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"Warning in Spaces: Blending Heritage, Nature and Design"

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Faculty of Built Environment, UiTM Perak Branch, Seri Iskandar Campus



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"Harmony in Spaces : Blending Heritage, Nature and Design"

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Tactical Urbanism As A Landscape Strategy: Turning Streets Into Social Spaces In Jalan Maharani In Teluk Intan

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Abstract

Tactical Urbanism has emerged as a transformative Landscape Architecture strategy, emphasizing small-scale, low-cost, and short-term interventions to reimagine underutilized urban areas. This study explores the application of tactical strategies to transform vehicle-dominated Streetscape Design into vibrant Social Spaces that prioritize human interaction over transit efficiency. By utilizing modular elements such as pop-up parks, temporary seating, and creative surface treatments, this approach allows for the immediate activation of streets while serving as a testing ground for long-term urban evolution. The research evaluates how these agile interventions can bypass traditional bureaucratic delays to foster inclusivity and a sense of belonging among diverse user groups. Ultimately, this study demonstrates that Urban Design centered on flexible, community-led transformations can successfully turn rigid infrastructure into resilient public realms that enhance the quality of urban life.

Keywords: *Tactical Urbanism, Streetscape Design, Social Spaces, Landscape Architecture, Urban Design*

INTRODUCTION

Across global cities, streets are increasingly recognized as more than conduits for movement; they are vital public spaces that shape the social, economic, and cultural life of communities. The Tactical Urbanism approach, famously defined as "short-term action for long-term change," offers a flexible Landscape Architecture strategy to reclaim and reimagine these environments (Lydon & Garcia, 2015). By utilizing low-cost, community-driven interventions, cities can transform neglected or vehicle-dominated areas into inclusive, people-centered environments. In high-density urban settings, these strategies act as a critical bridge to convert spontaneous informal activities into structured formal enhancements that meet immediate community needs (Salama et al., 2024).

However, many modern cities remain heavily shaped by car-oriented infrastructure, which neglects the social dimensions of public life. As a result, streets have often become spaces of transit rather than human-scale connection, reducing opportunities for community interaction (Gehl, 2010). While tactical urbanism offers solutions like shared plazas or parklets, many efforts struggle to achieve lasting impact due to bureaucratic friction and the absence of integrated Urban Design policy frameworks (Lydon & Garcia, 2015).

In the local context of Teluk Intan, Malaysia, Jalan Maharani serves as a critical site for investigation. As a primary artery in the town's historic heritage zone, the street is characterized by dense shop-houses and high vehicular pressure. Research on Malaysian townscapes suggests that many heritage town centres suffer from a lack of "pedestrian-friendly street networks" and "well-managed streetscape furniture," which

directly reduces the social quality and liveability of the area (Shamsuddin et al., 2012). This lack of pedestrian priority reinforces the problem of the street acting as a purely functional corridor rather than a Social Space. By framing tactical urbanism as a landscape strategy for Jalan Maharani, this study seeks to identify the mechanisms that can bridge short-term experimentation with durable, human-scale transformation.

Consequently, this research aims to investigate how tactical urbanism can transform streets from purely functional corridors into socially engaging public spaces that strengthen community ties, enhance urban livability (RO1), and encourage equitable access to shared environments. To achieve this, the study follows three primary objectives: first, to analyze the design and spatial features of tactical interventions that successfully activate streets as social spaces; second, to examine the community engagement and governance frameworks that support the social transformation of streets (RO2); and third, to evaluate the social, cultural, and economic outcomes of these interventions using measurable indicators of community well-being (RO3). Through this cohesive approach, the research aims to ensure that temporary landscape interventions on Jalan Mahrani can catalyze sustainable, long-term urban change.

LITERATURE REVIEW

Tactical Urbanism

Tactical Urbanism is defined as a city-making approach that uses "short-term action for long-term change" (Lydon & Garcia, 2015). It functions as a low-cost methodology for testing urban improvements such as parklets and pop-up plazas before committing significant capital. However, research into "Do-It-Yourself" urban design suggests that without formal institutional support, these projects are often viewed as "informal" or "unauthorized" acts that struggle to gain official legitimacy within the planning system (Douglas, 2014).

Streetscape Design

Streetscape design refers to the visual and functional quality of the street as a "public room." As Jacobs (1993) asserts, "great streets are those that are representative of the city and those that are memorable". Successful streetscapes prioritize the pedestrian; according to Gehl (2010), "the quality of the streetscape is a primary determinant of whether people choose to walk or stay in a space". In Jalan Mahrani, the streetscape must balance modern social needs with the existing historical fabric.

Social Spaces

The concept of streets as social spaces rests on the idea that human interaction, diversity, and everyday vitality are essential to healthy urban environments, as famously argued by Jacobs (1961). Tactical Urbanism facilitates this by providing a participatory, community-driven means to prototype and test design ideas in real-time. However, the long-term sustainability of these spaces depends on equitable management. Research suggests that tactical interventions can face significant challenges regarding maintenance, safety, and long-term viability if they are not integrated into formal policy frameworks (Douglas, 2014).

Landscape Architecture

Landscape architecture provides the experiential framework for streets, moving beyond mere aesthetic decoration to shape the functional life of the city. Corner (2014) argues that the field must shift its focus from static master plans toward the performance and the tactility of the urban surface, as the physical materiality of the environment is what ultimately enables and instigates new forms of social interaction

Urban Design

Urban design focuses on how buildings, streets, and public spaces work together to support everyday life and social interaction in cities. Jacobs (1961), argues that diverse, active streets and everyday sidewalk life are essential conditions for safe, vibrant urban environments. Her work underpins contemporary views of streets as social spaces rather than mere traffic corridors.

RESEARCH METHODOLOGY

This study adopted a qualitative research design to examine how tactical urbanism could be applied as a landscape strategy to activate streets and public spaces at Jalan Mahrani, situated within the historic heritage core of Teluk Intan. The methodology was designed to bridge the gap between "short-term action and long-term change". By focusing on the "tactility of the urban surface", the approach sought to move beyond traditional top-down master planning to understand how incremental changes could foster social vitality.

