDA model which generally only considers technical and economic factors, this model integrates the symbolic and spiritual dimensions of local characteristics through the principles of Tri Hita Karana and Asta Kosala Kosali. This creates a culture-based evaluative approach that is not found in conventional MCDAs such as Promethee or Topsis (Cinelli et al., 2014).

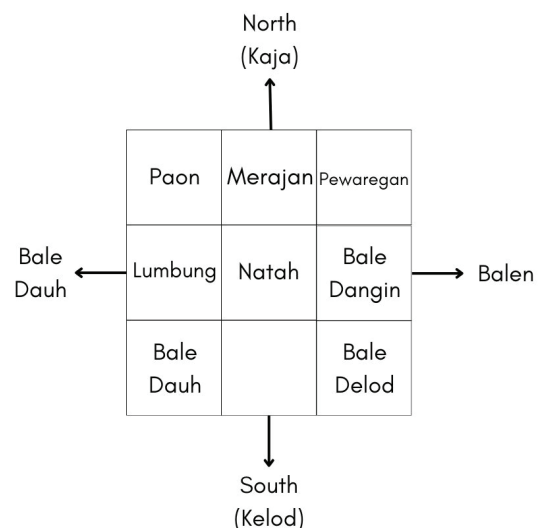


Fig.5. Traditional Layout Scheme of Asta Kosala Kosali

Although Tri Hita Karana has been widely discussed in literature, Asta Kosala Kosali, as a traditional spatial system, is still under-evaluated. In this system, the orientation of the building, the selection of materials, and the relationship of humans to the surrounding environment are largely determined by the degree of purity of the direction and location of the space, which can be depicted in customary spatial maps (see Figure 5).

In general, the approach offered in this study is not only valuable for the Balinese context but also has the potential to be replicated in other regions with similar cultural richness. This model paves the way for a more systematic integration of ecological and cultural sustainability in contemporary architectural practice, building a bridge between tradition and innovation, and between local wisdom and global needs.

Research Limitations

Although the results of this study demonstrate strong model validity, several limitations should be noted. First, the geographical scope of this study is limited to the central Bali region, specifically Gianyar and Badung, so generalizations to other regions should be made with caution. Second, not all aspects of life *cycle assessment* (LCA) can be analyzed quantitatively due to the limitations of local secondary data on embodied energy, production emissions, and the actual useful life of materials. Third, the economic dimension has not been included as an explicit variable in the model, despite the fact that price and

market availability also influence the design decision-making process.

For further research, it is recommended to expand this model to other regions with different cultural characteristics, such as Lombok, Toraja, or Papua. Additionally, integrating models into digital platforms, such as BIM (Building Information Modeling), will enhance the accuracy and efficiency of implementation in real-world projects.

Conclusions and Recommendations

Conclusion

This research has successfully developed a model for selecting architectural materials based on the principles of ecological and cultural sustainability, drawing on the philosophy and practice of traditional Balinese architecture. The model is formulated through a *multi-criteria decision analysis* (MCDA) approach that integrates three main dimensions: (1) environmental impact based on a material life cycle *assessment* (LCA), (2) cultural relevance that includes local symbolism, spirituality, and aesthetics, and (3) the availability and acceptance of materials locally.

This MCDA model successfully provides material selection recommendations that integrate ecological, cultural, and locality aspects. Bamboo and paras stone materials show the best performance in the Balinese context. These models can be used in design decision-making that maintains cultural identity while addressing sustainability challenges.

The findings show that materials such as bamboo, coconut wood, and

limestone have the highest scores in all three dimensions. Not only is it proven to be low in carbon emissions and easy to renew, this material also has high symbolic value in Balinese society, such as its association with ritual elements, traditional spatial order, and *the Tri Hita Karana philosophy*. This model has been tested and validated through two case studies in Gianyar and Ubud, and has proven effective in recommending materials that are appropriate to the local ecological and cultural context.

Thus, this study demonstrates that sustainability is not only determined by material efficiency but also by the material's connection to the value system of the people who use it. This model can serve as a decision-making tool for designers and developers who aim to create buildings that are not only technically "green" but also culturally grounded.

Theoretical and Practical Implications

Theoretically, this research contributes to the sustainability literature in architecture by expanding the sustainability thinking framework from its initial focus on environmental and technical dimensions towards a holistic sustainability approach that includes the cultural dimension as an integral factor (Vale, 2014). This model demonstrates that local values, such as Tri Hita Karana and Asta Kosala Kosali, can be converted into a systematic, measurable, and replicable evaluative framework.

In practical terms, this model offers a practical guide for architects, urban

planners, property developers, and policymakers to select building materials that consider not only environmental sustainability but also cultural heritage. In the context of development that often lacks local identity, this model offers an approach based on local wisdom and can be integrated into traditional housing projects, tourist village development, public buildings, and heritage areas.

Furthermore, this model also has the potential to support the formulation of green building licensing regulations that are tailored to local culture, which is currently not widely adopted in technical regulations and national and regional development policies.

Policy Implications

The results of this research can serve as a reference for formulating policies on the selection of building materials, drawing on local wisdom, in tourism areas such as Bali. Local governments can develop technical guidelines for the selection of environmentally friendly materials based on cultural values and integrate them into culture-based SLF or PBG regulations.

Recommendations and Suggestions for Further Research

Based on the results and limitations discussed earlier, several important recommendations for future research are presented. First, the development of similar models is suggested to be carried out in other regions in Indonesia and Southeast Asia, such as Lombok, Toraja, or Minangkabau, which have different cultural and environmental characteristics. This will expand generalizations and

enrich the database for the formulation of culture-based sustainability models.

Second, it is recommended to integrate these models into digital technology platforms, such as Building Information Modeling (BIM), to enable real-time simulation of sustainability impacts in the design process. This integration will assist designers not only in selecting materials, but also in evaluating the thermal performance, energy costs, and carbon emissions of the entire building based on the combination of materials used (Chong et al., 2017).

Third, in the future, it is necessary to take a participatory approach to model development, which involves more indigenous communities, community leaders, and building users directly. This approach will ensure that the material selection is not only technically and culturally feasible but also has social legitimacy and long-term sustainability.

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Memories, Histories, and Urban Landscapes

Streetscape Characteristic of Pecinan Pasar Gede Surakarta: Case Studies corridor of RE Martadinata and Urip Sumoharjo Street

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Abstract

Chinatown at Pasar Gede in Surakarta is an urban area with a strong identity shaped by the interplay of culture, history, and socio-economic dynamics. Its visual identity is formed through physical elements such as historic buildings, narrow alleys, and symbolic components deeply rooted in Chinese culture. These elements, along with the social activities taking place in the area, create a public space that serves not only as a marketplace but also as a medium for preserving tradition. Nighttime activities, such as night markets and cultural festivals, further strengthen the connection between space and its inhabitants, reviving the community's collective memory. This study aims to identify the relationship between cultural elements, spatial structures, and the social activities occurring in Chinatown at Pasar Gede. A descriptive qualitative approach is employed, using direct observation and interviews with vendors, visitors, and area managers. The research findings show that physical elements like architectural features, distinctive signage, and the accessibility of public spaces significantly influence the visual identity of the area. Moreover, social activities especially those related to cultural celebrations such as Chinese New Year, Grebeg Sudiro, and night markets serve as means for the community to interact with the space while enriching their cultural experience. The study concludes that Chinatown at Pasar Gede functions not only as a commercial hub but also as a vibrant and dynamic cultural space. Despite the pressures of modernization, the area has succeeded in preserving its cultural essence through active community participation in social and cultural events. Therefore, this area has the potential to serve as a model for culturally based urban development that enhances city identity without sacrificing its traditional character.

Keywords:

Chinatown, Streetscape Cultural Identity, City Festival, Social Activities, Urban Heritage.

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1. Introduction

Chinatown in various Asian cities represents urban areas rich in historical, cultural, and social values. Physical features such as narrow alleys, historic buildings, and traditional layouts form part of collective memory. In Southeast Asia, elements like the five-foot walkway and tropical vegetation support local identity (Shamsuddin, 2011), while classical architecture is seen as more meaningful than modern forms (Askari & Dola, 2009).

Informal activities street vendors, performances, and rituals strengthen Chinatown's role as a vibrant public space, aligning with the idea of everyday urbanism (Franck & Stevens, 2007). Case studies from Jonker Street and Malioboro show the importance of integrating heritage buildings with daily practices (Idid et al., 2004; Henderson, 2009; Irawati et al., 2014). Urban identity emerges from designs reflecting local culture (Rapoport, 1977).

In Pasar Gede, Chinatown's cultural expression is seen in façades, balcony details, and signage, though many elements face visual decline (Astuti et al., 2021). Continuity and visual contrast are crucial for emotional engagement with the city (Cullen, 1961). However, the current visual quality, particularly along

the southern side of Jalan RE Martadinata, reflects urban transformation traditional architectural elements have been altered or lost, leading to a fragmented streetscape and weakened cultural identity. Despite this, Chinatown at Pasar Gede continues to adapt. Heritage buildings are repurposed into shops and cafés, and key streets integrate old and new elements, including bike lanes and signage. Cultural tourism, supported by public art such as lanterns, murals, and gates, sustains local identity and connects tradition with contemporary urban life, positioning Surakarta as a city that values inclusion and heritage.

2. Methodology

The issue addressed in this research is related to the characteristic of the streetscape in the Chinatown area of Surakarta. The evolving streetscape of Pasar Gedhe is observed to reflect a gradual decline in the presence and visibility of Chinese cultural identity within Surakarta's historic Chinatown corridor. This phenomenon raises concerns about the continuity and representation of cultural values in urban spaces with strong historical significance.

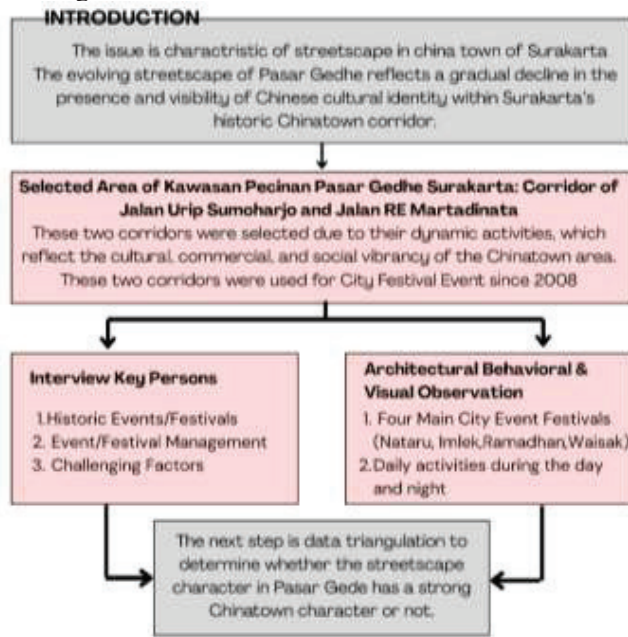


Fig.1. Methodology

Source : Personal Documentation 2025

First, the selected area of study is the Chinatown area of Pasar Gedhe in Surakarta, specifically focusing on the corridors of Jalan Urip Sumoharjo and Jalan RE Martadinata. These corridors were chosen because of their dynamic activities that reflect the cultural, commercial, and social vibrancy of the Chinatown environment. Moreover, these corridors have consistently been used as the location for major city festival events since 2008, making them a rich source of data for cultural expression and public engagement.

Second, the data collection process is conducted through two primary methods. The first method is a series of structured interviews with seven key informants who are directly involved in the cultural and spatial dynamics of the Chinatown area. These key persons are Sumantri, Widjaja, Kristianto, Sugiarto, Cahaya, Yuanita, and Putri. Each of them provided

valuable insights on various topics, including the history of traditional events and festivals, the management and organization of such events, and the challenges they face in maintaining the cultural identity of the area. The second method involves architectural behavioral and visual observation, particularly focused on four major city festivals—Natal dan Tahun Baru (Nataru), Imlek (Chinese New Year), Ramadhan, and Waisak. In addition, daily activities along the two selected corridors were observed during both day and night to understand the everyday patterns and interactions that shape the streetscape.

Third, the information obtained from both interviews and field observations is analyzed through a process of data triangulation. This analytical step is essential to validate and interpret whether the current streetscape character in Pasar Gedhe still strongly embodies the identity of a historic Chinatown or if it has experienced a significant shift. Through this method, the study aims to understand how cultural presence is expressed, preserved, or diminished in the context of evolving urban life.

3. Findings and Discussion

3.1 General Overview of the Pasar Gede Corridor

The Pasar Gede area is located within the Chinatown district in the center of Surakarta City and is structured around four main street corridors: Jalan Urip Sumoharjo, Jalan RE Martadinata, Jalan Suryo Pranoto, and Jalan Juanda. Among these, this study specifically focuses

on two primary corridors Jalan Urip Sumoharjo and Jalan RE Martadinata as they serve as the main venues for various city festivals such as Chinese New Year and Grebeg Sudiro. These two corridors undergo significant transformations in both activity and visual appearance between regular daily use and cultural celebrations. They also play a vital role as public spaces that dynamically represent the identity of Surakarta's Chinatown.

the royal palace and mosque creates an interwoven social fabric that unites different community layers.

