

Repurposed Neglected Heritage Building Interior Architecture for Commercialisation: Issues and Challenges

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ARTICLE INFO

Article history:

Received 18 December 2024

Revised 25 March 2024

Accepted 23 June 2025

Online first

Published 31 July 2025

Keywords:

Adaptive Reuse

Neglected Heritage Building

Commercialisation

Interior Architecture

DOI:

10.24191/bej.v22iSI.5458

ABSTRACT

This research explores the significance of heritage in conserving cultural identity, focusing on neglected heritage buildings in Malaysia, particularly Istana Bandar. Despite their deterioration, these buildings hold historical, cultural, and artistic value. Adaptive reuse, a key concept in interior architecture, involves repurposing historic buildings while preserving their structural, environmental, aesthetic, contextual, and functional integrity. The aim of this research is to investigate the possibilities of adaptive reuse approaches to protect neglected heritage buildings in Malaysia, such as Istana Bandar in Jugra, from deindustrialisation, suburbanisation, and population shifts. The study highlights several critical challenges and issues the adaptive reuse, including maintaining authenticity, high restoration costs, economic viability, balancing preservation with modernisation, sourcing replacement materials, and a shortage of skilled heritage conservation workers. Through a comparative analysis of six (6) heritage buildings, including the successful adaptive reuse of Taj Falaknuma Palace, the study identifies effective strategies such as public-private partnerships, sustainable funding mechanisms, and community involvement in conservation efforts. Findings reveal that while commercialisation can generate revenue for maintenance and preservation, it must be carefully managed to ensure cultural sustainability and prevent heritage sites from losing their authenticity. By demonstrating how interior architecture can transform neglected heritage buildings into thriving spaces, this research provides valuable insights into adaptive reuse as a viable solution for heritage conservation in contemporary contexts.

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<https://doi.org/10.24191/bej.v22iSI.5458>

INTRODUCTION

Heritage buildings are historical artifacts that should be preserved for future generations due to their unique aesthetic and cultural value. Adaptive reuse has been implemented to revitalise neglected heritage buildings for commercialisation (Rani et al., 2017). The government strengthened heritage protection by enacting Act 645 in 2006, replacing the Antiquities Act of 1976. This new law broadened the criteria for gazetting heritage properties, including age, historical significance, design, aesthetic value, and technological advancements (Lim, 2024). However, while Act 645 provides a legal framework for preservation, its enforcement and effectiveness in adaptive reuse remain challenging. The involvement of government agencies like Jabatan Warisan Negara (JWN) ensures that all proposed interventions align with conservation guidelines, but bureaucratic delays and inconsistent enforcement can hinder timely restoration efforts. Moreover, urban planning policies and financial support mechanisms play a crucial role in determining the success of adaptive reuse projects, influencing investment decisions and long-term maintenance strategies. Strengthening policy implementation and streamlining approval processes can enhance the effectiveness of heritage laws in balancing preservation with modernisation.

Neglected heritage buildings are historic structures that have deteriorated due to poor maintenance, insufficient finance, and insufficient conservation efforts. In Malaysia, neglected heritage buildings are those that have not received the necessary upkeep to preserve their historical relevance (Shukri et al., 2020). Deindustrialisation, suburbanisation and population shifts have led to a large number of abandoned buildings and spaces in some areas. Shifting populations, shifting markets, and fear about financial commitment have all contributed to the abandonment of these buildings, resulting in vacant places (Horne, 2014). Its abandonment may result in the loss of its information, documentation, and features owing to a change in design and materials. Whether as a result of natural disaster or human invasion, architectural heritage is continually threatened. Thus, restoration and conservation are critical steps in the life cycle of a historic site (Abd Rahim et al., 2022).

Adaptive reuse is a key field of study, research, and practice in interior architecture, which focuses on converting existing buildings into new uses while preserving and improving their structural, environmental, aesthetically, contextual, and functional features (Margareth, 2017). This research investigates how adaptive reuse can be effectively implemented in Istana Bandar to transform its interior architecture for commercial use. By doing so, the study promotes sustainability in heritage conservation, ensuring that these buildings continue to be functional and relevant in today's context.