Site Selection

Jalan Mahrani in Teluk Intan, a key arterial road from the town's colonial era, linked historic markets and the Perak River waterfront, reflecting its evolution from a bustling 1880s trading post to a modern thoroughfare. Amid vehicle dominance and flood risks, it embodied untapped social potential. Tactical Urbanism as a Landscape Strategy transformed such streets into vibrant social spaces through low-cost interventions like pop-up plazas, bike lanes with cultural motifs, and permeable planters. These quick tactics enhanced walkability, revived community gatherings, and boosted tourism, turning Jalan Mahrani into a pedestrian hub that honored Teluk Intan's multicultural heritage while adapting to climate challenges.



Figure 1: Location plan, Jalan Maharani, Teluk Intan, Perak

Data Analysis

The interviews were conducted in person, recorded with consent, and transcribed verbatim. The data were analysed using thematic analysis, a flexible method for identifying patterns in human experience and spatial

perception. Following the approach outlined by Braun and Clarke (2006), the researchers first familiarised themselves with the interview transcripts and then systematically coded the data in ATLAS.ti 24 to identify meaningful patterns related to the social and physical environment of Jalan Mahrani.

By utilizing ATLAS.ti 24, the study generated distinct themes focused on the five core areas: Tactical Urbanism, Community Engagement, Governance Structures, Policy Frameworks, and Intervention Outcomes. This process allowed the research to reach thematic saturation, identifying how stakeholders personally experienced the shift from a "purely functional corridor" to a "socially engaging public space." The software facilitated the creation of network diagrams to visualize the relationship between 2's governance and the physical gaps such as the lack of lighting and green infrastructure observed during the field study. Below is a more detailed explanation of the Data Analysis.

Data Collection and Thematic Saturation

To achieve saturation across the five core themes, this study employs a dual-method approach, a Site Observation Checklist and Semi-Structured Interviews. Data collection continues until no new information or themes emerge, ensuring the research is comprehensive.

Stage 1: Field Observation (Checklist)

The first phase involves a systematic assessment of the site using a structured Site Observation Checklist. This tool evaluates Jalan Mahrani across 15 specific aspects, including walkability, street furniture, green infrastructure, safety, and heritage integration. The checklist uses a 5-point agreement scale to identify immediate physical opportunities and existing gaps in the urban fabric.

Stage 2: Semi-Structured Interviews

Following the field observation, the study utilizes semi-structured interviews to gather in-depth insights. This method allows for a flexible dialogue that can uncover complex issues regarding policy and community sentiment that a checklist alone cannot capture.

Target Participants: To ensure a comprehensive perspective, the study targets seven (7) participants:

- **Professional Experts:** Two (2) professional Urban Planners/Landscape Architects to provide technical design critiques.
- **Local Authority (MPTI):** Two (2) officers from the Urban Planning and Landscape Architecture departments to discuss governance and policy frameworks.
- **Local Community:** Three (3) local residents or business owners to provide insights into community engagement and user experience.

Table 1: List of Participants

Informants	Profession	Gender
Respondent 1	Urban Planner	Male
Respondent 2	Landscape Architect	Male
Respondent 3	Urban Planner	Male
Respondent 4	Landscape Architect	Female
Respondent 5	Teacher	Male
Respondent 6	Construction Worker	Male
Respondent 7	Chef	Male

Ethical Considerations

Ethical procedures were carefully observed throughout the research process. Participants were fully informed about the purpose of the study and provided written consent through a participant information sheet. To protect their privacy, pseudonyms were used, and only non-identifiable information was recorded. No photographs or videos of participants were taken at any point.

Interviews were audio-recorded, and only the researchers had access to these files. Participants retained the right to withdraw from the study at any time by simply notifying the researchers. These steps ensured that the investigation into Jalan Mahrani's social potential was conducted with the highest standards of academic integrity.

FINDINGS

Table 2: Tactical Urbanism Observation Checklist

JALAN MAHARANI

No.	Aspect Observed	Observation Points	Agreements Scale	Notes/Remarks	Proof / Photo
1	Walkability	Presence of continuous pedestrian pathways, safe crossings, and shade elements	4	The continuous road to the Jalan Mahrani is very Clear	
2	Street Furniture	Benches, planters, signage, and interactive elements encouraging social interaction	5	Inside the shops, providing enough benches can further enhance social interaction.	
3	Temporary Design Elements	Pop-up stalls, murals, parklets, or creative tactical interventions	5	A row of pop-up stalls is located along Jalan Mahrani.	
4	Community Activities	Public use for markets, gatherings, or performances observed	5	The public uses Jalan Mahrani as a place to buy and sell wet goods.	

5	User Diversity/ inclusivity	Active use of space by diverse user groups (families, youth, elderly, tourists)	5	People of various ages, from young to old, actively come to Jalan Mahrani.	
6	Green Infrastructure	Street trees, planter boxes, or vegetated buffers improving comfort	2	Large trees are very scarce; the stretch of Jalan Mahrani is dominated mainly by hardscape.	
7	Heritage Integration	Presence of cultural or historical design elements near Menara Condong	5	Cultural representation along Jalan Mahrani is primarily from the Chinese community.	
8	Safety	Adequate lighting, visibility, and sense of security at night	1	There is no night lighting, and there are abandoned back lanes off Jalan Mahrani with no bollards or barriers, only a zebra crossing.	
9	Accessibility	Inclusive design for disabled, elderly, and strollers	3	Jalan Mahrani provides universal design through ramps for people with disabilities.	
10	Level of Activities	Mixed-use edges (cafés, shops, stalls) contributing to vibrancy	3	Activities along Jalan Mahrani mainly involve buying and selling in the early morning.	