The market complex consists of Pasar Gede West (fruits and coffee stalls) and Pasar Gede East (basic goods), both designated heritage buildings. The nighttime ambiance along Jalan Urip Sumoharjo and RE Martadinata lined with lanterns, shops, 24-hour accommodations, and pharmacies turns the corridor into

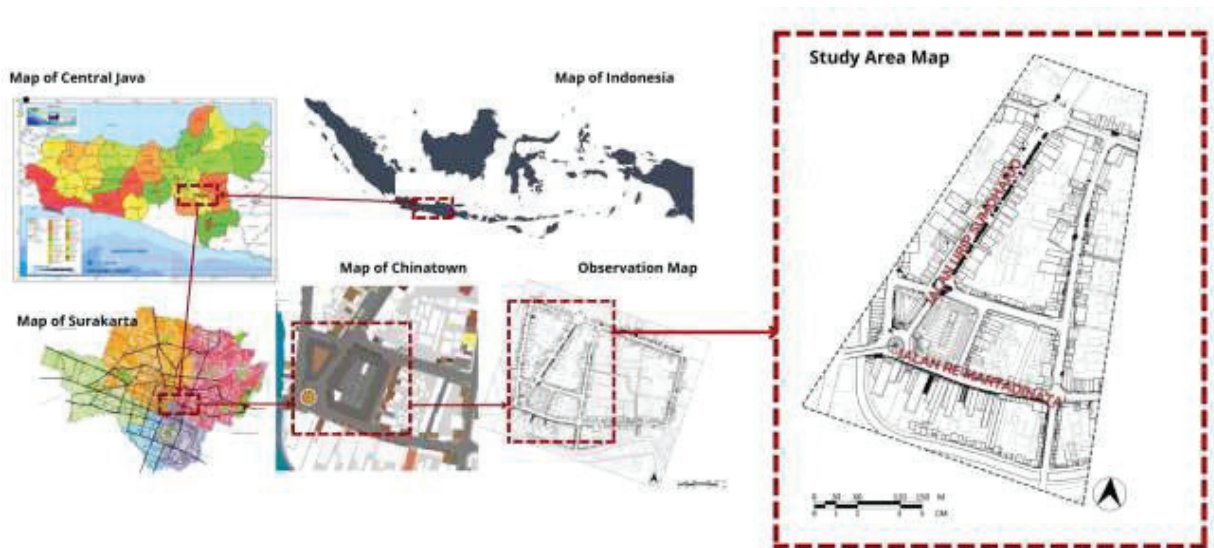


Fig.2. Map of Surakarta, Research Location Pasar Gede City Source : Solo Digital Map, 2010, Personal Documentation 2025

Established in 1927 by architect Thomas Karsten, Pasar Gede is not only the city's oldest and largest traditional market but also a significant urban node where Javanese, Chinese, and colonial cultures intersect. The presence of Chinese shophouses, the Tien Kok Sie Temple, and the Pepe River as a natural boundary reinforces the area's identity. Pasar Gede functions not only as a commercial hub but also as a flexible public space for cultural expressions like the Grebeg Sudiro and Chinese New Year celebrations. Its location near

a vibrant living urban environment, especially after dark.

3.2 Deconstruction of Chinatown Visual Identity Due to Physical Modernization

The modernization of the Pasar Gede area has led to a significant deconstruction of Chinatown's visual identity, particularly along Jalan RE Martadinata. Physically, the transformation is evident in the building façades, which now feature modern materials such as reflective glass, aluminum composite panels (ACP), and contemporary commercial signage.

These elements have replaced traditional Chinese architectural features such as curved roof ornaments, latticed wooden windows, and classic façade details. As a result, the spatial and ethnic distinctiveness of the area has faded, and the Chinatown character that once visually defined the streetscape has largely diminished.

However, the main buildings that serve as the core locations for city festivals

to approximately 40%. This decline is largely due to a local regulation that required buildings to recede 2.5 meters from their original positions. Although the physical forms have changed, the primary function of the buildings as shophouses (rumah toko) remains intact.

From a historical perspective, Pasar Gede was established in 1744 as a royal gift from the Keraton, with construction

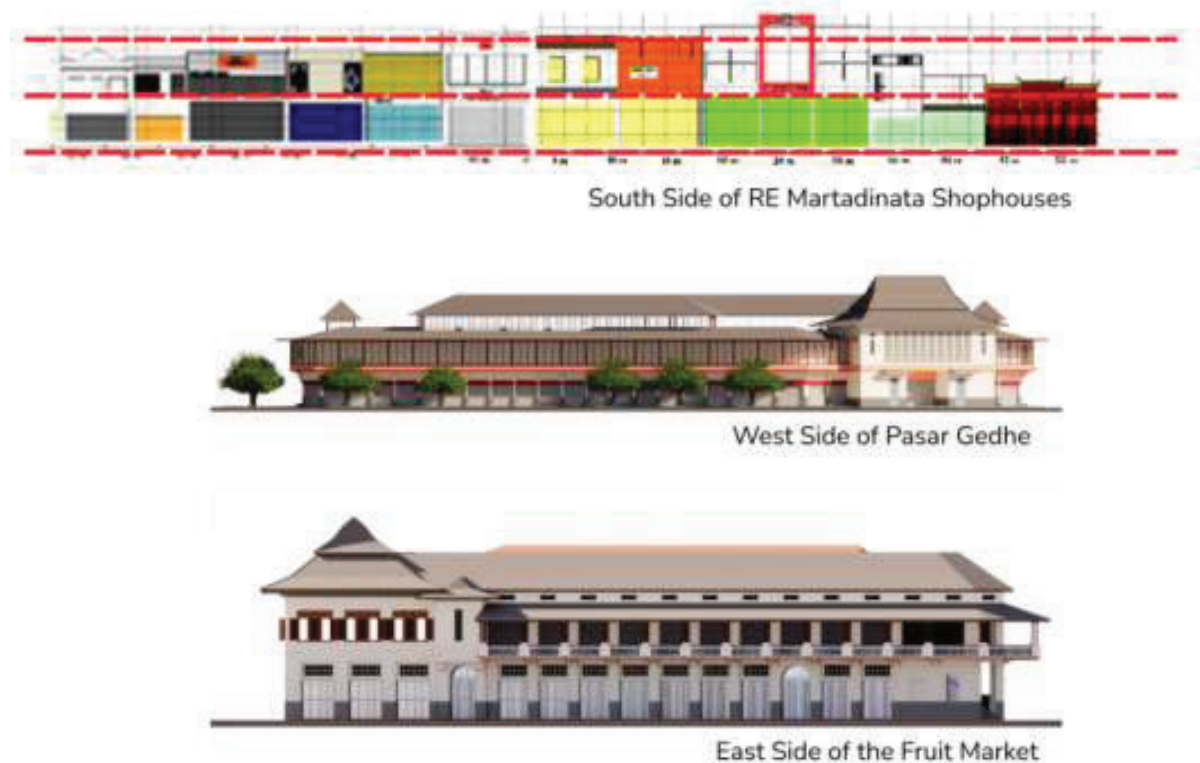


Fig.3. Sections and photos of Pasar Gedhe, the fruit market, and several buildings on RE Martadinata Street Source : Personal Documentation, 2025

such as Pasar Gede and the fruit market building have preserved their architectural authenticity 100% and are designated as heritage buildings. These structures provide an authentic visual backdrop for events like Grebeg Sudiro and Chinese New Year. In contrast, the southern row of buildings along Jalan RE Martadinata has experienced significant transformation, with architectural authenticity reduced

completed between 1745 and 1748 (Sumantri, 2025). Over the centuries, the area evolved into a central hub for the Chinese-Indonesian community, with legacy institutions such as the Tien Kok Sie Temple (Widjaja, 2025). However, the loss of architectural heritage has also brought with it the fading of symbolic values once embedded in the built environment. The collective memory of

the community regarding Chinese cultural identity has gradually eroded. Today, Chinatown's visual identity in Pasar Gede is mostly visible in temporary forms during cultural events such as Chinese New Year and Grebeg Sudiro.

The challenge of preserving Chinatown's visual identity is further complicated by the absence of strong conservation policies for the surrounding areas. The transformation of building forms, especially along Jalan RE Martadinata, has resulted in a visual homogenization that erodes the unique Chinese architectural character once dominant in the district.

3.3 City Festivals as Drivers of the Emerging Chinatown Identity

City festivals such as Chinese New Year, Grebeg Sudiro, Ramadan, Vesak, Christmas, and New Year have played a crucial role in regenerating the identity of the Chinatown area in Pasar Gede, Surakarta. From a physical perspective, each celebration introduces thematic spatial transformations through visual elements tailored to the unique character of the event. During Christmas and New Year, the area is adorned with Christmas trees, twinkling lights, and snowy-themed decorations. During Ramadan and Eid al-Fitr, the atmosphere shifts to a warm and spiritual tone through the

use of lanterns, Islamic calligraphy, and crescent moon ornaments. Vesak brings a tranquil ambiance with miniature stupas, lotus motifs, and soft Buddhist chants. Meanwhile, Chinese New Year and Grebeg Sudiro offer the most prominent expressions of Chinese identity, with dominant red tones, dragon ornaments, traditional Chinese gateways, and rows of hanging lanterns lining the main street.



Fig.4. Situation the Grebeg Sudiro Event
Source : Personal Documentation, 2025

Grebeg Sudiro, established in 2008 as a community-driven initiative (Kristianto, 2025), has evolved from a simple parade into a major cultural event featuring the Jodang parade, food bazaars, and cross-cultural performances. The management of this event involves 50 local committee members and 50 external volunteers (Sugiarto, 2025), demonstrating strong community collaboration. Donny Mahesa and his team, for example, manage the lantern production, a process that spans four months prior to the event (Widjaja, 2025).



Fig.5. The atmosphere during the city festival, showing the event-themed gateway leading to Pasar Gedhe.

Source : Personal Documentation, 2025

In line with Rapoport's (1977) theory, the built environment here acts as a reflection of dynamic and evolving cultural values. The increasingly thematic design of Jodang and kinetic lantern installations, as highlighted by Widjaja (2024), represent a regenerative approach to visual identity that resonates with younger audiences.

Beyond the physical, these city festivals also reinforce non-material dimensions such as collective memory, emotional attachment, and cultural pride. Grebeg Sudiro exemplifies the process of Javanese– Chinese cultural acculturation through active community involvement. This aligns with Lefebvre's (1991) concept of space as socially produced, where festivals become tools of spatial negotiation and identity assertion. These rituals empower ethnic minority communities to maintain visibility and cultural relevance within urban space (Kristianto, 2024).

Nevertheless, several challenges persist. The lack of regeneration in traditional crafts like Jodang and lantern-making threatens the sustainability of these visual traditions (Widjaja, 2025). Furthermore, infrastructure development such as the Kali Pepe water tourism project still faces technical hurdles (Cahaya, 2025).

Amid these challenges, urban development efforts continue. The Grebeg festival is now part of the Karisma Event Nasional, supported by the Ministry of Tourism with funding up to IDR 200 million (Sugiarto, 2025). Spatial enhancements, including murals,

Chinese-Javanese hybrid lanterns, and architectural accents along RE Martadinata, contribute to the ongoing revitalization of Chinatown's visual narrative (Putri, 2025).

3.4 Spatial Function Shifts Due to Daytime and Nighttime Activity Dynamics

Pasar Gede, a traditional market that operates almost around the clock, has undergone notable spatial functional shifts due to the dynamic interplay of daytime and nighttime activities. Pedestrian paths and slow lanes are often repurposed as informal trading zones for night vendors and food stalls. Spaces intended for circulation or loading have become temporary parking areas or commercial spots, leading to spatial friction among pedestrians, vendors, and vehicles.

Behind these physical changes lie adaptive management practices informed by community habits and temporal negotiations. For instance, nighttime logistics activities are strategically scheduled to reduce daytime congestion. These informal systems reflect the community's resilience and creative use of limited space. Pasar Gede thus operates not merely as a physical market but as a socially dynamic zone where identity is continually shaped through everyday interactions.

This daily cycle of transformation shows how urban space can be both contested and negotiated, shaped as much by cultural memory and local agency as by formal planning mechanisms.



Fig.6. The atmosphere of Pasar Gedhe in the past, before and after the Chinatown-themed events began sumber: <https://pin.it/5HDkSkZp1>, Personal Documentation, 2025



Fig.7. Atmosphere of Jalan Urip Sumoharjo ,RE Martadinata and the Fruit Market on Regular Days
Source : Personal Documentation, 2025

4. Conclusion

The visual quality of Chinatown in Pasar Gede today reflects a shifting urban reality, where traditional architectural elements along the southern side of Jalan RE Martadinata have been largely replaced or altered, resulting in a fragmented streetscape. While core heritage buildings like Pasar Gede and the fruit market retain their original form and cultural value, much of the surrounding urban fabric has lost its Chinese architectural character, making the once-distinct Chinatown atmosphere less visible. The remaining physical traces alone no longer convey the area's rich identity.

In this context, city festivals have become key agents in revitalizing the spirit and visual identity of Chinatown. Events like Grebeg Sudiro and Chinese New Year inject vibrant, symbolic, and culturally layered expressions into the streets, temporarily restoring the area's ethnic character through decorations, performances, and public participation. These celebrations not only enliven the streetscape but also renew collective memory and cultural pride. Dynamic festivals now sustain and animate Pasar Gede's Chinatown identity for both locals and visitors.