LITERATURE REVIEW

Neglected Heritage Building

Neglected heritage buildings in Malaysia are a result of inadequate conservation efforts, lack of funding, and poor upkeep. These buildings, which have significant cultural, historical, and architectural importance, are often neglected due to urbanisation, environmental issues, and lack of proper maintenance. The lack of adequate laws and management practices in Malaysia contribute to the deterioration of these buildings, putting historical records and cultural heritage at risk (Zolkafli et al., 2019). Poor maintenance and financial constraints are the main reasons for the lack of maintenance, causing the deterioration of these buildings. Insufficient funding and insufficient maintenance protocols are also significant factors contributing to the disregard of historical structures in Malaysia (Syed Mohamad et al., 2023).

Adaptive Reuse

Adaptive reuse is a conservation technique that prevents buildings from falling into disrepair or being abandoned, while also preventing the deterioration of their fabrics (Rani et al., 2017). It involves modifying a building's capacity, function, or performance to meet changing conditions or requirements, ensuring a fresh look and proper use. This approach includes conservation, alteration, repair, maintenance, and consolidation (Wahab et al., 2016).

Adaptive reuse of heritage buildings has significant benefits for future generations, as it contributes to economically viable building usage and preserves the building's historic qualities. It is more practical and environmentally friendly than constructing a new one (1) from scratch. Repurposing old buildings can bring charm and human scale to cities and neighbourhoods, and it is cost-effective (Ariffin et al., 2020).

Historic buildings should be repurposed when their original function is no longer sustainable. The renovation of ancient buildings to new uses has been widely regarded as cost-effective (Ariffin et al., 2020). Adaptive reuse minimises costs, enhances energy efficiency, and reduces construction time. Well-managed and preserved historical buildings can minimise unoccupied buildings, provide viable business districts and job opportunities, and attract visitors (Rani et al., 2017).

There are two (2) types of adaptive reuse for heritage buildings: active and passive. Active use involves a new activity that provides enough revenue to cover restoration and maintenance expenditures in the adaptive reuse program, such as hospitality (restaurants, hotels) and commercial (shops and other retail businesses). Passive use does not generate enough revenue to meet the restoration and maintenance cost but provides social advantages to the community, such as libraries, museums, and welfare housing (Rani et al., 2017).

The adaptive reuse process flowchart outlines a systematic approach to repurposing historic buildings while maintaining their cultural and architectural integrity. The process begins with identifying the targeted building, followed by documentation and analysis of its current state, structural condition, and local needs. A key stage involves multilateral participation, where property owners, local communities, government authorities, and heritage experts assess the feasibility of reuse through cost-benefit analysis and budget comparisons. The design phase then integrates creative interventions, ensuring minimal alterations while enhancing functionality. Key considerations such as authenticity, sustainability, and community involvement are embedded throughout the process. Finally, implementation, management, and supervision ensure that the adaptive reuse project aligns with policy regulations and long-term conservation goals, leading to a successful transformation of the historic building for contemporary use (Buckner et al., 2016).