11	Level of Cleanliness	Cleanliness, absence of litter, well-maintained surfaces	3	Cleanliness is average; visitors may not see it as dirty, but there is an unpleasant smell.	
12	Local Authority Presence	Signboards or personnel showing MPTI's involvement	1	There is no noticeable presence of the local council (MPTI) in the area.	
13	Community Participation	Signs of community initiatives (murals, events, decorations)	3	There is a very large entrance with colours that strongly attract attention.	
14	Sustainability Practices	Recycling bins, reused materials, or eco-friendly infrastructure	1	There are no nearby recycling bins.	
15	Tactical Urbanism Reflection	Overall impression: Does the site reflect tactical urbanism principles	3	This site has potential for improvement and to demonstrate good tactical urbanism.	

State in Agreement Scale

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

function as a socially activated street. Aspects such as Walkability, Connectivity, and Safety were prioritized as they form the fundamental physical layer required for successful urban intervention. Safety, in particular, was observed to determine if the environment provides the necessary psychological security for public use after dark. The inclusion of Street Furniture, Temporary Design Elements, and Green Infrastructure served to measure the "tactical" readiness of the site identifying whether small-scale, low-cost additions are already present or needed to improve user comfort. Furthermore, observing Community Activities, User Diversity, and Heritage Integration allowed for an assessment of the street's social and cultural value, ensuring that any future strategies respect the local identity and the needs of various age groups. Finally, categories regarding Local Authority Presence and Sustainability were included to identify the gap between organic community use and official institutional support.

The research employed a five-point agreement scale to provide a quantified measure of the qualitative conditions observed on-site. High scores of 4 or 5 indicate established strengths where the street is already performing effectively, such as in its role as a hub for community activities and its high degree of user diversity. This highlights that the social foundation for activation is already robust. Conversely, a neutral score of 3, seen in aspects like cleanliness and accessibility, suggests areas that are functional but require

refinement to meet optimal standards. Low scores of 1 or 2 represent critical infrastructure failures, specifically regarding night lighting, the presence of the local authority (MPTI), and green infrastructure. These low-scoring areas serve as the primary justification for the proposed tactical urbanism interventions, as they highlight exactly where the urban fabric is currently failing the community.

The findings for Jalan Maharani reveal a site that functions as a vibrant but physically undersupported social environment. The street exhibits a high level of organic tactical urbanism, as evidenced by the successful integration of pop-up stalls and the active use of the space by diverse groups for trading and social gathering. However, the physical environment remains dominated by hardscape, with a notable scarcity of greenery and a complete absence of evening safety infrastructure. The lack of a visible local authority presence suggests that the current street life is largely self-organized by the community rather than a result of formal planning. Ultimately, Jalan Maharani reflects the core tenets of tactical urbanism by demonstrating high social potential that is currently restricted by physical constraints. The site acts as an ideal prototype for landscape strategies that use short-term, low-cost actions to bridge the gap between its current state as a morning market and its potential as a safe, connected, and permanent social hub for Teluk Intan.

ANALYSIS AND DISCUSSION

This study utilized ATLAS.ti 24, a qualitative data analysis software, to facilitate systematic theme coding and content interpretation. Data obtained from the semi-structured interviews and field observations conducted at Jalan Maharani, Teluk Intan, were imported into the software for analysis. Thematic analysis was conducted to systematically interpret the qualitative data through a rigorous multi-stage process. First, all semi-structured interview recordings were fully transcribed verbatim into written text. The transcripts were reviewed carefully to ensure accuracy before being imported into the ATLAS.ti 24 environment. Each transcript was labeled using respondent codes to maintain participant confidentiality, in line with established ethical protocols.

Next, an initial familiarization with the data was conducted by reading the transcripts several times to gain an overall understanding of the participants' experiences regarding the street's social vitality. During this stage, specific attention was given to recurring ideas related to the street's transition from a functional corridor to a social space. Initial coding was then conducted by identifying meaningful segments of text relevant to the specific study objectives.

For the first objective (RO1), which analyzed the design and spatial features of tactical urbanism, codes such as “tactical urbanism,” “pop-up stalls,” and “walkability” were applied to segments describing how physical interventions activated the street. For the second objective (RO2), which examined the frameworks supporting social transformation, codes related to “community engagement,” “governance structures,” and “policy frameworks” were used. These codes specifically captured insights into the current lack of MPTI presence and potential regulatory barriers observed in the field. For the third objective (RO3), which evaluated social, cultural, and economic impacts, the theme “outcome from interventions” was used to code data regarding community well-being, heritage integration, and the revival of local gathering spaces.

Finally, these refined themes were used to structure the analysis and discussion sections. Relevant quotations from the seven participants including professionals, MPTI officers, and local residents were selected to support each theme. The findings were then interpreted in relation to the research objectives and existing literature to ensure a cohesive understanding of how tactical urbanism transformed Jalan Mahrani. This systematic approach using ATLAS.ti 24 ensured that the study reached thematic saturation, providing a comprehensive look at the street's potential as a socially vibrant environment.

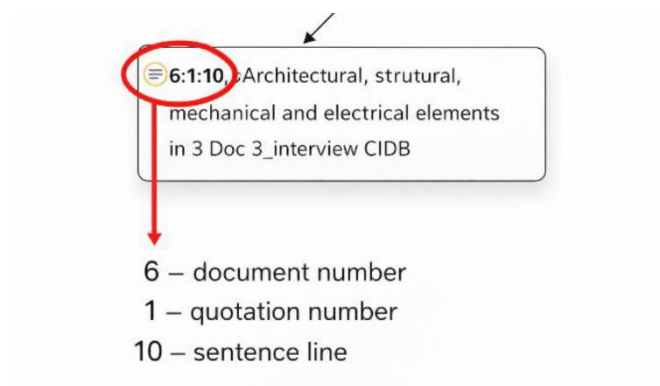


Figure 2: How to Read the Quotation ID

Research Objectives 1: To analyze design and spatial features of tactical urbanism interventions that successfully activate streets as social spaces.