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Communities and Place (Kampungs)

STUDY OF TYPOMORPHOLOGY OF MATARAM YOGYAKARTA CANAL ON CHARACTERISTICS AND VISUAL IDENTITY OF “MONUMENT THRONE FOR THE PEOPLE”

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Abstract

The Mataram Canal is a crucial infrastructure built during the Japanese occupation of Yogyakarta (1942–1944) by Sri Sultan Hamengkubuwono IX. Over time, the Mataram Canal has undergone transformations in its function and physical characteristics, including its use for domestic purposes, fisheries, and even tourism. However, land-use changes and urban development have led to the degradation of its visual identity and historical value. This study aims to assess the extent to which the Mataram Canal still represents its identity as the “Monument of the Throne for the People.” Using a qualitative descriptive method with a typo-morphological study, the research analyzes changes in the physical structure and spatial characteristics over time. The findings indicate that the transformation of the Mataram Canal has been significant, both in its physical form and function. The original typology has changed due to urbanization, commercialization, and land-use conversions in its surroundings. These changes have resulted in a reduction of open spaces and a diminishing clarity of the canal’s visual identity as a cultural heritage. This study recommends conservation and management efforts based on historical character and spatial typology to preserve the cultural value of the Mataram Canal.

Keywords

Mataram Canal, typomorphology, visual identity, cultural heritage, spatial transformation

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Introduction

The Mataram Canal was built during the Japanese occupation of Indonesia, specifically in Yogyakarta, between 1942 and 1944. This project was initiated by Sri Sultan Hamengkubuwono IX as a strategic response to the conditions at the time. During this period, the people of Yogyakarta faced hardships and were required to participate in the forced labor program (*romusha*) imposed by the Japanese. The construction of the canal, which connects the Progo River on the western side of Yogyakarta (upstream) to the Opak River on the eastern side (downstream), aimed to provide an irrigation channel that would enhance agricultural productivity while simultaneously protecting the people from inhumane treatment during the occupation.

Sultan HB IX had three main motivations: philosophical, economic, and nationalistic. The philosophical motivation was derived from the teachings of Sunan Kalijaga, which suggested that the Yogyakarta Sultanate would prosper if the two rivers flanking Yogyakarta were connected into a single flow. The economic motivation was linked to the ruler's vision of improving farmers' welfare by providing irrigation for rice fields. The construction of the Mataram Canal also reflected Sultan HB IX's nationalism, as he sought to protect the people from the Japanese *romusha* labor demands (Utomo, 2021).

Initially, the primary function of the Mataram Canal was as an irrigation channel to support agriculture in Yogyakarta. Its

presence allowed farmers to no longer rely solely on rainfall, significantly increasing agricultural yields. However, over time, the canal's function expanded, serving as a water source for domestic needs such as bathing, washing, and even hydroelectric power generation (Hastutiningrum, 2020). Furthermore, as the city developed, the function of the Mataram Canal transformed. From its original purpose as an irrigation channel, it is now also utilized for various economic activities, including fisheries and tourism. Despite its long and rich history and its potential as a natural attraction, the canal has not been fully optimized for tourism purposes. The landscape of the Mataram Canal is considered quite scenic, but several areas require significant improvements. Water quality assessments indicate that the canal does not meet standard quality levels, possibly due to sampling being conducted during the rainy season (Kusumawati, 2019).

Land-use changes and spatial utilization patterns along the Mataram Canal have also influenced its visual identity and the experience of space for its users. The transformation of land use along the canal has led to the development of commercial activities that significantly impact the growth of suburban areas (Irawati, 2015). Economic activities have expanded not only formally but also informally, with the emergence of street vendors, parking facilities, and other businesses. Several factors influencing spatial development in the study area include accessibility, the growth of residential functions, the

expansion of higher education facilities, land prices/rents, local lifestyle trends, and land-use regulations (Hadiyanti, 2016).

In the context of culture and visual identity, the Mataram Canal is no longer just a physical infrastructure with historical significance; it has also become a part of Yogyakarta's cultural identity. Its historical and functional values reflect the cultural identity and spatial planning of Javanese urban architecture. According to Rahmi and Setiawan (2021), the Mataram Canal represents an essential "cultural landscape" for Yogyakarta, meeting the criteria for potential designation as a cultural heritage site. However, as a significant cultural landscape, the canal and its surroundings are threatened by rapid urban development, which local governments have not yet fully managed or controlled. One of the key identities associated with the canal is its designation as a "Monument of the Throne for the People," symbolizing a government that prioritizes the welfare of its people.

This study aims to assess the physical and visual characteristics of the Mataram Canal today to determine whether it still represents this identity. The analysis and discussion will focus on identifying the typology (physical form) and morphology (structural development) of the Mataram Canal in relation to its philosophical values. The study will examine the physical condition, functional role, and the extent to which its historical significance is still perceived by the public.

Method

This research employs a qualitative descriptive method by comparing the initial function and physical condition of the Mataram Canal when it was first constructed. The current condition is then examined through a typo-morphological study of spatial and visual structures to assess the extent of the transformations that have occurred. The identified findings serve as a basis for justifying the extent to which its identity and characteristics still represent the "Monument of the Throne for the People" and can provide fundamental considerations for addressing its current physical condition and ensuring its functional sustainability.

The typo-morphological approach is also aimed at studying the physical transformations of the Mataram Canal over time, from the colonial era to the present, in relation to its status as a monument. The research is conducted through field surveys and visual documentation. The field survey is intended to collect an inventory of the physical condition of the Mataram Canal, including materials, ornaments, water flow patterns, and structural forms. Additionally, to support a more comprehensive analysis and discussion, a literature study is conducted to explore the historical significance of the Mataram Canal.

Primary literary sources are obtained through archival studies and historical documentation regarding the initial condition and development of the Mataram Canal. This is further supported by secondary literature sources on the cosmological values of the canal based

on its function and visual characteristics. To reinforce perceptions of the historical value reflected in its functional and visual characteristics as part of the Mataram Canal's identity, interviews with key informants are conducted to reveal cultural perceptions and symbolic meanings.

Result and Discussion

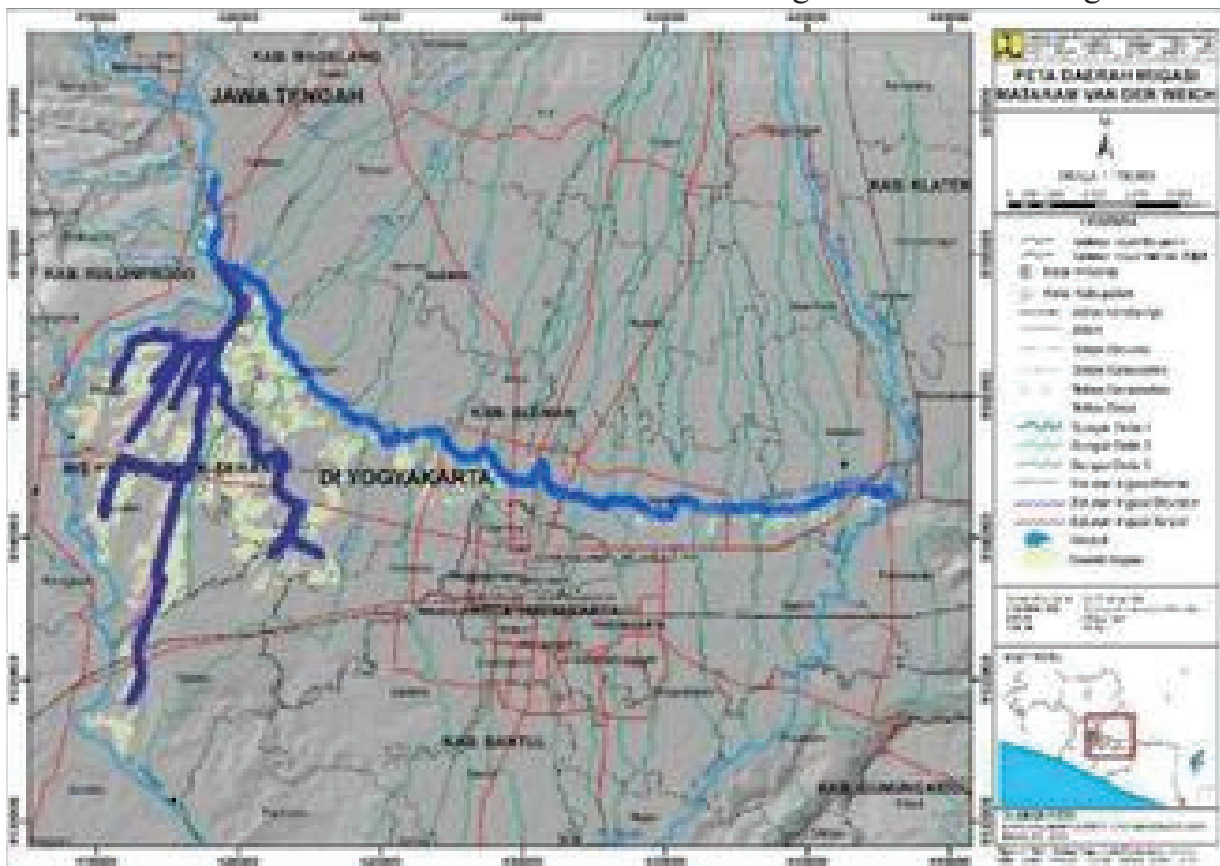


Fig.1. Map of the Mataram and Van der Weich Irrigation Areas. Source: National Archives of the Republic of Indonesia (<https://mowid.anri.go.id/index.php/peta-daerah-irigasi-mataram-dan-van-der-weich-1>) accessed on Friday, 21 March 2025

Yogyakarta, as a Special Region with autonomous status, is inseparable from its urban physical components that hold historical value, which have now transformed into landmarks or markers. These landmarks not only signify the passage of time and changes but also serve as evidence of the historical

background that shapes the city's identity, both physically and non-physically. The Mataram Canal is one of Yogyakarta's urban landmarks (Hadiyanti & Wibisono, 2012).

In accordance with its intended purpose, the use of the Mataram Canal remains primarily limited to irrigation for the rice fields along its route. The canal originates from the Progo River at

the Karang Talun Dam, located in Ancol Hamlet, Bligo Village, Ngluwar District, Magelang Regency. It then divides into two streams: the Van Der Wijck Channel, which irrigates rice fields and plantations in the Moyudan area and continues southward, and the Mataram Canal, which flows into Yogyakarta City before

emptying into the Opak River in Klaten Regency (Kusumawati, et al., 2019).

In the context of urban architecture, visual identity serves as a backdrop for cultural narratives, influencing both perception and public identity (Palleiro-Sánchez, 2024). A visual identity formed through historical components should provide both direct and indirect historical narratives, ultimately defining its role as a visual identity. According to Mohamed et al. (2017), when applied to conservation practices, the typo-morphological approach can create coherence in urban structures by emphasizing three characteristics: the physical manifestation of type clarity, socio-cultural references derived from historical ideas and values, and the transformation of types to align with specific physical and cultural contexts.

Typomorphology combines typology (focusing on spatial and syntactic analysis) with morphology (emphasizing

of the Mataram Canal by analyzing the changes that have occurred and their influence on its visual identity. This analysis aims to create a systematic classification of architectural forms, as reflected in expanded spatial components, which can be used to propose adjustments to buildings or urban physical spaces (Çalışkan et al., 2022). The findings from this identification process can serve as a reference for future management and planning of the Mataram Canal. In an urban context, typomorphology helps in understanding the dynamics of urban architecture, as seen in studies on cities addressing crises in urban settings (Chen, 2022). The spatial and partial dynamics or a comprehensive analysis of these transformations are expected to highlight the issues or crises affecting the Mataram Canal.

Based on its typology, the physical characteristics of the Selokan Mataram



Fig.2. Left: Excavation work for the Walet drainage channel, Phase II of the Mataram Canal rainwater drainage excavation. Right: Phase I construction of the tertiary Mataram Canal, quarter-channel system. Source: National Archives of the Republic of Indonesia (<https://mowid.anri.go.id/index.php/fdpa-028-1-2>) accessed on Friday, 21 March 2025.

form analysis) (Ali & Mustafa, 2023). In this study, typomorphology is used to identify the spatial conditions and forms

structure initially consisted of foundation structures using the *umpak* (stone base) system, similar to the foundation of

ancient Javanese buildings. The materials used were andesite stone combined with cement, sand, and gravel to reinforce the structure. The use of local materials and traditional construction techniques demonstrates adaptation to the environment and community needs. This choice of materials reflects traditional architectural typology that integrates with the surrounding landscape, aiming to preserve aesthetic values while maintaining its practical function as a water channel. Additionally, the presence of vegetation along the canal was intended to create green open spaces that support the local ecosystem. The optimization of informal green open spaces (RTH) along the Selokan Mataram as public green spaces is influenced by private RTH ownership, accessibility levels, population characteristics, land legality, and vegetation types (Utami, et al., 2020). In terms of its physical infrastructure, Selokan Mataram represents a collective effort to address the challenges of different eras.

Based on its form and infrastructure typology, Selokan Mataram can be categorized into three types:

- A form characterized by a more orderly building layout, parallel to the Selokan Mataram, dominated by residential functions and supporting facilities such as housing and educational buildings.
- An irregular form with mixed land use, including commercial, residential, and informal economic sectors.
- River zone or river body area, marked by bridges and a combination of soft-hard materials.

The original materials of Selokan Mataram have undergone significant transformation and modification, with concrete walls replacing traditional materials to meet contemporary needs and adapt to changes in the surrounding physical space. This modification aims to increase structural resilience against pressure and anticipate soil-bearing capacity shifts. Some historical bridges



Fig.3. Physical Space and Environmental Transformation at the Headwaters of Selokan Mataram. Source: elaborated by author, from google street views (2024)

still remain at certain points.