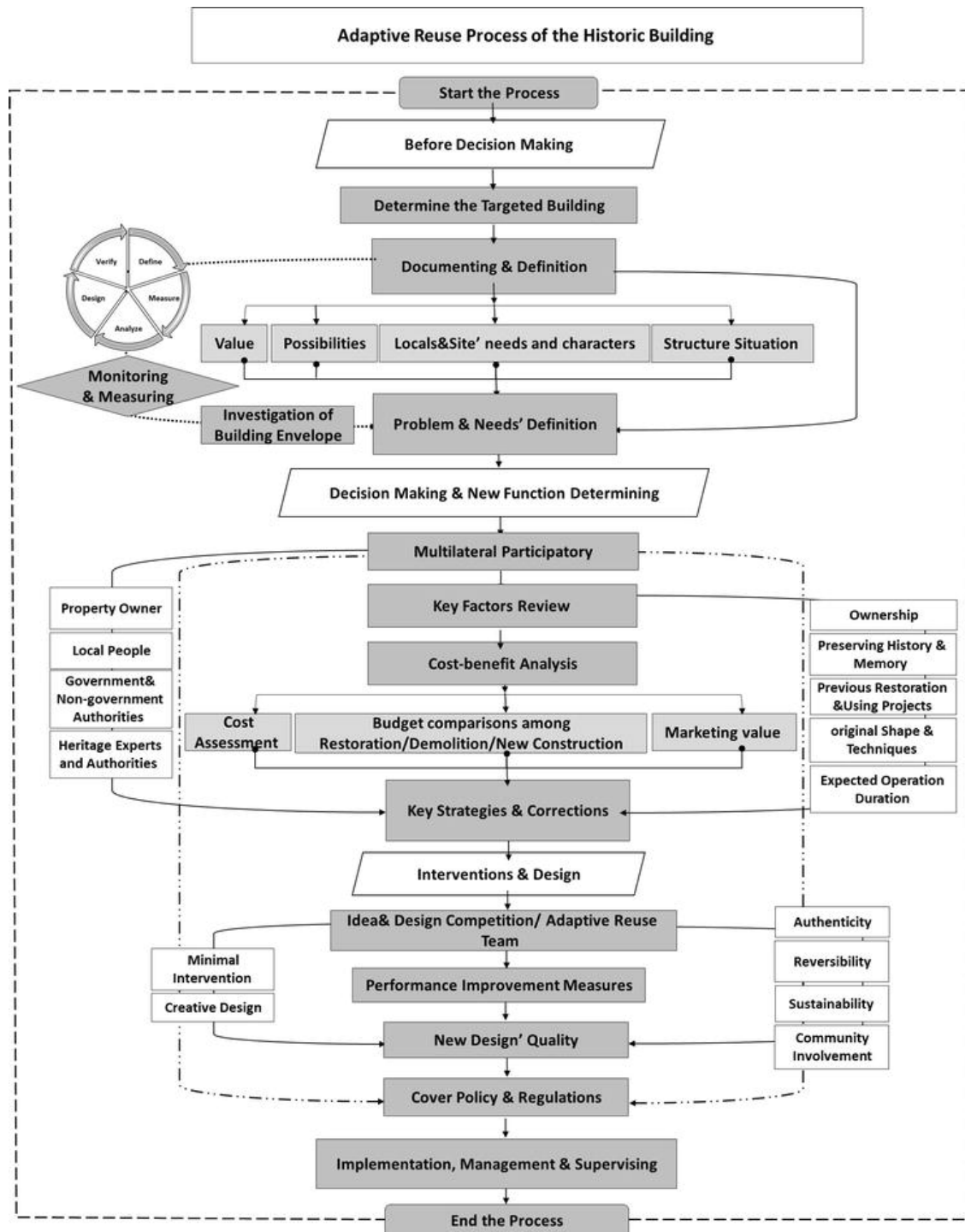


Fig. 1. Adaptive Reuse Process of Historic Building

Source: Buckner et al. (2016)

Commercialisation

The commercialisation of heritage buildings involves transforming them into commercial spaces, such as hotels, restaurants, offices, or retail spaces, to generate economic benefits while preserving their historical, cultural, and architectural integrity. This process is often seen as a way to ensure the financial viability of heritage buildings, which would otherwise go unnoticed due to the high costs of upkeep and preservation. In Malaysia, commercialisation has helped preserve these structures by providing funding for their maintenance, reinforcing the preservation and protection of heritage assets (Takva et al., 2023).

A key strategy in this approach is adaptive reuse, which enables heritage buildings to serve contemporary functions while retaining their architectural and historical essence. For example, former palaces or colonial buildings may be converted into high-end hotels or museums, integrating modern amenities while respecting the original design.

The commercialisation of heritage buildings can have a significant sociocultural impact, boosting local pride and identity by making heritage assets more accessible and relevant to the public. However, commercialisation must be approached cautiously to avoid overcommercialisation, which can lead to the loss of the site's cultural and historical importance. Strict restrictions and guidelines are required to maintain heritage sites' uniqueness and integrity in the face of commercialisation.

Interior Architecture

Interior architecture is a dynamic and evolving discipline that focuses on the adaptive reuse of existing buildings, transforming them to serve new purposes while preserving their historical, cultural, and architectural significance. This practice is not just about altering physical spaces; it is about reimagining and reinterpreting these spaces in ways that honour their past while making them functional for contemporary needs.