The physical success of Jalan Mahrani as a social space was evaluated through its structural layout and the modular elements that invited public use. This objective was explored through five Subcoding: Connectivity, Pedestrian Walkability, Safety, Street Furniture, and Temporary Design Elements.

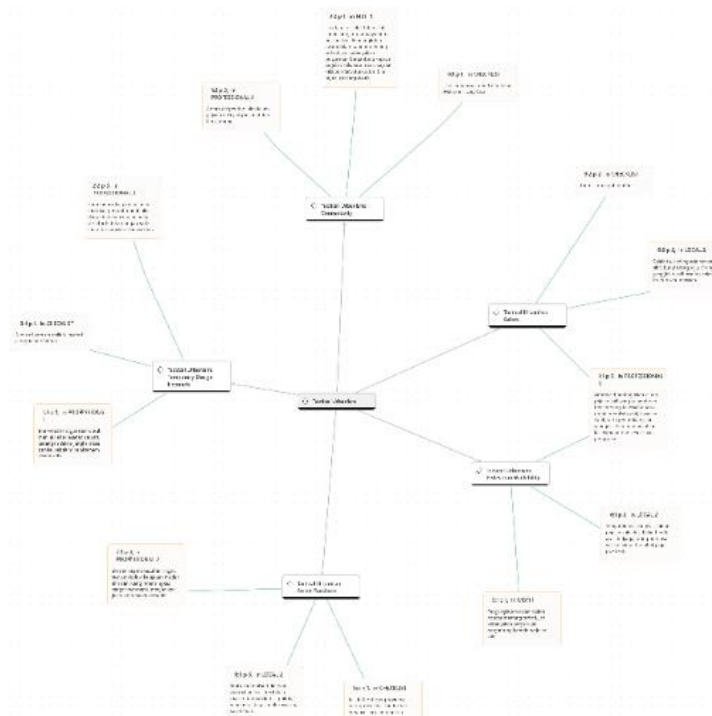


Figure 3: Network Of Tactical Urbanism

Connectivity

Connectivity referred to how the street functioned as a network link within Teluk Intan. The site observation checklist confirmed that the continuous road connection to Jalan Mahrani was clear, establishing it as a primary urban artery. However, both professional and authority respondents identified a gap at the last-mile level. Respondent 1 (MPTI) stated, *“Isu utama di Teluk Intan ialah connection... laluan pejalan kaki pun terputus-putus.”* This indicates that while vehicular connectivity is strong, pedestrian movement remains fragmented. Respondent 1 (Professional) further emphasized that for tactical urbanism to be effective, pathways must be *“selamat dan bersambung,”* highlighting the need for safe and continuous pedestrian connections to enable seamless movement between the historic market area and the waterfront.

Tactical Urbanism Tactical Urbanism: Connectivity 8/1 p.1, in CHECKLIST The continuous road to the Jalan Mahrani is very Clear 1/2 p.3, in PROFESSIONAL 1 Andara ada perintang jalan dalam kawasan yang selamat dan bersambung 3/2 p.1, in MBTI 1 Isu utama di Teluk Intan ialah connection, khususnya untuk pejalan kaki, terputus-putus dalam bandar (sepanjang jalan) jadi, terputus-putus pergerakan bergerak kepada kawasan kaki, tapi dalam kawasan jalan terputus-putus, jika hujan memang susah. <table border="1"> <thead> <tr> <th>No.</th><th>Aspect Observed</th><th>Observation Points</th><th>Agreements Scale</th><th>Notes/ Remarks</th><th>Proof / Photo</th></tr> </thead> <tbody> <tr> <td>1</td><td>Walkability</td><td>Presence of continuous pedestrian pathways, safe crossings, and shade elements</td><td>4</td><td>The continuous road to the Jalan <u>Mahrani</u> is very Clear</td><td></td></tr> </tbody> </table>						No.	Aspect Observed	Observation Points	Agreements Scale	Notes/ Remarks	Proof / Photo	1	Walkability	Presence of continuous pedestrian pathways, safe crossings, and shade elements	4	The continuous road to the Jalan <u>Mahrani</u> is very Clear	
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1	Walkability	Presence of continuous pedestrian pathways, safe crossings, and shade elements	4	The continuous road to the Jalan <u>Mahrani</u> is very Clear													

Figure 4: Network Of Connectivity & Observation Checklist

Pedestrian Walkability

The data revealed that walkability was the foundation of social life on the street, though its effectiveness was hindered by environmental factors. Respondent 1 (MPTI) noted: *"Kebanyakan pergerakan bergantung kepada berjalan kaki. Tapi laluan pejalan kaki pun terputus-putus, bila hujan memang susah."* This suggests that while the "desire" to walk existed, the physical infrastructure remained inconsistent. Conversely, where the pathway was stable, user satisfaction increased. Respondent 2 (Local) shared: *"Laluan pejalan kaki elok. Kalau benda asas ni dijaga, orang pun rasa selesa."* This sentiment was supported by the Professional Respondent's view that a continuous path is vital for *"meningkatkan keselesaan pengguna"* (increasing user comfort).

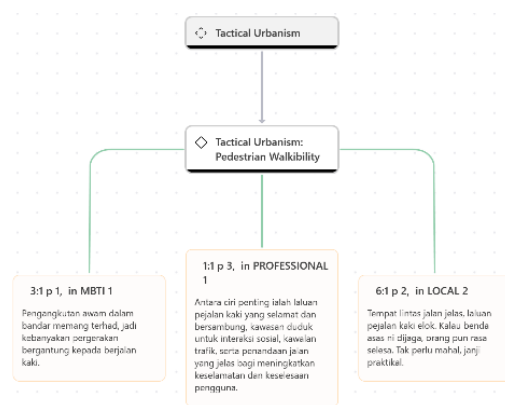


Figure 5: Network Of Pedestrian Walkability

Safety

Safety emerged as a critical barrier to social activation, particularly during evening hours. While the site observation checklist identified the presence of a clear zebra crossing, it also highlighted major deficiencies, including the absence of night lighting and abandoned back lanes without bollards or barriers. This physical lack of security had a direct psychological impact on the community. Respondent 2 (Local) remarked, *"Orang yang jalan kaki rasa tak selamat disebabkan mat rempit. Itu pun satu masalah."* This indicates that perceived threats significantly discourage pedestrian use of the street. Respondent 1 (Professional) emphasized, *"Kawalan trafik serta penandaan jalan yang jelas perlu diberi keutamaan."* This statement underscores the importance of traffic control and clear road markings in establishing a safer and more secure public environment.