Urbanization and transformation have reduced open spaces, replacing them with commercial functions and residential areas. Additionally, the growth of buildings and informal economic activities along Selokan Mataram has blurred its historical value. The visual characteristics have also changed significantly, as modern architectural styles have emerged, creating visual and landscape disharmony.



Fig.4. Map of Selokan Mataram (Gunsei Yo Haisuiro) from Karangtalun Water Gate to Ngaglik Area. Source: National Archives of the Republic of Indonesia (<https://mowid.anri.go.id/index.php/hb-ix-kra-1771-00-2>) accessed on Friday, 21 March 2025.

The Morphological Study of Selokan Mataram is examined along approximately 31.2 km, connecting the Progo River and

the Opak River. Initially, this canal was not only an irrigation infrastructure but also a symbol of cultural resistance and “Tahta untuk Rakyat” (Throne for the People), a leadership philosophy that places the people at the center of power. Based on the morphological structure of urban space functions, Selokan Mataram can be classified into three periods:

- Japanese Occupation Period (1944)
 - During this time, its function was solely as an irrigation canal, with an additional purpose of keeping the local workforce (the people of Yogyakarta) employed in their own region rather than being sent to other areas.
- Post-Independence Period (1945–1990s) – This era saw an increase in the agricultural sector, with the canal continuing to play a vital role in irrigating 15,734 hectares of farmland. During this period, Selokan Mataram was crucial in supporting food security and improving the economic welfare of the community. It also became an integral part of social life, serving various purposes, including fisheries.
- Modern Era (1990s–Present) – With rapid urbanization, Selokan Mataram has undergone significant changes, with the development of educational institutions, residential areas, commercial hubs, and other infrastructure. This has stimulated economic activities along the canal, leading to the establishment of shops, kiosks, and retail businesses.

The presence of universities has also triggered a major land-use transformation, with around 90% of the surrounding land converted into built-up areas (Hermawan et al., 2017), including parts of Selokan Mataram.

These morphological changes have had both positive and negative impacts.

- Positive Impacts: Economic opportunities have emerged for local communities, and public services have become more accessible along Selokan Mataram.
- Negative Impacts: The conversion of agricultural land has led to a decrease in farming areas, while domestic waste pollution has increased along the canal.

educational, and economic aspects. Land use plays a crucial role in environmental sustainability, heavily influenced by human activities, regional development directions, and government policies or regulations in each area (Utami et al., 2024). These changes reflect Yogyakarta's growing urban complexity, posing challenges in maintaining the sustainability of Selokan Mataram as an irrigation canal in the future.

Selokan Mataram, as a historical infrastructure in Yogyakarta, has undergone significant transformations in both typological form and urban spatial morphology. This transformation not only reflects the shift in function from an irrigation channel to a multifunctional area but also highlights the challenges

SITE 2015



SITE 2023



Fig.5. The spatial morphology and land use around Selokan Mataram near West Lake Resto have undergone changes, with the addition of commercial spaces.. Source: elaborated by author, from google earth (2024)

Selokan Mataram has undergone a significant spatial transformation from a purely irrigation channel to a multifunctional area incorporating social,

it faces in the future, particularly with the planned construction of a toll road over a section of Selokan Mataram. The discussion regarding these transformations is presented in the following table.

Table 1: Transformation of Typological Forms and Spatial Morphology of Selokan Mataram

Transformasi Tipologi Bentuk	Morfologi Ruang Kota
The physical aspect of Selokan Mataram was initially built as a linear irrigation channel, flowing from the northwest to the southeast. Over time, its physical form has been modified with the addition of concrete structures in several segments to increase water capacity and reduce sedimentation.	The development of zoning and land use around Selokan Mataram varies. In some areas, buildings are well-organized with good accessibility, while in others, diverse land use patterns create architectural diversity. Additionally, some sections serve as bridges and accessibility points, becoming integral aesthetic elements of the space.
The transformation of its primary function as an irrigation channel has evolved to include a public space function. Along the canal, various commercial, educational, and residential activities, including the informal economy sector, have emerged. This shift indicates a typological transition from a purely functional infrastructure to a dynamic social space.	The development of zoning and land use around Selokan Mataram varies. In some areas, buildings are well-organized with good accessibility, while in others, diverse land use patterns create architectural diversity. Additionally, some sections serve as bridges and accessibility points, becoming integral aesthetic elements of the space.

Based on these conditions, the visual identity of Selokan Mataram as the “Monument of the Throne for the People” remains evident. Despite undergoing numerous changes over time, in terms of spatial utilization and the physical form of Selokan Mataram itself, its historical value and remaining visual identity continue to uphold its function as an irrigation infrastructure while symbolizing the struggle and leadership that prioritizes the people. Unique buildings and landmarks serve as visual anchors that distinguish the city from others. For instance, architectural styles in Southeast Asian cities significantly contribute to efforts in preserving their urban identity (Mohamad et al., 2022). Although transformations have taken place, the essence of its function can still be perceived through other forms of spatial utilization, such as the growth of economic and social sectors that contribute to public welfare.

The visual identity elements of its form and structure still stretch across 31.2 km, connecting the Progo and Opak Rivers. The canal structure remains between 2 to over 6 meters wide, maintaining its strong physical identity despite modifications aimed at strengthening infrastructure resilience. Other infrastructures in certain sections include bridges, which still visibly reflect historical elements. Based on its aesthetic values, this atmosphere continues to embody local culture. Another example is seen in the upstream section of Selokan Mataram, where the dam’s stepped design enhances both its visual appeal and functionality.

Changes in environmental functions due to urbanization have altered many aspects, although its visual identity remains palpable. The increasing presence of residential, educational, and commercial functions along Selokan Mataram’s banks influences its transformation, and if not properly anticipated, it may erode its

historical significance. The conversion of agricultural land into residential and industrial areas has reduced the connection between the canal and the farming communities that once relied on it.

Another challenge faced by Selokan Mataram is the planned construction of a toll road above a section of the canal. This development could disrupt water flow, damage the existing irrigation infrastructure, and alter public perception of its use. Additionally, pollution risks from commercial areas could affect the water quality of the canal, impacting its primary function as an irrigation channel. Other potential risks include increased flooding if the canal is covered, as well as changes in social interaction patterns along the canal banks. These impacts would not only affect environmental conditions but also the vitality of the local economy, which has flourished around Selokan Mataram.

Conclusion

Selokan Mataram, originally built as an irrigation canal during the Japanese occupation, has transformed into a historical symbol and cultural identity for the people of Yogyakarta. Today, the canal not only serves as vital infrastructure for the agricultural sector but also reflects the leadership philosophy of Sri Sultan Hamengkubuwono IX, who prioritized the welfare of the people. While the historical value and visual identity of Selokan Mataram as the “Monument of the Throne for the People” remain visible, challenges arising from urbanization—such as land

use changes and modifications to its physical structure—must be anticipated. Therefore, it is crucial to implement preservation efforts to ensure that Selokan Mataram remains relevant as a cultural heritage and a source of livelihood for the community.

The following recommendations can be considered to support these efforts:

- **Physical Preservation:** Restoring key parts of Selokan Mataram by using appropriate local materials, such as andesite stone, to maintain its local architectural value. Additionally, a buffer zone around the canal can be developed by planting vegetation to reduce erosion and pollution.
- **Environmental Management:** Implementing effective waste management along the banks of Selokan Mataram to maintain water quality and prevent pollution. This can be achieved by involving the community in water quality monitoring programs and periodic canal cleaning initiatives.
- **Integrated Development Planning:** Ensuring that infrastructure developments, such as toll roads and other constructions, are planned through comprehensive studies to minimize impacts on the canal’s function, bridges, and water tunnels.
- **Community Education and Participation:** Raising awareness among the public about the importance of Selokan Mataram as a cultural heritage and its role in

daily life. Encouraging community involvement in preservation activities, such as canal clean-up events and cultural programs that utilize the physical space around Selokan Mataram.

- Cultural Heritage Promotion: Establishing heritage tourism programs that highlight the history and cultural significance of Selokan Mataram, including its role as the “Monument of the Throne for the People,” to increase awareness and appreciation of its historical legacy. Additionally, providing accessible information through social media and local exhibitions about the history of Selokan Mataram and its impact on the lives of Yogyakarta’s residents.

Through these measures, Selokan Mataram can continue to function as an effective irrigation canal while maintaining its role as a strong cultural identity symbol for the people of Yogyakarta.

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IMPACT OF URBAN DEVELOPMENT ON THE SIGNIFICANCE OF WORLD HERITAGE ITEMS: CASE STUDY OF MALIOBORO STREET

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Abstract

Malioboro Street, an integral part of Yogyakarta's cosmological axis, has long been a cultural and commercial center. However, rapid urbanization, tourism, and commercialization have reshaped the area, threatening its cultural identity and the displacement of traditional elements. This study applies to UNESCO's Historic Urban Landscape using secondary data, including planning documents, heritage regulations, and urban morphology studies to assess the impacts. The findings indicate that tourism-focused development has favored economic interests over cultural preservation, displacing traditional artisans and transforming the historic streetscape. Despite the existence of a regulatory framework designed to protect Yogyakarta's cultural heritage, inconsistent enforcement has allowed commercial development to take precedence over conservation efforts. The study recommends integrating heritage-sensitive planning policies, strengthening regulatory oversight, and promoting adaptive reuse strategies to balance development with conservation. By addressing the tensions between urbanization and heritage management, this research offers pathways to sustain Malioboro's role as both a cultural landmark and an economic hub, ensuring its significance for future generations.

Keywords

Urbanism, Heritage Conservation, Malioboro, Yogyakarta

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Introduction

Urbanization, a global phenomenon driven by population growth, economic development, and the demand for improved infrastructure, has become a defining characteristic of the modern era. While urbanization fosters economic growth and provides better living standards, it presents significant challenges, particularly in preserving the cultural and historical identity of cities (Fu et al., 2023; Oers & Pereira Roders, 2012). While urbanization fosters economic growth, it also disrupts social and cultural structures, especially in historical areas where cultural heritage is vital to a city's identity. As Pham et al., 2021 highlight, urbanization diminishes the cultural significance of urban spaces.

The impact of urbanization on cultural heritage is evident in how it alters the integrity and value of heritage sites. Fu et al. (2023), argue that rapid urban expansion often accelerates the decline of cultural heritage, particularly in historic areas. Modern cities, particularly those experiencing rapid economic growth, often prioritize urban development over heritage conservation. The rise of high-density developments and commercial expansion contributes to this deterioration. Protecting World Heritage Sites amid urbanization is vital, as they embody shared history and cultural memory. These pressures not only cause physical damage but also reduce cultural and spiritual significance, often turning heritage sites into mere tourist attractions (Pham et al., 2021).

Given the widespread nature of these challenges, this study seeks to answer the question of how urban development, particularly commercialization and mass tourism, affect the significance of heritage sites. In addressing this question, the study will specifically focus on Malioboro Street in Yogyakarta, Indonesia, applying UNESCO's Historic Urban Landscape (HUL) framework to understand the pressures exerted by urbanization and propose effective conservation strategies. The HUL framework emphasizes the need for integrating heritage conservation with urban planning by considering both tangible and intangible heritage, ensuring that development does not undermine the cultural and historical integrity of heritage sites. The aim is to analyze how modern urbanization, characterized by commercialization and tourism, impacts the integrity of heritage sites, and to evaluate the role of heritage conservation frameworks in mitigating these effects.

By focusing on Malioboro, this study offers insights into the broader challenges faced by historic urban spaces globally. It will examine the forces of modernization and commercialization, assessing their impact on local traditions and the preservation of cultural identity. Through the lens of the HUL framework, this paper will contribute to a deeper understanding of how urbanization can be managed in a way that respects and preserves the cultural heritage of cities, ensuring that development does not come at the cost of cultural authenticity and historical significance.

Method

Purpose and Data Source

The primary purpose of this study was to assess how urbanization, particularly in the form of commercialization and tourism, affects the cultural and architectural integrity of Malioboro Street, a significant heritage site in Yogyakarta. To achieve this, the research relied on several key data sources that provided insights into regulatory frameworks, historical context, community involvement, and urban planning developments.

This research adopted a qualitative methodology, grounded in a detailed literature review and supported by content and descriptive analyses. Key data sources included government documents such as the Cultural Heritage Preservation Bulletin and Spatial Planning Regulation (RDTR-RTRW), which offered regulatory perspectives on heritage management. These documents provided a comprehensive view of the legal framework governing the preservation of cultural heritage sites, including Malioboro. Additionally, publications on heritage conservation, specifically those relevant to Yogyakarta and broader conservation efforts in Indonesia, were instrumental in informing the study's contextual understanding.

The research also incorporated academic and statistical data, including studies of urban planning and tourism impacts. To further understand the historical and developmental shifts within Malioboro, the research drew on supplementary materials such as archival imagery, urban planning documents,

and tourism statistics. These resources highlighted the precinct's evolution over time, enabling a more detailed analysis of the urban and tourism-driven transformation.

Methods and Analytical Framework

The study utilized content and descriptive analysis to identify and explore key themes regarding the degradation of Malioboro's heritage. This involved examining how urbanization has impacted both the physical structures, and the intangible cultural values associated with the site. The analysis focused on the erosion of local traditions, the rise of commercialization, and the shifting community dynamics in response to these developments.

A central aspect of the study's analytical framework was the integration of UNESCO's Historic Urban Landscape (HUL) approach. The HUL framework was used as a lens to explore the holistic management of heritage sites amid rapid urbanization. Introduced by UNESCO in 2011, the HUL framework advocates for the integration of heritage conservation into urban planning, encouraging a broader understanding of urban heritage as a dynamic and multi-dimensional system. It emphasizes the importance of preserving both tangible and intangible heritage elements, such as cultural practices, spatial organization, and community values, while managing urban development pressures (UNESCO, 2011a).