Adaptive reuse, as a core component of interior architecture, plays a crucial role in the sustainability of our built environment. It allows for the conservation of resources by repurposing structures that already exist, reducing the need for new construction and minimising environmental impact. This process involves a deep understanding of the building's original design and intent, as well as the cultural and historical context in which it was created. By carefully considering these factors, interior architects can develop designs that both respect the building's heritage and meet modern standards of functionality and aesthetics. For example, a heritage building repurposed into a modern workspace might retain original columns, flooring, or decorative ceilings, blending old and new in a way that respects its history.

According to Margareth (2017) highlights that the practice of interior architecture is particularly significant when dealing with buildings that possess unique architectural and cultural identities. These buildings are often seen as cultural assets that need to be preserved for future generations. Adaptive reuse, in this context, is not merely a technical or aesthetic exercise but also a cultural and ethical responsibility. The aim is to ensure that the building's legacy is maintained while adapting it to serve new functions that are relevant to contemporary society.

Furthermore, interior architecture provides an opportunity to enhance the value of these buildings, both in terms of their use and their contribution to the community. By repurposing neglected or underused structures, interior architects can breathe new life into them, making them vibrant, functional spaces that contribute to the social and economic vitality of their surroundings. The distinction between different aspects of adaptive reuse, such as its role in interior architecture and commercialisation, lies in their focus.

The commercialisation aspect emphasises the financial and economic rationale for adaptive reuse, while the interior architecture aspect focuses on design considerations and the preservation of the building's historical integrity.

Modern interior architecture is increasingly influenced by new trends and technologies that significantly impact heritage conservation, such as Building Information Modelling (BIM), 3D laser scanning, sustainable materials, and Augmented Reality (AR). These innovations enhance the ability to restore and adapt heritage buildings for modern use while preserving their historical integrity. BIM in particular, allows for the creation of detailed 3D digital models, enabling architects and conservators to meticulously plan restorations, monitor structural changes, and ensure that any interventions respect the building's original design and cultural significance.

RESEARCH METHODOLOGY

This research will be using qualitative research. Qualitative research is descriptive and interpretive, focusing on the meanings, experiences, and views of participants. Key characteristics of qualitative research include natural setting, researcher as key instrument, multiple sources of data, inductive data analysis, and participant meanings. This study focusses on the suitable method for gathering primary data on the issues and challenges of repurposing neglected heritage building interior architecture for commercialisation. In this research, content analysis is employed as the primary method to analyse the literature. Content analysis is a systematic and objective technique used to quantify and analyse the presence, meanings, and relationships of certain words, themes, or concepts within the reviewed literature. This method allows for a detailed examination of existing studies, enabling the identification of key issues, challenges, and best practices related to the research.

The data collected through these methods will be analysed using qualitative analysing techniques. Thematic analysis involves examining the coded data to identify and analyse patterns or themes that emerge. This technique helps in understanding the underlying meanings and concepts related to the adaptive reuse of Istana Bandar. Themes such as the effectiveness of past preservation efforts, the issues and challenges of repurposing neglected heritage building interior architecture for commercialisation, the impact of adaptive reuse on the building's interior architecture, and the socio-cultural effects of commercialisation are explored in depth. Thematic analysis allows for the integration of different data sources, providing a comprehensive view of the research problem.