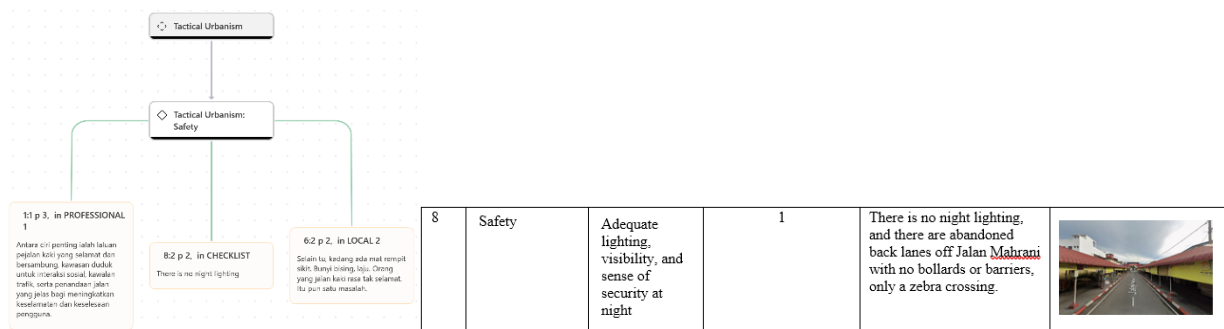


Figure 6: : Network Of Safety & Observation Checklist

Street Furniture

The study identified a high demand for static street elements that encourage people to linger rather than merely pass through. The checklist observation noted that within or near shop areas, providing sufficient seating could enhance opportunities for social interaction. Professional respondents supported the introduction of tactile elements to soften and humanize the hardscape. Respondent 2 (Professional) suggested, “*Elemen seperti tempat duduk, kehijauan mudah alih dan ruang rehat ringkas.*” This reflects the need for simple physical interventions that improve comfort and usability. From the local perspective, these additions were seen as practical and immediately beneficial. Respondent 2 (Local) stated, “*Macam tambah kerusi, pokok... benda macam ni senang nak buat dan orang terus boleh guna.*” This indicates that small-scale improvements are perceived as achievable and effective in enhancing everyday street use.

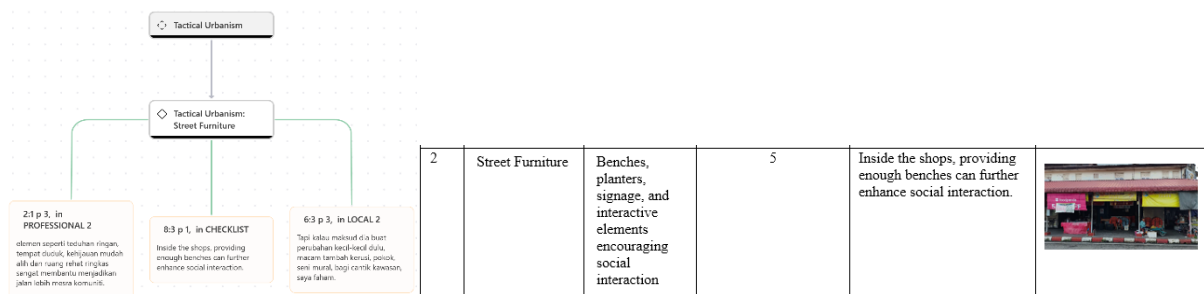


Figure 7: Network Of Street Furniture & Observation Checklist

Temporary Design Elements

Temporary interventions acted as the tactical catalyst for activating the street. The site observation checklist recorded a row of pop-up stalls already in operation, serving as a primary attraction for diverse age groups. Respondent 1 (Professional) explained, “*Intervensi ini digunakan untuk menilai keberkesanan sesuatu cadangan dalam jangka masa pendek sebelum pelaksanaan secara kekal.*” This highlights the role of temporary measures as testing mechanisms prior to permanent implementation. To further strengthen this approach, Respondent 2 (Professional) proposed, “*Kami mencadangkan pelantar modular, perabot mudah alih daripada bahan kitar semula, serta struktur teduhan ringan.*” This suggests that modular and flexible elements can support adaptability, allowing the street to respond effectively to varying uses across different times of the day, including morning market activities observed during the site study.

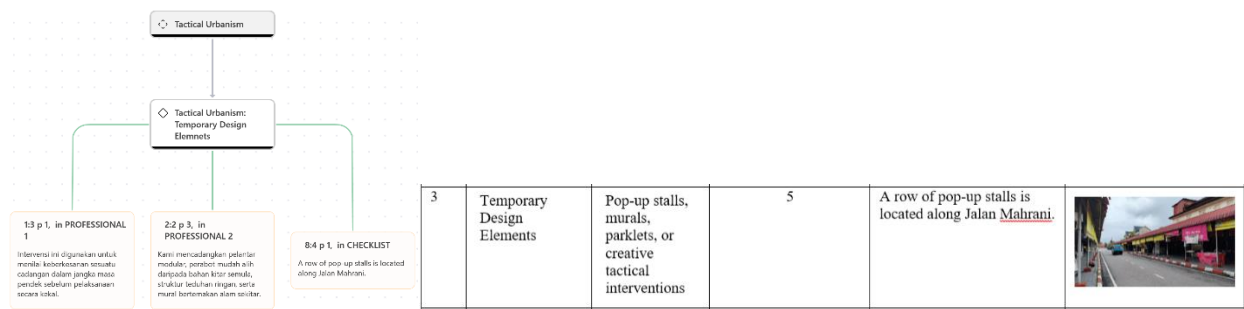


Figure 8: Network Of Temporary Design Elements & Observation Checklist

Research Objectives 2: To examine community engagement, governance structures, and policy frameworks that support the social transformation of streets.