This approach provided a theoretical foundation for understanding how the

various components of Malioboro, including its physical architecture, community life, and spiritual significance, could be managed in balance with the growing demands of tourism and commercialization. The HUL framework's focus on community engagement was particularly relevant in this research, as it emphasized the need for local involvement in decision-making processes related to heritage preservation. This aspect of the analysis draws exclusively on secondary data sources, particularly interview-based studies. No primary fieldwork or direct interviews were conducted as part of this research; instead, existing qualitative studies such as those by Cahya et al. (2017) and Widyastuti (2020) were referenced to incorporate community perspectives.

Results and Discussions

Site Context: Malioboro Street

Malioboro Street, located in the heart of Yogyakarta, Indonesia, holds profound cultural, historical, and cosmological significance. It is an iconic thoroughfare that not only serves as a commercial and tourism hub but also occupies a central position in the city's cosmological axis. This axis, which was designed in the 18th century by Sultan Hamengkubowono I, represents a symbolic link between the spiritual and physical realms, extending from Mount Merapi to the Indian Ocean. Malioboro Street is situated along this axis, passing through key landmarks such as the *Tugu* Monument, the *Keraton* (palace), and leading toward the South Sea. The alignment of these landmarks

underscores Malioboro's deep-rooted connection to Javanese cosmology, where the street functions as a bridge between the sacred and the earthly (Agathis et al., 2021; Cahya et al., 2017).

In addition to its cosmological importance, Malioboro has long been a focal point for cultural, social, and economic activities in Yogyakarta. The street is lined with heritage buildings, many of which date back to the Dutch colonial era, reflecting a blend of European and traditional Javanese architectural styles. These buildings, alongside newer commercial developments, create a juxtaposition of the old and the new, which speaks to the street's evolving character. Historically, Malioboro has been a place where local communities engaged in daily life, including shopping, trading, and cultural practices. Over time, however, as the street has become a popular destination for both domestic and international tourists, the dynamics have shifted, with increasing commercialization and tourism-driven development reshaping its identity (Ayudya et al., 2024; Dinas Kebudayaan DIY, 2016).

Malioboro's strategic location as a major thoroughfare in Yogyakarta's urban fabric, along with its cosmological and cultural significance, makes it a crucial site for heritage conservation. While the street remains a vital symbol of Yogyakarta's cultural identity, the challenges posed by rapid urban development and the increasing commodification of heritage are evident in the ongoing transformation of the precinct (Siregar, 2019; Widyastuti, 2020). This case study of Malioboro Street

reflects the broader challenges faced by heritage sites in rapidly urbanising cities, where the intersection of development, tourism, and heritage conservation demands a delicate balancing act.

Morphological Evolution of Malioboro Street

Malioboro Street has undergone substantial morphological changes, particularly in the way its urban layout has evolved from a traditional community space to a more commercially oriented area driven by tourism. The transformation is evident in the shift of zoning patterns, the redesign of urban spaces to accommodate tourism, and the alterations to the visual and architectural identity of the street (Yulisaksono et al., 2023).

Historically, Malioboro served as a cultural and social hub for local communities. However, over the years, the zoning of the area has gradually shifted towards accommodating the needs of tourists, with commercial spaces overtaking traditional community functions. The zoning maps of the area reveal a transformation from spaces designed for daily local interactions to areas geared towards retail, dining, and cultural exhibitions tailored for tourists (Yulisaksono et al., 2023). The zoning changes reflect a significant transformation of Malioboro into an urban tourism space, where shopping, dining, and cultural experiences are segmented along the cosmological axis that runs through the heart of Yogyakarta. According to the HUL framework, such transformations should be approached with sensitivity to the balance between preserving the

cultural landscape and accommodating contemporary needs (UNESCO, 2011a). This is particularly relevant as Malioboro has evolved from being a mixed-use space serving both locals and tourists to a commercialized landscape prioritizing the needs of visitors. The tourism-driven design of Malioboro has resulted in a reconfiguration that supports economic growth at the cost of the area's cultural integrity (Ayudya et al., 2024).

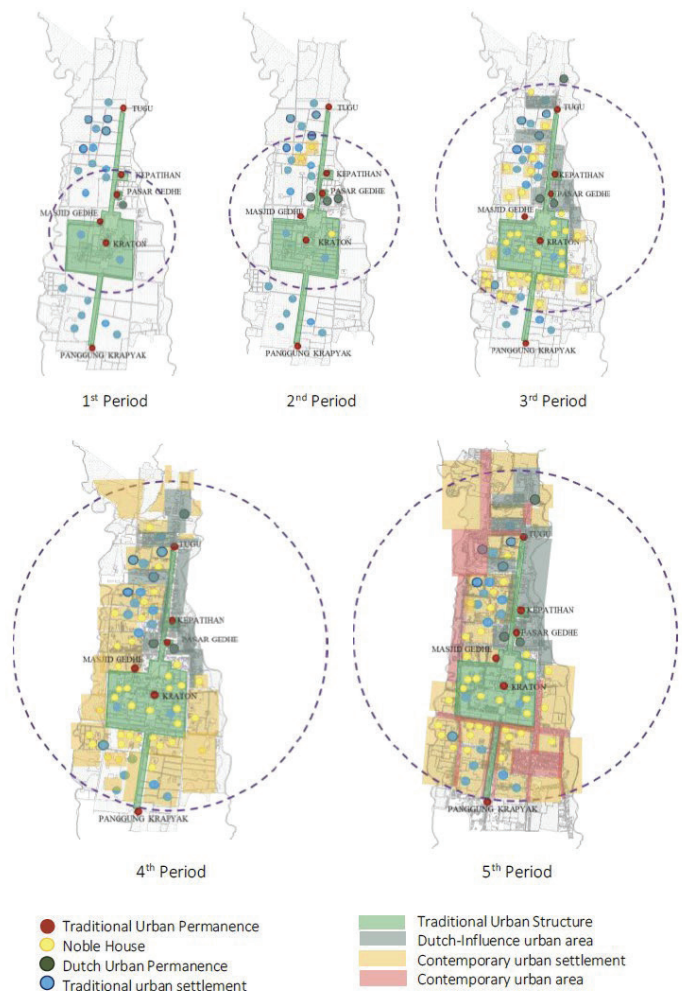


Fig.1. Morphogenesis of Malioboro Precinct overtime (Yulisaksono et al., 2023)

Figure 1 illustrates five distinct historical stages that have influenced the urban form of Malioboro, transitioning from a predominantly traditional layout

to a more modern urban structure. The evolution map reveals how Malioboro has consistently transformed in response to prevailing cultural and political forces of each period. In recent decades, however, the area has increasingly adopted a tourism-oriented zoning pattern, allocating more space to commercial activities than to its original traditional communal areas.

integrity, particularly when urban areas undergo significant transformations (UNESCO, 2011a). The typomorphological studies conducted by Ayudya et al. (2024) and Septirina et al. (2016), highlight the reorganization of space to cater to tourism, which has led to the marginalization of traditional vendors and artisans. Many of these traditional spaces have been displaced, and the street

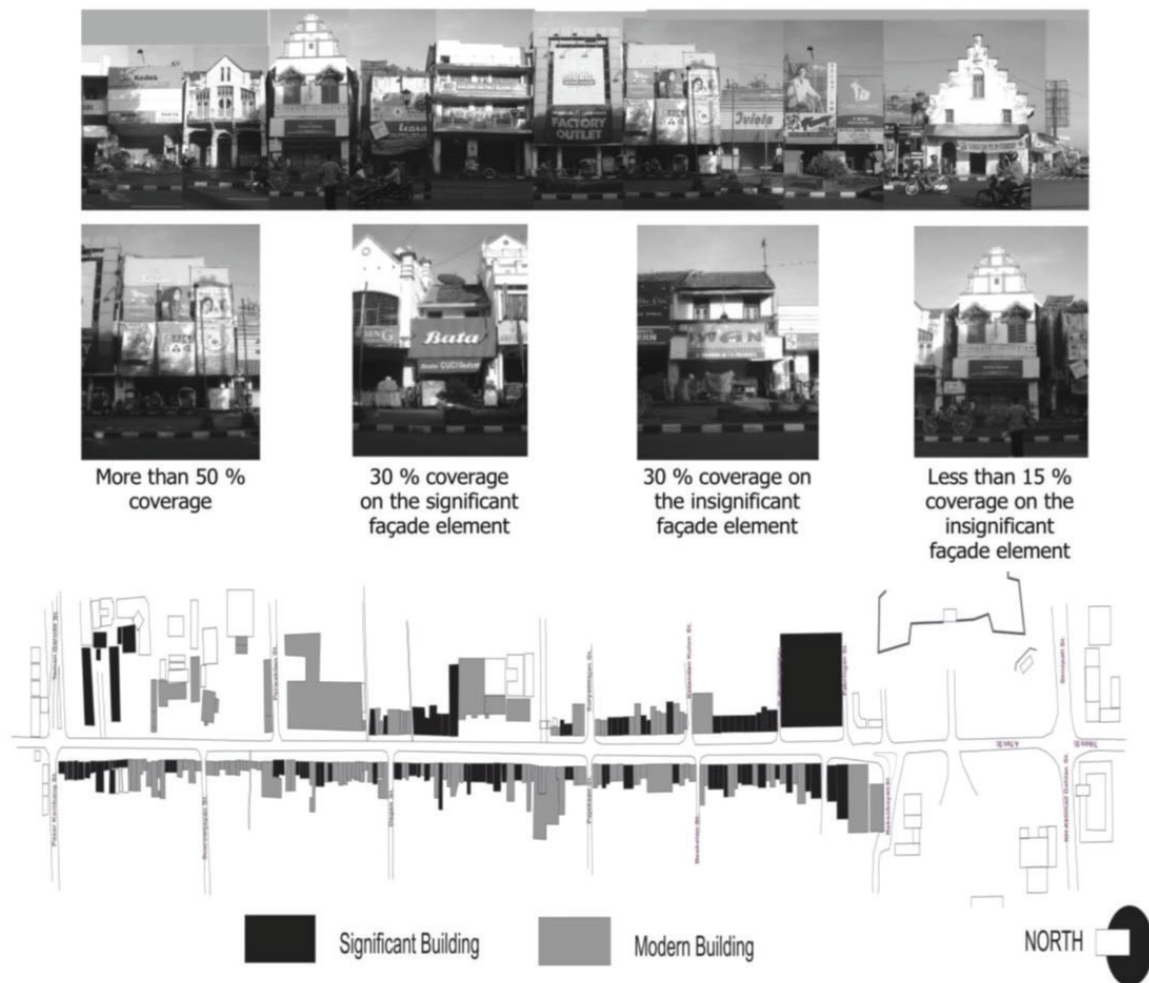


Fig.2. Building facades transformation along Malioboro (Widyastuti, 2020)

Further analysis reveals changes in spatial organization and architectural facades along Malioboro. The HUL framework stresses the importance of maintaining visual and architectural

now caters primarily to market-driven functions. This is most noticeable in the alteration of building facades, with modern signage and advertisements obscuring the historical architectural elements of

the street. Reports show that by 2019, only 50% of the historically significant buildings retained their original facades, while the rest were modified to attract customers, contributing to a visual clutter that detracts from the area's historical charm (Widyastuti, 2020).

3.3 Community Perceptions and Involvement

One of the most significant findings from this study is the perceived disconnect between the local community and the

Interviews conducted by Cahya et al. (2017) reveal that many locals feel that Malioboro, once a space of cultural exchange and social interaction, has increasingly become a commercialized environment catering to tourists. This disconnect highlights the importance of incorporating community engagement in the heritage conservation process, as outlined by the HUL framework (UNESCO, 2011a). The HUL approach stresses that successful urban heritage management requires the active