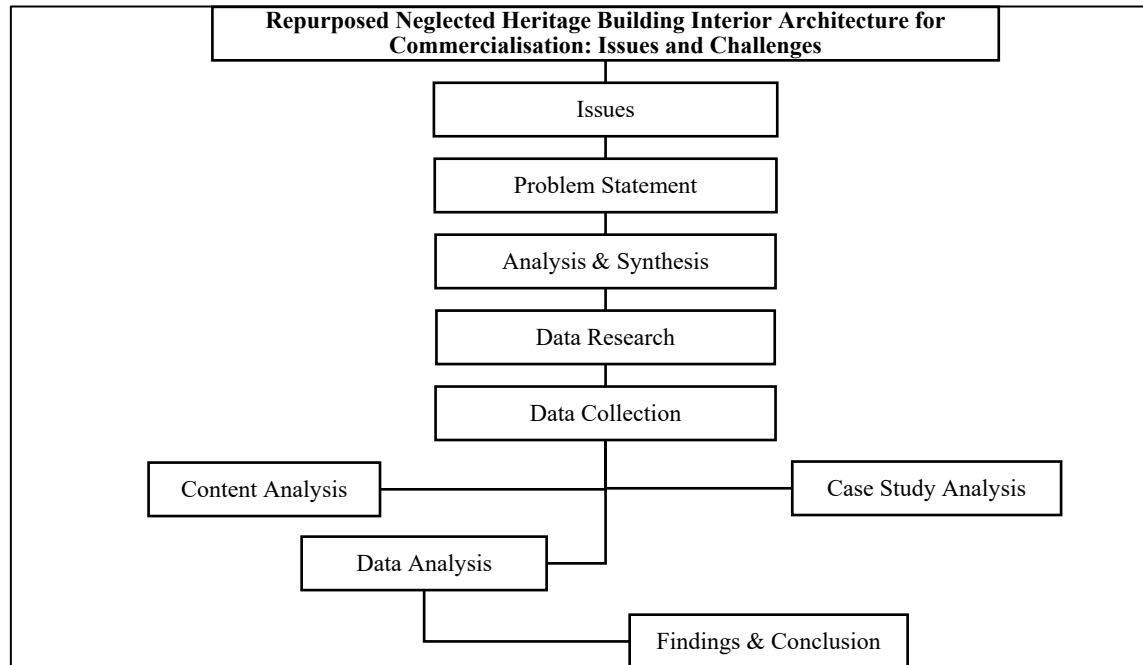


Fig. 2. Research Methodology Framework

Source: Authors (2024)

Case Study: Istana Bandar

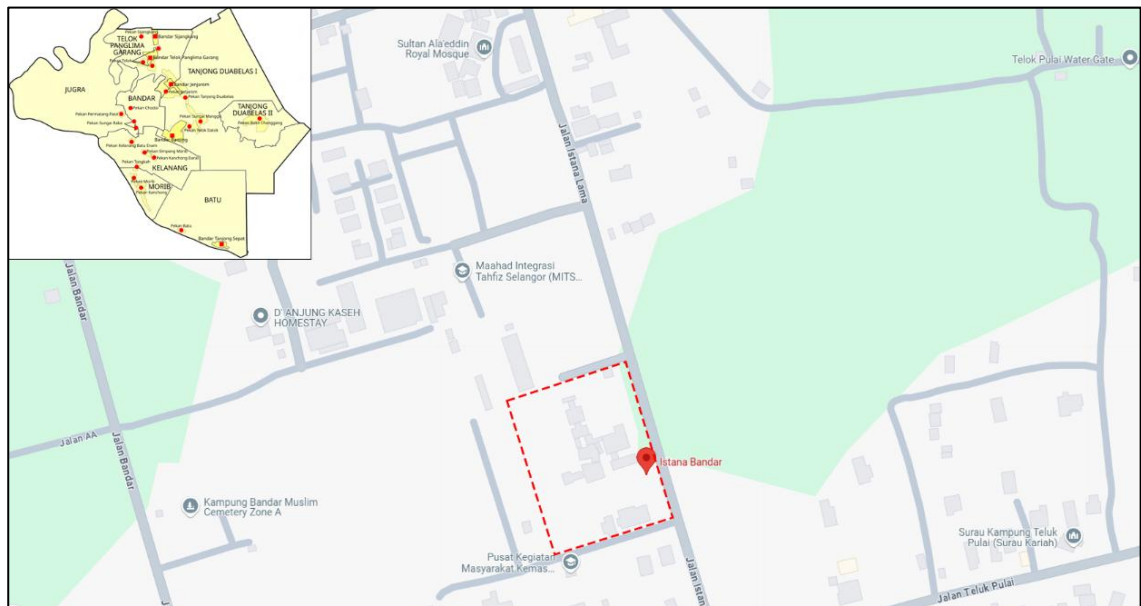


Fig. 3. Site Plan of Istana Bandar

Source: Authors (2024)

The case study that was chosen is Istana Bandar. Istana Sultan Alaeddin commonly known as Istana Bandar, was established in 1899 near Bandar Mosque, approximately 15 km from Banting. It is in Kuala Langat district and covers 12.96 acres. Istana Bandar was originally constructed around the end of the 19th century and completed about 1905. Its custodian was the late Sultan Alaeddin Sulaiman Shah (1865-1938), who selected a location near the existing road and river (PADAT, 2022).