This section explores the social and structural frameworks that supported the transformation of Jalan Mahrani. The findings were categorized into three primary themes: Community Engagement, Governance Structures, and Policy Frameworks.

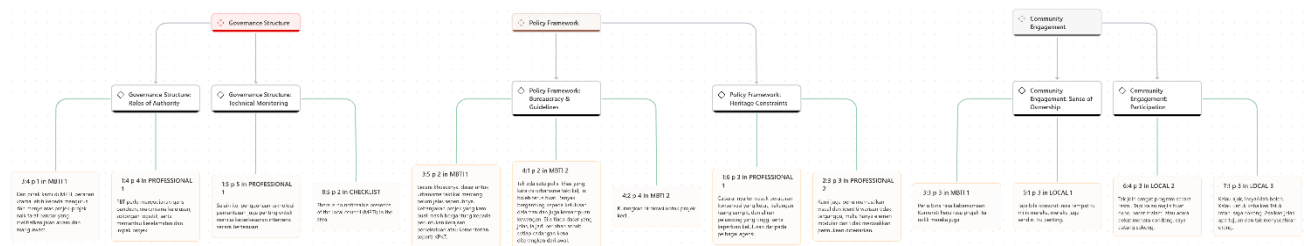


Figure 9: Network Of Community Engagement, Governance Structures, and Policy Frameworks

Community Engagement

The research found that successful street activation on Jalan Mahrani relied heavily on the psychological connection between the residents and the space. Two subcodes emerged: Sense of Ownership and Participation.

Sense of Ownership

Respondents emphasized that for tactical interventions to be sustainable, the community must feel a sense of ownership over the project. Respondent 1 (MPIT) stated, “*Perlu bina rasa kebersamaan. Komuniti kena rasa projek itu milik mereka juga.*” This highlights the importance of fostering collective belonging, where the community perceives the project as their own. Similarly, Respondent 1 (Local) explained, “*Bila komuniti rasa tempat tu milik mereka, mereka jaga sendiri. Itu penting.*” This indicates that a strong sense of ownership motivates the community to take responsibility for maintaining the space independently.

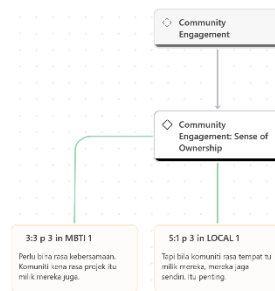


Figure 10: Network Of Sense of Ownership

Participation

While formal planning sessions were rare, organic participation within the community remained high. Respondent 2 (Local) stated, *“Tak join sangat program secara rasmi. Tapi kalau majlis buat expo, pasar malam... saya datang sokong.”* This shows that although residents may not participate in official programs, they actively support informal and community-driven activities. Similarly, Respondent 3 (Local) expressed, *“Kalau ajak, insyaAllah boleh. Kalau untuk kebaikan Teluk Intan, saya sokong.”* This demonstrates a willingness among community members to contribute when initiatives are aimed at benefiting the broader community.

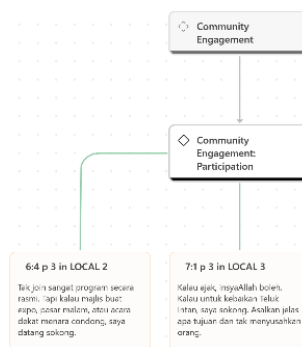


Figure 11: Network Of Participation

Governance Structures

The analysis highlighted a gap between high-level management and ground-level presence. The Checklist observation previously noted that there was *“no noticeable presence of the local council (MPTI) in the area,”* despite the street's high activity levels.

Roles of Authority

Respondent 1 (MPTI) clarified that their primary role was administrative: *“Peranan utama lebih kepada mengurus dan menyelaras projek-projek naik taraf bandar yang melibatkan jalan awam.”* This indicates that their focus is on coordination and management rather than direct engagement on the ground. From a professional perspective, it was argued that the authority’s role should evolve to include stronger technical support and monitoring. Respondent 1 (Professional) emphasized, *“Garis panduan, mekanisme kelulusan, [dan] sokongan logistik.”* They further noted, *“Penggunaan teknologi pemantauan juga penting untuk*

menilai keberkesanan intervensi.” This highlights the need for systematic oversight to ensure that street interventions remain safe, functional, and effective over time.

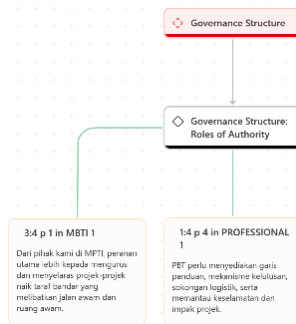


Figure 12: Network Of Roles of Authority

Technical Monitoring

Respondent 1 (MPTI) confirmed that the council's involvement is largely high-level, stating, “*Mengurus dan menyelaras projek-projek.*” This indicates that their primary role is to manage and coordinate projects rather than engage directly on-site. However, the checklist revealed a disconnect, noting that there was “*no noticeable presence of the local council (MPTI) in the area*” during the operational phase. This suggests that while projects are sanctioned administratively, they lack the on-the-ground presence required for active governance.

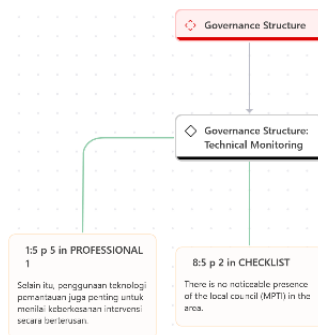


Figure 13: Network Of Technical Monitoring

Policy Frameworks

The transition of Jalan Mahrani into a permanent social space faced significant regulatory hurdles. These were identified as Bureaucracy and Heritage Constraints.