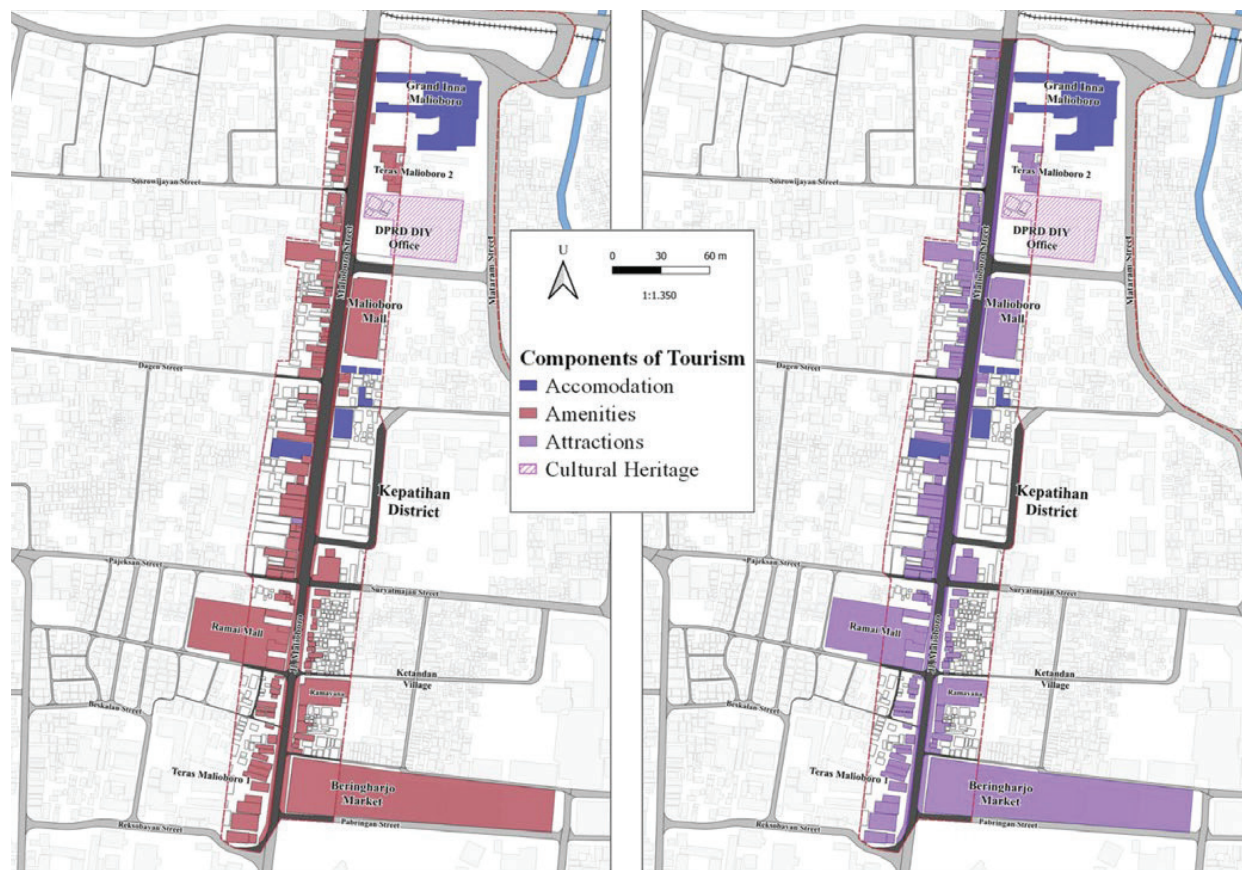


Fig.3. Tourism components on Malioboro Street (Ayudya et al., 2024)

changes occurring in Malioboro. Local residents and traditional vendors have expressed concerns that the increasing commercialization of the area is eroding its cultural and spiritual significance.

participation of local communities, whose values, needs, and aspirations must be central to conservation efforts.

The impact of commercialization is particularly evident among traditional

vendors and artisans, who are increasingly being pushed out by larger tourism-oriented businesses. Cahya et al. (2017) and Widyastuti (2020) note that many traditional stalls have been displaced, leading to a reduction in the street's cultural vibrancy. *Figure 3* shows how the street has become dominated by tourism-related infrastructure, such as hotels and other visitor amenities. These changes not only threaten the livelihoods of local traders but also dilute the cultural fabric that has been embedded in Malioboro for generations.

3.4 Regulatory Framework and Conservation Efforts

Yogyakarta has implemented several national and local regulations aimed at preserving its cultural heritage, including Indonesia's Law No. 11 of 2010 on Cultural Heritage and the Special Region of Yogyakarta's PERDA DIY No. 3 of 2017. These regulations establish guidelines for the preservation of both tangible and intangible cultural heritage, aiming to balance urban development with heritage conservation. This aligns with the HUL framework that emphasizes the need for integrating heritage conservation strategies into broader urban development policies (UNESCO, 2011a).

However, the effectiveness of these regulations has been undermined by inconsistent enforcement. As Widyastuti (2020) and Guzman et al. (2018) observe, economic pressures from tourism and commercialisation often take precedence over conservation efforts, leading to a gap between regulatory intentions and actual practices. Despite the existence

of policies to control commercialization, such as restrictions on signage, the continuous proliferation of modern shopfronts and advertisements along Malioboro has contributed to the loss of the street's architectural integrity. This reflects a broader issue in many heritage cities, where economic growth frequently overrides the preservation of cultural and historical sites (Gustafsson & Ripp, 2022).

Inconsistencies in enforcement have been particularly evident in the commercialization of building facades and the alteration of the street's visual identity (*Figure 2*). The failure to adequately regulate these changes has resulted in a diminishing of Malioboro's historical aesthetic, which undermines both its architectural and cultural significance. To mitigate these issues, stronger enforcement of heritage zoning laws and the implementation of incentives for heritage-compliant businesses are crucial for ensuring that development does not come at the expense of cultural preservation (UNESCO, 2011b). The need for adaptive policies can be highlighted to align more with the suggestion of HUL framework, which would allow heritage preservation to coexist with urban growth, ensuring that both are mutually beneficial (UNESCO, 2011a).

4. Conclusion and Recommendations

Conclusion

This study explored the transformation of Malioboro Street in Yogyakarta, focusing on the challenges of balancing

urban development with cultural heritage preservation. The increasing commercialisation, tourism pressures, and inconsistent regulatory enforcement have reshaped the street's character, reflecting broader global issues where economic growth often prioritizes over cultural sustainability (Fu et al., 2023; Oers & Pereira Roders, 2012).

The application of the Historic Urban Landscape (HUL) approach introduced by UNESCO provided a valuable framework for integrating cultural heritage conservation into urban development. The HUL framework emphasizes a multidimensional strategy that includes regulatory frameworks, community involvement, and adaptive policies (UNESCO, 2011a). This approach proved essential in assessing how both tangible and intangible heritage must be preserved, promoting not only the physical environment but also cultural practices and community values.

Findings reveal that commercialisation, marked by modern storefronts and advertisements, has eroded Malioboro's architectural integrity and cultural significance. Approximately 50% of its historically significant buildings retain original facades, while others have been altered to cater to commercial interests (Widyastuti, 2020), undermining its alignment with the broader Yogyakarta cosmological axis and diminishing its cultural role (Agathis et al., 2021).

The study addressed the question of how to better integrate heritage conservation into urban development, emphasizing

the need for community engagement in heritage-sensitive planning. The lack of involvement from local residents and vendors has created a disconnect between the community and decisions that shape their environment (Cahya et al., 2017; Guzman et al., 2018). The HUL framework advocates for the inclusion of local voices to foster a balance between tourism and cultural preservation, contributing to more sustainable urban development (Ayudya et al., 2024; UNESCO, 2011a).

Finally, the study calls for stronger enforcement of heritage preservation laws like Indonesia's Cultural Heritage Law No. 11 of 2010 and Yogyakarta's PERDA No. 3 of 2017. Despite these frameworks, economic pressures often outweigh conservation goals, highlighting the need for consistent enforcement and incentives for heritage-aligned businesses (Guzman et al., 2018). Integrating these measures with HUL principles will help ensure a sustainable urban future for Malioboro.

Recommendations

To ensure the sustainable development of Malioboro while preserving its unique cultural and historical identity, it is essential to adopt a more inclusive and adaptive approach to urban planning. Key recommendations include:

1. **Enhanced Community Engagement:** Incorporating local communities into decision-making processes is critical to maintaining the cultural vibrancy of Malioboro. Their values, needs, and aspirations should be central to any conservation efforts, as emphasized by the HUL framework.

2. **Stronger Regulatory Enforcement:**
The enforcement of heritage protection regulations must be more consistent and robust. Local authorities should prioritize the preservation of architectural integrity and cultural practices while managing modern development pressures.
3. **Integration of HUL Principles:**
Urban development policies should integrate the HUL framework, ensuring that heritage conservation is not treated in isolation but is part of a broader sustainable development strategy. This approach would allow Malioboro to retain its cultural significance while adapting to contemporary needs.
4. **Adaptive Heritage Management:**
The management of Malioboro's heritage should be dynamic and responsive to the evolving urban environment. Policies should encourage the integration of tourism and commercial activities that respect the street's cultural identity, offering benefits to both locals and visitors.

By adopting these strategies, Malioboro can maintain its historical essence while thriving in the context of modern urban growth, tourism, and economic development.

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RETHINKING GOTONG-ROYONG IN URBAN KAMPUNGS: BETWEEN PARTICIPATION AND NEOLIBERAL CO-OPTATION

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Abstract

Urban kampung transformations into tourist destinations in Indonesia often glorify *gotong-royong* as their driver and claim to represent participatory urban development. This study examines how *gotong-royong* operates amidst neoliberal urbanization by comparing two kampungs, in two different cities, that in the last decade transformed themselves into tourist destinations, namely Kampung Lawas Maspati in Surabaya and Kampung Warna-Warni Jodipan in Malang. The findings reveal that *gotong-royong* functions flexibly as a form of social solidarity, a tool for collective organizing, and a mechanism for spatial production. Meanwhile, *gotong-royong* helps the socio-economic resilience of urban kampung residents, the results and sustainability of which are highly dependent on their structural conditions in the urban governance system. Maspati's secure land status allows for balanced power relations and sustainable collective action, while Jodipan's informal land status leaves it vulnerable despite receiving symbolic recognition from the state. This study argues that *gotong-royong* must be reframed beyond cultural symbolism as a collective action that requires state support (rights protection and resource redistribution) to achieve spatial justice. Without state support, its transformative potential remains limited.

Keywords

gotong-royong, urban kampung, neoliberal urbanization, spatial justice

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Introduction

The transformation of urban kampungs into tourist destinations has become a common phenomenon in Indonesia over the past decades. These initiatives are often framed as participatory development that highlights local creativity and wisdom. (Astuti et al., 2017; Komariah & Nugraha Asyahidda, 2019; Setyaningsih et al., 2024; Vitrianto, 2023; Yuliasuti & Sukmawati, 2020). A key element in this narrative is the role of *gotong-royong*.¹, a traditional value and social practice, which is believed to support the success of such transformation. (Irwandi et al., 2024; Winardi, 2020; Wiranti et al., 2019). However, behind this narrative lie complex social dynamics, particularly concerning power relations and the sustainability of collective practices within the context of neoliberal urbanization (Hampton & Jeyacheya, 2015; Rembulan et al., 2020; Sidiq et al., 2023; Suharyanto et al., 2023).

Although *gotong-royong* is often regarded as a resilient cultural asset in the development of tourism kampungs, its deployment within neoliberal urban logic can lead to contradictory outcomes. On the one hand, this communal practice enables kampung residents to collectively mobilize resources, maintain public

spaces, and build localized systems of mutual support. On the other hand, the framing of *gotong-royong* as a community obligation in community development projects often shifts the burden of providing and maintaining neighbourhood basic infrastructure onto kampung residents without adequately addressing issues of compensation, labor, or decision-making power. (Bowen, 1986; Miraftab, 2009). This phenomenon is part of a broader pattern where participatory development becomes a form of “invited participation” (Cornwall, 2008), in which community involvement is encouraged only within predefined parameters and limits community members’ ability to negotiate structural changes. In such cases, *gotong-royong* risks being instrumentalized to serve neoliberal urban development agendas rather than community well-being.

Moreover, the valorization of kampungs as creative spaces for tourism often intersects with broader urban logics that prioritize aesthetic and economic value over residents’ rights and agency. (Chuangchai, 2019). The production of urban space under capitalist conditions tends to commodify social relations and local identities and turn them into consumable experiences. (Harvey, 2008). This logic is evident in how certain kampungs are selectively showcased for their visual appeal or cultural uniqueness, while their underlying socio-economic vulnerabilities are ignored. They receive recognition for their entrepreneurial spirit, but they are excluded from institutional support. It reflects a form

¹ The Indonesian dictionary (Kamus Besar Bahasa Indonesia) defines *gotong royong* as collaborative work or mutual assistance. This concept has been a popular slogan in Indonesian politics, yet it has also faced criticism from scholars. President Prabowo emphasized the importance of *gotong royong* in his inauguration speech, saying it is a core teaching of the nation. Similarly, President Megawati named her 2001-2004 cabinet the *Gotong Royong Cabinet*. However, scholars with a deeper understanding of social institutions have approached the concept with nuance, recognizing the need for a more thorough analysis of its context, as noted by Koentjaraningrat (1961).

of symbolic inclusion that coexists with material exclusion. These contradictions underscore the need to investigate how *gotong-royong* is being shaped, reshaped, or reappropriated by urban kampung residents as they navigate the complex terrain of urban development.

This study aims to critically examine the dynamics of *gotong-royong* in two urban kampungs that have undergone transformation into tourist destinations over the past decade: Kampung Lawas Maspati in Surabaya and Kampung Warna-Warni Jodipan in Malang. These kampungs represent two distinct socio-spatial characteristics and contrasting trajectories of transformation: Maspati, with a stronger socio-spatial base, and Jodipan, with an illegal socio-spatial base. Through a case study approach, this study analyzes how *gotong-royong* practices operate in the process of urban kampung development. Ultimately, the aim is to uncover *gotong-royong* practices in the dialectical dynamics between citizen agency and power structures in the context of neoliberal urban development

Method

This study uses a qualitative approach because it allows a deeper understanding of social practices, cultural values, and dynamics of local community residents. (Creswell & Creswell, 2018). The focus of this study is the dynamics of *gotong-royong* practices and their role in transforming a kampung into a tourist destination. This study uses a case study design involving two densely populated kampungs: Kampung Lawas Maspati in

Surabaya and Kampung Warna-Warni Jodipan in Malang. These kampungs were chosen because they are located in the city center with more significant economic pressures and have developed community-based tourism for almost a decade, and have different socio-spatial characteristics, where Kampung Maspati stands on its own land, and Kampung Jodipan stands on illegal land. This study was conducted from February to May 2025. However, some data in Kampung Maspati were obtained from research conducted by members of the research team in a different research project in the previous year.