Istana Sultan Alaeddin is a unique type of architecture not only because of its historical significance, but also because of its peculiar building shape, which displays a strong link between elegance of the governing components and the architectural design. It combines features of colonial and native architecture. The design is suited to the local area by incorporating contemporary materials and technology. It is regarded as one (1) of the most renowned architectural heritages in the region (PADAT, 2022).

Sultan Alaeddin governed from the palace for 35 years until dying in 1938, leaving the Bandar Palace unoccupied. In 1980, the palace was listed as a historical monument and historical site by the Antiquities Act 1976. It was first transformed into the District Handcraft Centre, but due to lack of interest, it was closed. The Selangor State Government refurbished the palace in 1990 after it was discovered to be in disrepair. The Selangor Islamic Religious Department transformed the palace into the Quran Memorisation Centre in 2001; however, it was evacuated again in 2006. The National Heritage Department began implementing the building conservation project in December 2008 until mid-2009 after conducting a preliminary study in 2007 and discovering that this building needs to be repaired and restored for the sake of history and heritage for the future generations to see. Figure 4 and Figure 5 show how Istana Bandar had changed over the years.



Fig. 4. (left) Istana Bandar (Year: 1910); (right) Istana Bandar (Year: 1990)

Source: Google Image (2024)



Fig. 5. (left) Istana Bandar (Year: 2009); (right) Istana Bandar (Year: 2023)

Source: (left) Google Image (2024); (right) Authors (2023)

Istana Bandar, Jugra, was chosen as the case study due to its rich historical and architectural significance, reflecting Malay, Islamic, Chinese, and European influences. Despite being adaptively reused, poor management has led to its neglect, raising concerns about authenticity, maintenance, and economic viability. Its revitalisation holds potential for boosting local tourism and socio-economic growth, but improper commercialisation could threaten its heritage value. As a designated heritage site under Jabatan Warisan Negara, its conservation challenges highlight the need for effective policies and sustainable adaptive reuse strategies, making it a crucial subject for this research.

Comparative Case Studies

The case study has been selected based on its relevance as an example of a neglected palace that has undergone transformation for commercial purposes. This comparative case study examines six (6) prominent examples of heritage buildings transformed into commercial venues, offering insights into the processes, challenges, and outcomes of such adaptations. The adaptive reuse of these heritage buildings showcases a successful model of sustainable heritage management that can be replicated in other contexts to ensure the survival and continued relevance of historical structures. The case studies will analyse and compare the state of the buildings before and after commercialisation, as well as the effects of commercialisation.

This study explores the adaptive reuse of heritage buildings for commercial purposes, focusing on six (6) prominent examples. The Taj Falaknuma Palace in Hyderabad, India, the Catherine Palace in Tsarskoye Selo, Russia, the Château de Vaux-le-Vicomte in Maincy, France, the Château de la Bourdaisière in Montlouis-sur-Loire, France, the Pousada de Estoi in Algarve, Portugal, and the Kasteel de Wittenburg in Wassenaar, Netherlands, are examples of these buildings.

These buildings have undergone transformations that preserve their cultural value while repurposing them for contemporary uses like luxury hotels, event venues, and cultural spaces. The process of commercialising these buildings involves a delicate balance between maintaining historical integrity and integrating modern amenities to attract and serve today's clientele. These transformations not only contribute to the local economy but also ensure the survival and relevance of historical structures.