Bureaucracy & Guidelines

There was a clear consensus that current policies were not designed to accommodate tactical or temporary interventions. Respondent 1 (MPTI) admitted, “*Secara khususnya, dasar untuk urbanisme taktikal memang belum jelas sepenuhnya.*” This indicates that policies for tactical urbanism are still unclear and not fully developed. Respondent 2 (MPTI) added that the absence of specific guidelines slows the process: “*Ia jadi*

perlahan sebab setiap cadangan kena diterangkan dari awal.” They further suggested that the council should reduce bureaucracy for small-scale projects, highlighting the need for a more flexible administrative approach.

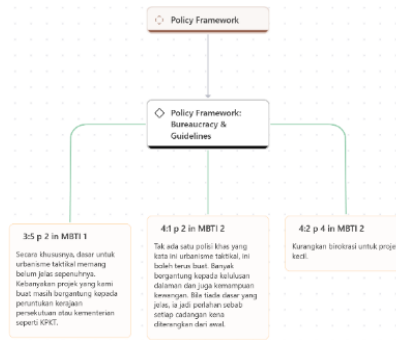


Figure 14: Network Of Bureaucracy & Guideline

Heritage Constraints

Because Jalan Mahrani is in a colonial-era zone, policy had to balance innovation with preservation. Respondent 1 (Professional) noted, *“Peraturan konservasi yang ketat... di kawasan warisan.”* This indicates that strict conservation regulations in heritage areas pose challenges for implementing new interventions. Respondent 2 (Professional) emphasized the importance of ensuring that tactical additions, such as murals or planters, *“Memastikan visual dan identiti warisan tidak terganggu.”* This underscores the need to protect the visual integrity and heritage identity of the area while introducing temporary or tactical improvements.

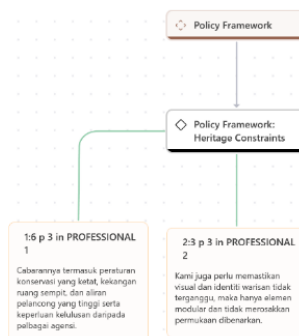


Figure 15: Network Of Heritage Constraints

Research Objectives 3: To evaluate social, cultural, and economic outcomes of tactical interventions using measurable indicators of community well-being.

The final objective measured the "success" of tactical interventions on Jalan Mahrani through the lens of social and economic vitality.

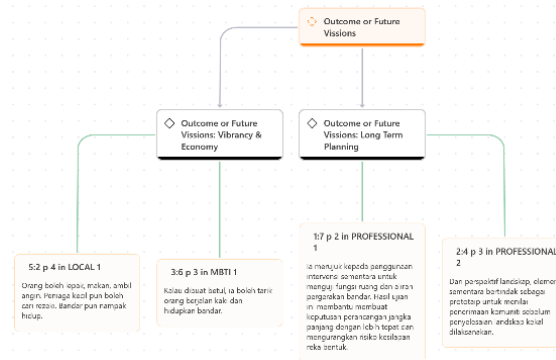


Figure 16: Network Of Outcome Of Future Visions

Vibrancy and Economy

The primary outcome observed was the revival of the street's economic life. Respondent 1 (Local) highlighted the immediate benefits: *“Orang boleh lepak, makan, ambil angin. Peniaga kecil pun boleh cari rezeki. Bandar pun nampak hidup.”* This shows that community members value opportunities for leisure, socializing, and supporting small businesses, which together enliven the street. Respondent 1 (MPTI) agreed that if managed correctly, tactical urbanism can attract foot traffic: *“Kalau dibuat betul, ia boleh tarik orang berjalan kaki dan hidupan bandar.”* This indicates that well-planned interventions can serve as a catalyst for revitalizing urban life.

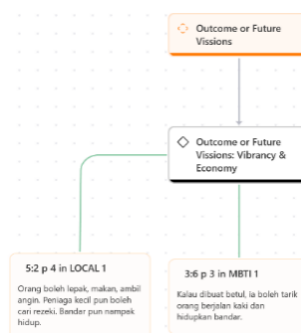


Figure 17: Network Of Vibrancy and Economy

Long-term Planning and Testing

Beyond immediate vibrancy, the interventions served as a laboratory for future planning. Professional respondents viewed these short-term actions as essential prototypes. Respondent 1 (Professional) stated, *“Menguji fungsi ruang... membantu membuat keputusan perancangan jangka panjang.”* This indicates that temporary interventions allow planners to test space functionality and inform long-term planning decisions. Respondent 2 (Professional) added that these tactics acted as *“Prototaip untuk menilai penerimaan*

komuniti,”. This highlight that such short-term measures help ensure that permanent changes to Jalan Mahrani are well-received by daily street users.

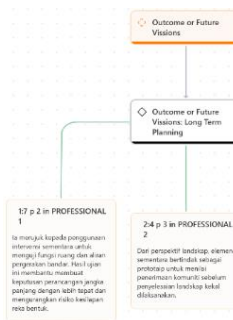


Figure 18: Network Of Long-term Planning and Testing

RECOMMENDATION

The primary physical intervention for Jalan Maharani must address the critical infrastructure gaps that currently hinder the street's social potential. To mitigate the lack of security identified in the field, it is recommended that the Majlis Perbandaran Teluk Intan (MPTI) implement a smart lighting strategy, focusing specifically on abandoned back lanes and pedestrian crossings. The installation of solar-powered LED lamps would provide necessary visibility after dark, addressing the community's concerns regarding safety and illicit activities. Furthermore, to alleviate the dominance of hardscape, the street should incorporate green infrastructure through modular, permeable planter boxes. These elements would not only provide a vegetated buffer from traffic but also act as a tactical tool for managing heat and flood risks. Building on the success of existing pop-up stalls, the introduction of modular "parklets" temporary seating platforms placed in underutilized parking bays would provide the street furniture necessary to encourage social interaction and longer pedestrian stays.