Data were collected using a combination of interviews, observations, and document analysis. Interviews were conducted with informants who were deliberately selected to represent community leaders, women, and kampung residents. The interview method provides flexibility in exploring participants' personal experiences, perspectives, and motivations related to mutual cooperation. Observations were conducted to directly see *gotong-royong* practices in the community, such as attending community meetings and other social activities. Document analysis was conducted to review community publications and related government reports. Data validity was carried out by triangulating sources from different informants and from secondary sources, such as research reports, media news, and photographs that could show evidence of mutual cooperation practices before the tourism kampung initiative was implemented.

The collected data were analyzed using a thematic analysis approach. The coding process was carried out using an abductive approach, namely, the researcher was open to new insights while still adhering to the initial analytical framework. All interview transcripts, observation notes, and document data were coded and arranged into main themes that emerged during the study. Recurring patterns related to how gotong-royong practices occurred and the challenges faced in maintaining these practices were identified to explain how gotong-royong contributed to the socio-economic resilience of kampung residents. A comparative analysis between the two kampungs was also conducted to highlight the similarities and differences in gotong-royong practices in the two locations.

Results and Discussion

Socio-Spatial of ‘Kampung Lawas Maspati’ and ‘Kampung Warna-Warni Jodipan’

Kampung Lawas Maspati is located in the center of Surabaya City, only 250 meters from the Heroes Monument. Although located in the city center, this kampung is hidden in a narrow alley on the side of the main road of Bubutan. Kampung Maspati is an old kampung that has existed since the colonial era, and its land status is based on ownership, with formal certificates in the form of a Certificate of Ownership (SHM) and Petok D. Administratively, this kampung is located in community association (Rukun Warga/RW) 6 and consists of

five neighbourhood associations (Rukun Tetangga/RT). Its area is around 2.5 hectares, with a population of 245 families. Its social composition is dominated by indigenous people who have lived there for generations. Most heads of families have completed high school education. Male heads of families work in the formal and informal sectors, such as civil servants, factory workers, and the informal sector, such as street vendors, drivers, shopkeepers, or market workers. Women generally work as housewives. This kampung has social institutions such as a women’s group (PKK), a religious study group (Yasinan Group), and an integrated health post (Posyandu).

Meanwhile, Jodipan Kampung is located in the center of Malang City, about 800 meters from Alun- Alun Tugu (City Park) and 500 meters from Malang City Station. This kampung is located along the banks of the Brantas River and has been densely populated since the 1980s. The land status in this kampung is state-owned (the irrigation land). Residents occupy the land without formal ownership rights, although they still pay Land and Building Tax (PBB). Administratively, this kampung is part of RW 2 and includes three RTs (RT 6, 7, and 9). Its area is about 1 hectare. Most heads of families have a junior high school education background. The majority of men work in the informal sector, such as street vendors, construction workers, drivers, parking attendants, or pedicab drivers. Social institutions in this kampung include PKK (women’s group), Fatayat/Muslimat (Islamic women’s

organization), and the integrated health post (Posyandu)

The Initiative of ‘Kampung Lawas Maspati’ and ‘Kampung Warna-Warni Jodipan’ Tourism

The birth of Maspati and Jodipan tourism kampungs involved internal and external kampung actors. However, the initiative for their birth was different. The birth of Lawas Maspati Kampung as a tourism kampung began with the internal awareness of the community itself. This initiative emerged after the kampung won the “Green and Clean” competition in 2013, which fostered the confidence of the residents, especially the RW and RT heads, that they had the collective power to bring about change. Sabar, the RW head, explained: *“We have won the green and clean competition, but after winning, what else? The kampung residents need more than just awards. We need income. We want to attract visitors to our kampung and generate economic activities for our residents.”* This awareness marked a turning point that motivated community leaders in Maspati to channel their gotong-royong to generate economic impact, not just the green and clean contest driven by the City government.

Later, in collaboration with urban art communities, cultural heritage activists, and students, Maspati held the “Kampung Lawas Festival” in 2015. The festival featured cultural performances and a traditional culinary bazaar and successfully attracted many visitors to Maspati. This event became the forerunner of Kampung Lawas Maspati as a tourist destination.

The city government was not involved at the beginning of this process. However, after the kampung showed its potential and readiness, the government stepped in and officially designated Maspati as a tourist kampung in January 2016. The city government then integrated Maspati into various urban development programs, such as cultural heritage preservation, community-based tourism promotion, and support for the development of Micro, Small, and Medium Enterprises (MSMEs) among Maspati residents. The Surabaya city government also promotes Kampung Lawas Maspati as a city destination on the official government website.

The government’s involvement shows a structural support that strengthens the position of the Maspati community in the city governance system. This collaboration shows that the state can play a constructive role when local communities prove their organizational capacity. It is also worth noting that the planning process driven by Maspati residents gives the community stronger bargaining power in negotiations with the government. In other words, the power relations in Maspati are more balanced because the local community already had a solid narrative and vision before the government intervened. (Tauran, 2018).

Unlike Maspati, the development of Kampung Warna-Warni Jodipan did not start with the initiative of the local community but with the idea of a group of students from the University of Muhammadiyah Malang (UMM) in May 2016. This initiative was not initially intended as a kampung tourism project,

but rather as a limited house cleaning and painting project. As explained by Mr. Parin, the Head of the RW, *“There was no plan to make it a tourist spot. However, because the idea was positive and accepted by the community, I gave permission.”* However, along the way, the project received support from a paint company and a mural community, which expanded the scope of the project to include the entire kampung. The kampung underwent a transformation because all the houses were painted in bright, contrasting colors, producing a stunning visual effect that captivated city residents and attracted widespread attention on social media.

Similar to Maspati, the Malang City Government was not involved in the initial transformation of Jodipan. It was only after the kampung went viral and received widespread media and public attention that the government stepped in and officially declared it a tourist kampung in September 2016. Unfortunately, after the declaration, structural support from the government was still minimal, especially after the COVID- 19 pandemic. The government did not follow up with development programs or adequate facility support. *“We want additional public facilities, such as a children’s playground. However, we are constrained by the budget. Moreover, the government has not provided any support,”* explained the residents. They hope for government assistance to build public facilities, but until now, this assistance has not been realized due to limited funds and minimal government assistance.

Impact of Tourism Initiative on the Socio-Economic Life of Kampung Residents

The Kampung tourism initiative in both Kampung has been proven to increase local economic activity. After the implementation of tourism initiatives, the influx of outside visitors spurred an increase in economic activity within the kampung, such as an increase in buyers at existing stalls in the kampung, and encouraged residents to open new stall businesses. Small stalls and shops that previously only served local residents began to receive more customers due to tourist visits. In Maspati, Mrs. Ina (54), a fried food and coffee seller, expressed her joy at the increasing number of visitors: *“My stall is getting busier and everything runs out quickly. Especially when large groups come, the bottled water runs out quickly.”* In Jodipan kampung, Mrs. Ani (47), a soto seller, said, *“In the past, my stall sometimes closed because there were few customers. But now I open every day because many visitors come here.”*

Tourism not only increases income for existing businesses but also opens up new income opportunities. Some residents have started selling snacks and traditional souvenirs such as t-shirts, sandals, and umbrellas. Tourism also creates informal jobs, such as parking attendants and ticket sellers. Mrs. Kus (45) said, *“I started selling after Jodipan became a tourist area. Previously, I just stayed at home without a job. However, after seeing many people coming here, I thought that maybe selling could be an option. The parking attendant in front is my neighbor.”* The benefits are felt not only by individuals

but also communally. Tourism activities provide income for local institutions such as RT and RW, which are used to fund improvements to kampung facilities and social activities that previously relied on community contributions. Income from tourism projects is used to improve kampung infrastructure, paint kampung roads, repair street lights, repair RW halls, and purchase plants for green open spaces and local waste management. For social activities, income from tourism is used to finance celebration activities held by residents for national or religious holidays. The income managed is also used to provide 'social assistance' for residents who experience the death of a family member.

Gotong-royong Practices in 'Kampung Lawas Maspati' and 'Kampung Warna-Warni Jodipan'

The leading Indonesian sociologist, Koentjaraningrat (1961), tried to explore the roots of the concept of gotong-royong by conducting research in two rural settlements in Central Java. Based on his study, he classified gotong-royong into seven types, namely: 1) gotong-royong activities that arise when there is a death or other disaster in the family of one of the kampung residents; 2) gotong-royong activities carried out by all kampung residents when there is a work project that is considered a common need; 3) gotong-royong activities that occur when a kampung residents holds a party or celebration; 4) the gotong-royong system applied in the care and cleaning of ancestral graves; 5) gotong-royong activities that take place when a resident needs help with work around his house;

6) gotong-royong systems and activities that are realized during the peak of agricultural production in all its aspects; 7) gotong-royong activities based on the obligation of the working class (coolies) to contribute their energy for the common good.

Of the seven groups, only three were found to be practiced by residents in Maspati and Jodipan kampungs, namely 1) gotong-royong activities that arise when there is a death or other disaster in the family of one of the kampung residents; 2) gotong-royong activities carried out by all kampung residents when there is a work project that is considered a common need; 3) gotong-royong activities that occur when a kampung residents holds a party or celebration. Then, based on the motive, the researcher divided it into two groups, namely, gotong-royong practices as a form of social spontaneity and gotong-royong as a form of collective action. This loose classification is needed to frame the practice of gotong-royong in the context of contemporary Indonesian urban society, which is very dynamic. This grouping is important in its aim to assess the potential of gotong-royong, whether it functions only as a social bond or further as a tool for social transformation.

Gotong-royong, as a form of social spontaneity, is an individual action of kampung residents that is not planned in a structured manner, arises on the basis of kinship, friendship, or emotional ties between residents, is incidental, and does not aim for major social or political change. An example of this practice is helping when a neighbor is

sick or suddenly experiences a disaster. Residents spontaneously help with family events such as weddings without formal invitations. This social spontaneity functions to strengthen social ties between residents emotionally, maintain social solidarity without coercion, and maintain community harmony informally.

Gotong-royong, as a collective action, refers to activities that are planned, organized, and explicitly aimed at achieving change or goals in the community. The function of this collective action is to serve as a tool for social change and to improve community conditions. This collective action can be carried out for practical, short-term purposes, to build kampung facilities such as integrated health posts, playgrounds, or kampung roads, or long-term and sustainable collective actions such as developing tourist kampungs to improve the local economy.

Gotong-royong as social spontaneity in ‘Kampung Lawas Maspati’ and ‘Kampung Warna-Warni Jodipan’

In the context of social spontaneity, the practice of gotong-royong is strongly maintained among residents of both kampungs. In interviews with residents in Maspati, residents said that the tradition of helping each other between neighbors is part of their lives. Mrs. Sur (58 years old), yes, this has been our custom for a long time. Helping each other if a neighbor is in trouble. The same thing was stated by Mrs. Chin, a resident of Chinese descent (72 years old), who said that she had lived in Maspati for more than fifty years. She lives alone, but she

is not worried because her neighbors often come to visit her, sometimes even bringing and giving her food without being asked. She also explained the tradition of residents caring for each other between neighbors, especially if someone is sick. They will visit their sick neighbors. Observation data also shows the same thing. The researcher witnessed a wedding ceremony of one of the residents held in the alley in front of the resident's house. Several women helped cook, while male neighbors also served as guests. The researcher also happened to observe several women sharing a rented vehicle to visit a hospitalized neighbor. The practice of gotong-royong in the context of social spontaneity was also observed in Jodipan. The practice of gotong-royong involves helping each other to meet daily needs. An example is seen in the fulfillment of sanitation needs. Residents at that time relied on water from a well owned by one of the residents, namely Mrs. Sifa. The practice of gotong-royong was also seen in meeting electricity needs, because at that time, not all houses had electricity connections.

Social solidarity between neighbors is the main foundation of urban kampung residents' lives because it supports them in facing structural limitations in dense urban areas that often lack basic facilities. In the midst of minimal access to formal services such as social security, relationships between residents become the primary source of daily assistance, from borrowing household appliances to looking after children. This solidarity creates a system of mutual assistance

that is functional and at the same time strengthens a sense of security.

Some authors argue that this strong practice of social spontaneity is a typical practice of rural communities that emerges because it is characterized by uniform jobs of residents (farmers), knowing each other, interacting often, and having relatively similar interests in their lives and work. This tradition is often considered incompatible with the lives of urban residents who have diverse types of jobs and high specialization, which leads to individualistic behavior and very different interests among neighbors. Therefore, bringing rural social traditions into the lives of urban residents is often considered counterproductive.

However, this argument is irrelevant to the city population living in urban kampung settlements. Social spontaneity is not merely a tradition that is brought or inherited, but it grows from the structural situation they face. People live in narrow and dense spaces, which intensifies interactions and encourages closeness. In addition, a long history of residence and, in some cases, the existence of kinship ties between neighbors further strengthen the sense of mutual care between them. Urban communities still allow for social solidarity if conditions are met.

Gotong-royong as a collective action in 'Kampung Lawas Maspati' and 'Kampung Warna-Warni Jodipan'

Gotong-royong activities, as a collective action, exist in both kampungs. In both kampungs, collective action is carried out based on the agreement of the residents, who have decided through community

meetings. Usually, the decision includes the purpose of the collective action, the implementation time, the resources needed, and the expected contribution from the residents, for example, the decision about gotong-royong to clean the kampung environment. Although the agreement expects compliance from residents, its implementation has no strict rules. Compliance with the decision depends on the residents' awareness. Generally, tolerance for absence from gotong-royong is understood, considering that each resident has their work responsibilities.

In the context of collective action, Kampung Lawas Maspati holds a routine gotong-royong every two months to clean the kampung environment and maintain infrastructure. Every August, they hold a community event to celebrate Indonesian Independence Day. They put up flags and decorations, build decorative gates, and hold traditional games. Residents also hold gotong-royong for national or religious celebrations. They also hold a night of prayer together on August 17th. Since 2013, this kampung has won several championships in inter-kampung competitions for green and clean, which are routinely held by the Surabaya city government every year. One of them is a community greening initiative called "Hijau Bersama 500", which won the city government award in the Green and Clean contest in 2013.

In Jodipan kampung, gotong-royong is carried out for two months to meet kampung needs, such as cleanliness and maintenance of the kampung environment.

Residents also carry out regular collective action to organize community events for national or religious celebrations by decorating the kampung or community gathering activities. Other collective action activities in Jodipan include installing road paving and building a badminton court. However, the Head of RW Jodipan admitted that before the start of the kampung tour, the level of gotong-royong held to maintain the cleanliness and tidiness of the kampung was relatively low. According to him, this was due to the low environmental awareness of residents. In collective action, Maspati appears to be more solid than Jodipan Kampung. One of the indicators is that, from 2012 to 2024, Maspati Kampung has often won the inter-kampung competition for green and clean held by the Surabaya city government.

Gotong-royong as a collective action for Kampung Tourism in ‘Kampung Lawas Maspati’ and ‘Kampung Warna-Warni Jodipan’

To analyze collective action, reviewing the common interests, leadership, and resource availability in both kampungs is important. These three factors are interrelated and form the foundation of collective dynamics: common interests unite the vision and motivation of residents; leadership provides direction, coordination, and impetus; while resources become the material and symbolic prerequisites for acting.

Common Interests

The common interest that drives collective action in Maspati and Jodipan

Kampungs is the desire to improve economic welfare through kampung tourism. Collective motivation in Maspati Kampung was formed organically after winning an inter-kampung competition for cleanliness, as stated by a community leader: *“We are very aware of the economic potential that we can achieve if this kampung attracts many visitors. Residents also agree that if we are united, there will definitely be real benefits,”* (Pak Sabar, Head of RW Maspati).

Meanwhile in Jodipan kampungs, although the idea of kampung tourism initially came from external sources, it was later adopted collectively by residents because of its economic impact: *At first we were hesitant, but after seeing visitors coming and our merchandise selling well, we all became enthusiastic,”* (Mrs. Kus, food vendor in Jodipan, interview April 2025). Meanwhile, the Head of RW Jodipan explained that to convince residents that kampung tourism is in their common interest, the method is *“to convince residents, the proceeds from ticket sales are used to distribute basic food (sembako) twice a year. In the past, we also had RT and RW dues for waste management, for death donations, and so on, but now they have been waived (exempted) because they have been met by income from tourism”* (Pak Parin, Head of RW, interview May 2025).

Common interests in the context of the transformation of tourist kampungs in Maspati and Jodipan are clearly oriented towards economic welfare through local tourism. This collective motivation grows from the awareness that tourism

can provide direct benefits in the form of additional income for them as kampung residents. However, the collective motivation that is deeply rooted internally in Maspati, as quoted by Mr. Sabar, who stated that there is a shared awareness of the benefits of tourism, produces more sustainable collective action compared to Jodipan, whose motivation is reactive and external. For this reason, a strong way of internalizing common interests is needed because collective action is prone to fragmentation or loss of direction when external pressure increases.

Leadership

In Maspati Kampung, proactive leadership is seen in communication and coordination in community activities. Proactive leadership is a leadership style that actively anticipates needs and changes and takes the initiative to realize change. Observations show that the Head of RW Maspati communicates strongly with his residents. He actively directs the division of tasks, ensures cleanliness, and organizes greening activities in the kampung environment. He has a vision for kampung development and can mobilize resources (residents, money, networks) in a planned manner. Initiate local innovation or social transformation. Build relationships with external actors to strengthen the position of the community. The head of RW actively builds networks and opens communication with students, lecturers, companies, the government, and the history and art communities to exchange ideas for the development of Maspati Kampung. *“The kampung needs*

support from universities. Need support from companies. We cannot do it alone”.

Meanwhile, in Jodipan Kampung, leadership is more reactive and situational. Reactive leadership responds to situations or challenges after they arise, usually moving only when there is external or pressing social pressure. In Jodipan Kampung, the tourism kampung initiative came from students and outsiders. Local leaders approved the project because they saw the positive response from residents and the economic benefits that were already visible. They moved after there was external encouragement. Waiting for stimulus or initiative from outside (top-down or external).

Effective leadership is visible in Maspati through coordination and the ability of leaders to mobilize resources. At the same time, in Jodipan, it is informal and sporadic, although still visible at certain moments, such as community events. Structured leadership, as observed in routine coordination in Maspati, is crucial in maintaining the solidity and continuity of collective action. On the other hand, informal leadership in Jodipan, as stated by Mr. Parin, although flexible, is not strong enough to face long-term structural challenges such as minimal government support, which ultimately weakens the collective bargaining power of residents in the context of neoliberal urban development.

Resources

Regarding tenure status, Maspati Kampung has a strong land ownership status with clear ownership rights. At the same time, Jodipan Kampung stands on state land without formal ownership rights, placing its residents in a situation that is more vulnerable to legal uncertainty. The physical condition of the buildings in both kampungs is permanent. However, Maspati has the additional advantage of several colonial-era heritage buildings that function as historical tourist attractions, while Jodipan does not have similar historical physical assets. In terms of basic infrastructure, Maspati Kampung has its needs met with adequate basic infrastructure, such as road networks and sanitation. In contrast, Jodipan Kampung faces challenges with the lack of basic infrastructure, such as sanitation and waste disposal systems, which previously led to throwing waste directly into the river.

In terms of educational background, the majority of Maspati residents have a higher level of high school education compared to Jodipan residents, who are mostly educated at elementary to junior high school. This has an impact on the capacity of residents to adapt to the dynamics of the urban economy and society. The economy of the residents of the two kampungs shows significant differences. Maspati has a population with mixed incomes, both low and middle, with jobs in the formal and informal sectors, while Jodipan is predominantly low-income. The social network owned by Kampung Maspati

is categorized as strong, supported by close relationships with various external parties such as the arts, culture, and city government communities, which have helped this kampung strengthen its social and economic position. In Jodipan, the network still has potential that emerged from initial collaboration with external groups (students and private companies), but has not been fully utilized for long-term development. Better structural resources and the ability to mobilize resources are Maspati's strengths. Resources in the form of historical buildings, strong social capital, and extensive networks are used optimally for the common good. Different from Jodipan, which utilizes visual appeal and social networks informally.

Gotong-royong and space production: between participatory development and co-optation of neoliberal development

Neoliberalism can be understood as an ideology that emphasizes the importance of individual freedom and responsibility, free markets, and a state that does not intervene and facilitates economic development and human welfare. In the context of urban development, neoliberalism can be understood not only as an ideology but also as a certain rationality and technology of (state) rules, or "governance" that is carried out to manage the population and urban environment. (Véron, 2010). Many studies show that the neoliberal urban development model has a major impact on the future of informal settlements, both structurally and culturally. (see for instance: Baffoe, 2023; Kidokoro et

al., 2022; Su, 2023). Structurally, this approach encourages the commodification of urban space. Informal settlements such as kampungs, which were previously considered community living spaces, have become objects of investment or urban planning projects based on economic value. As a result, kampungs have the potential to experience hidden evictions, both directly and through economic and social pressures. Culturally, kampung residents lose their autonomy in determining the direction of their own development because “arrangement” programs often come from outside, driven by the logic of capitalist economics.

This study shows that the Kampung Tourism Initiative has created a new social space in each kampung within the city landscape. The transformation of the two kampungs not only has an economic impact and improved kampung infrastructure, but also shows how kampung residents claim, manage, and give new meaning to their residential environment. It is undeniable that gotong-royong is the main means for residents to organize kampung tourism. The value of gotong-royong as a social spontaneity is still well maintained in Maspati and Jodipan. This practice is a glue and social safety net for kampung residents amidst the economic pressures of the city.

The practice of gotong-royong as a collective action is also maintained in both kampungs. However, so far it has been limited to fulfilling short-term common interests such as repairing roads, building security posts, and the like. Gotong-royong has not been directed

at efforts for greater socio-political change for kampung residents, gotong-royong is trapped in the co-optation of “invited participation”, where community involvement is limited to volunteer labor to realize projects that have been determined from above (top-down), even though they have never been involved in the process of formulating its goals. Gotong-royong becomes a mechanism of social discipline, namely a way to form “submissive” and “productive” citizens according to neoliberal development standards: active, individually responsible, and not demanding collective rights. In this narrative, kampung gotong-royong is measured by how active its citizens are in volunteering, not by whether they have control over resources or decisions regarding the development of their homes.

The initiative to organize kampung tourism brings the kampung to a crossroads between kampung socio-political change and the trap of neoliberal development. There is a significant shift in the practice of gotong-royong in both kampungs. Before the kampungs were known as tourist destinations, gotong-royong was carried out more based on the internal needs of the residents, such as cleaning water channels and repairing public facilities. However, after becoming tourist kampungs, the orientation of gotong-royong shifted to a broader direction, namely responding to and accommodating external interests, namely visitors. This change shows that kampung tourism initiatives can strengthen the collective capacity of residents, but can also shift the orientation

of gotong-royong from merely meeting the internal needs of the community to serving external demands.

This study shows that government support for citizen initiatives in organizing kampung tourism is reactive, rather than functioning as an enabler from the start. This shows how government recognition of kampung communities in the urban system remains selective and conditional, given only after they have demonstrated “market value” in the discourse of a creative city with economic value. Such conditional recognition risks excluding other communities structurally who do not have similar access to public attention. This reflects how the right to the city is distributed unevenly (Harvey, 2008).

In terms of gotong royong as a collective action, there are significant differences. Maspati shows more solid gotong royong. Maspati gains access to city programs because of its collective success and stable legal status. Meanwhile, Jodipan, an informal and legally marginalized area, only receives visual recognition (in the form of tourism branding), but not substantive rights such as land status and infrastructure. This highlights the inequality in spatial justice and government attention to informal communities.

Maspati and Jodipan kampungs have different historical backgrounds and socio-spatial structures. Historically, Kampung Maspati is an old kampung that has formal legal legitimacy over its land. In contrast, Jodipan is a new kampung, which was developed in

the 1980s on state land, meaning that residents’ ownership is considered illegal. This difference in land status creates an unequal social position: Jodipan is threatened with eviction (Alfian & Akbar, 2020), while Maspati enjoys stronger structural recognition. This situation reflects the unequal power relations between marginalized communities and the state. Jodipan exemplifies how marginalized communities (assisted by external non-state actors) can fill gaps in urban policy. However, after community initiatives succeed and receive symbolic recognition, there is no further substantial support from the state. The Jodipan community must manage the changes and challenges that arise on its own, without full access to public resources.

Gotong-royong can become a tool for neoliberal development and the co-optation of kampung residents when mobilized to support a development agenda that is market-oriented rather than the interests of the residents themselves. In this context, gotong-royong no longer appears as an autonomous expression of the needs and solidarity of citizens, but as a legitimation tool and participatory complement to urban planning programs controlled by external actors such as the city government, donors, or corporations. The challenge is to distinguish between gotong-royong as an empowerment tactic and gotong-royong as a power-layering tool, and for this, it requires political awareness and critical reflection from citizens regarding who benefits from each joint action they take.

Gotong-royong can be a tool for the struggle of kampung residents in opposing neoliberal development if it is practiced as a form of conscious collective action and has the goal of strategic change, not just a routine activity or social tradition. In this context, gotong-royong does not only mean working together, but also consolidating community power, where residents collectively set agendas, build solidarity, and strengthen their bargaining position against external actors such as the city government. Gotong-royong can also function as a symbolic political medium of resistance, namely presenting alternative forms of development based on the real needs of residents, not market logic, by producing space based on the values of togetherness, care, and sustainability. Gotong-royong in this form is not traditional nostalgia, but rather a political strategy that is contextual, critical, and oriented towards social justice.

Conclusion

The transformation of Kampung Lawas Maspati in Surabaya and Kampung Warna-Warni Jodipan in Malang into tourist destinations reveals the practice of gotong roong in the dialectical dynamics between citizen agency and the limitations of power structures in the context of neoliberal urban development. This study shows that gotong-royong is not just a cultural heritage, but a flexible socio-political practice that can be reproduced as a survival strategy, a tool for collective organizing, and a mechanism for space production. However, this study also

emphasizes that the potential of gotong roong in transforming kampungs is determined by the structural position of each kampung in the urban governance landscape. Kampung Maspati, with its own land status, is able to build a relatively balanced relationship with the city government and utilize gotong-royong as a more sustainable tool for space production. In contrast, Jodipan illustrates how kampungs originating from informal positions remain structurally vulnerable, even after receiving symbolic recognition through the creative city narrative.

Therefore, gotong-royong in the context of kampung development must be understood not only as an expression of social solidarity but also as part of a community governance system that demands active state involvement. The resilience of a kampung in an urban landscape cannot depend solely on the collective spirit of its citizens. The state must be substantively present, not only through symbolic recognition, but through the redistribution of resources, the development of community capacity, and the protection of citizens' spatial rights. Within the framework of social justice and the right to the city, gotong-royong must be seen as a political practice with transformative potential, not just an adaptive mechanism in the face of the state's absence.

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