From a governance and policy perspective, the research highlights a significant need for administrative reform to support the rapid nature of tactical urbanism. It is recommended that MPTI establish a specialized, fast-track "Tactical Urbanism Permit" to bypass the slow-moving bureaucracy traditionally associated with permanent urban upgrades. This framework would allow for short-term pilot projects, such as weekend pedestrianization or creative murals, to be approved and tested with minimal red tape. Furthermore, formalizing the authority's presence is vital; the council should transition from a passive administrative role to an active "Place Management" model. This involves appointing dedicated officers to monitor the site and utilize technical monitoring tools such as pedestrian flow sensors and behavioral mapping to evaluate the success of interventions in real-time. By using these data-driven results, the council can make informed decisions on which temporary elements should be transitioned into permanent urban features.

Finally, the sustainability of Jalan Maharani as a social hub depends on deep-rooted community integration and formal institutional support from the local authority. The study recommends the establishment of a Local Street Committee operating under the Majlis Perbandaran Teluk Intan (MPTI) framework. This collaborative model ensures that business owners and residents are given a formal role in the curation and

maintenance of tactical spaces, directly supported by MPTI's urban management and licensing departments.

By leveraging the strong sense of ownership and user diversity already observed on-site, this partnership ensures that the street remains a shared sanctuary that honors Teluk Intan's multicultural heritage while meeting modern safety standards. To boost the local economy, tactical interventions should be coordinated with MPTI to support mixed-use activities, such as night markets or cultural festivals, utilizing temporary infrastructure to draw in tourists and residents alike. By adopting these long-term strategies in collaboration with the council, Jalan Maharani can effectively transition from a functional morning trading post into a sustainable, 24-hour pedestrian hub that is truly supportive of the community's social and psychological well-being.

LIMITATION

In conducting this research, several limitations were encountered that impacted the scope and execution of the data collection process. One of the primary challenges was the physical and environmental barriers faced during the interview phase with professional respondents and local authorities. The study area and respondent locations were significantly affected by heavy rainfall and seasonal flooding (*banjir*), which created hazardous travel conditions and made reaching interview venues difficult. This environmental constraint required constant rescheduling and hindered the ability to conduct more extensive face-to-face sessions, which are often vital for capturing nuanced qualitative insights from technical experts.

Furthermore, the study was constrained by a very strict temporal framework, as the entire data collection phase was limited to a three-week duration. This short window restricted the number of observation cycles that could be performed on Jalan Maharani and limited the total number of participants that could be recruited for the semi-structured interviews. For a qualitative study focusing on urban dynamics, a longer timeframe would typically allow for a more comprehensive longitudinal view of how the street is used during different times of the month or during special cultural events.

As student researchers, there were also inherent limitations regarding resource allocation and institutional access. Unlike large-scale professional urban audits, this study was conducted with a limited budget, which restricted the use of advanced technical monitoring equipment such as high-precision pedestrian sensors or thermal mapping drones. Additionally, the researchers faced challenges in navigating complex bureaucratic channels within local government agencies to obtain internal policy documents or historical planning records. These constraints mean the findings represent a specific "snapshot" in time rather than an exhaustive urban analysis, highlighting the need for future research that is supported by greater institutional collaboration and extended field durations.

CONCLUSIONS

The primary aim of this research was to explore how tactical urbanism can be applied as a landscape strategy to activate streets and public spaces at Jalan Mahrani, Teluk Intan. By focusing on the intersection of design features, community involvement, and governance mechanisms, the findings provided a clear understanding of how incremental, low-cost interventions can transform a historically significant but

underutilized arterial road into a vibrant social hub. Through a qualitative lens, this study demonstrated that tactical urbanism acts as a bridge between the street's colonial heritage and the modern need for walkable, community-centric urban environments.

The results suggested that the success of Jalan Mahrani as a social space depended on a "test-and-refine" restorative journey. This process was initiated by physical interventions such as pop-up stalls and modular street furniture, which successfully activated the street's social vitality and supported local economies. The data confirmed that while the street already possessed high user diversity ranging from youth to the elderly its full potential was hindered by critical gaps in safety, night lighting, and green infrastructure. The lived experiences of the participants highlighted that tactical elements are not merely aesthetic additions; they are essential tools for humanizing the hardscape and providing the psychological security necessary for social interaction.

Another key finding was the critical role of governance and policy frameworks in sustaining these transformations. The research identified a significant disconnect between the high levels of organic community participation and the current "bureaucratic red tape" within the local authority (MPTI). While residents and business owners expressed a strong sense of ownership and a willingness to maintain the space, the lack of clear guidelines for temporary interventions and the absence of technical monitoring remained major barriers. The study proved that for Jalan Mahrani to thrive, policy must evolve to be more flexible, allowing for small-scale, rapid-response projects that bypass traditional, slow-moving master planning processes.

This study also validated the importance of a qualitative approach and the use of ATLAS.ti 24 in urban landscape research. While the Site Observation Checklist identified physical deficiencies, it was the semi-structured interviews that uncovered the deep-seated desire for "community belonging" and the specific regulatory hurdles faced by planners. These personal insights and professional critiques provided a level of detail that numerical data alone could not achieve, particularly regarding the delicate balance between heritage conservation and modern tactical interventions.

To sum up, the revitalization of Jalan Mahrani through tactical urbanism is far more than a design exercise; it is a strategy for social and economic resilience. By addressing the identified gaps in connectivity and safety through a collaborative governance model, designers and policymakers can ensure that Teluk Intan's streets are not just transit corridors but are "living rooms" that support the well-being of the multicultural community. This research serves as a prototype for how other historic Malaysian towns can utilize short-term actions to foster long-term urban change.

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Salama, A. H., Wanas, A., & Abdel-Moneim, N. M. (2024). Transforming Cairo's downtown with tactical urbanism: Translating informal activities into formal enhancements for a thriving urban life. *Ain Shams Engineering Journal*. DOI: 10.1016/j.asej.2023.102504

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