Table 1. Comparative Case Studies

Building	Before Commercialisation	After Commercialisation	Effects After Commercialisation
Taj Falaknuma Palace, Hyderabad, India	A royal residence	Transformed into a luxury hotel	Boost in tourism, preservation of cultural heritage and economic benefits to the local community through job creation & increased tourist footfall.
Catherine Palace, Tsarskoye Selo, Russia	A Rococo palace	Functions primarily as a museum but also hosts cultural events.	Enhanced cultural engagement, increased visitor numbers, and financial stability for ongoing conservation through event hosting.
Château de Vaux-le-Vicomte, Maincy, France	A palace/ private residence	Operates as a cultural venue, hosting events, tours, and film shoots	Preservation of the château, educational programs, and a significant increase in public awareness and appreciation of historical architecture.
Château de la Bourdaisière, Montlouis-sur-Loire, France	A Renaissance château	Converted into a boutique hotel with a focus on heritage tourism.	Increased local tourism, economic revitalisation, and preservation of historical elements.

Pousada de Estoi (Palácio de Estoi), Algarve, Portugal	A private palace.	Transformed into a luxury hotel	Boost in tourism, preservation of the building, and increased local employment.
Kasteel de Wittenburg, Wassenaar, Netherlands	A palace/ private residence	Functions as an event venue and hotel.	Economic benefits from events and tourism, and sustained maintenance of the historical site.

Source: Authors (2024)



Fig. 6. (left) Taj Falaknuma Palace, Hyderabad, India (Year: 1900); (right) Taj Falaknuma Palace, Hyderabad, India (Year: 2013)

Source: Google Image (2024)

Ultimately, the combination of content analysis, thematic analysis, and comparative case studies allows this research to develop well-informed, evidence-based strategies for repurposing Istana Bandar. These strategies aim to address both technical challenges and broader socio-economic impacts, ensuring that the building's heritage is preserved while contributing to the local economy through commercialisation.

ISSUES

The issues surrounding the adaptive reuse of heritage buildings stem from a combination of historical, architectural, and economic factors, as identified through literature review and the case study of Istana Bandar, Jugra. Key concerns include the loss of authenticity due to improper modifications, the need for consistent and appropriate maintenance, and the economic viability of repurposing these buildings for commercial use. These issues highlight the critical need for strategic planning to ensure that heritage buildings retain their historical significance while remaining functional and financially sustainable.

Authenticity

Authenticity encompasses more than only the physical restoration of a building, but also the emotions, memories, and feelings associated with its preservation. Authenticity is not a simple concept. Every aspect of a site's development is unique and reflects its time period. Preserving cultural heritage in all its forms and historical periods is crucial for recognising its significance. Heritage property conservation should fulfil the authenticity criteria in terms of design, material, workmanship, and setting. Design and material are the most authentic criteria for preserving heritage buildings. The building's design and materials, such as architecture styles and methods of construction, hold significant importance as they reflect its history. These original designs and materials provided traces of knowledge that has vanished over time, concepts, and the golden era of heritage buildings (Harun, 2011).

Previous research has explored how improper conservation of heritage buildings reduces their authenticity. Owners of buildings reuse and alter many types of structures without sufficient planning. There are still numerous buildings that have been adaptively repurposed without in accordance with the guidelines, resulting in the loss of authenticity and historical significance. According to recent studies, the majority of the walls in adaptive reuse of heritage buildings lose their material and architectural identity. In brief, it shown that a lack of authenticity in heritage buildings is a severe issue that must be addressed correctly owing to the negative consequences on the heritage building's worth as well as its environmental significance (Hasan et al., 2019).

Maintenance

Maintenance of repurposed neglected heritage buildings for commercial use involves a critical balance between preserving historical integrity and ensuring the building's functionality. Maintenance, in this context, is defined as the ongoing process of repairing and sustaining the structure to prevent deterioration and extend its lifespan. This includes regular inspections, repairs, and the adaptation of the building to its new commercial role while maintaining its heritage value. One (1) of the primary goals of maintenance is to prevent damage before it occurs, ensuring that the building remains in excellent condition. This proactive approach involves routine checks and preventive measures, such as treating materials susceptible to decay and ensuring proper water drainage to avoid structural issues. The emphasis is on maintaining the building's original features, using appropriate materials and techniques that align with its historical context (Zainal Abidin et al., 2022).

Effective maintenance is crucial for the long-term viability of heritage buildings repurposed for commercial use. By addressing these issues through strategic planning and regular upkeep, it is possible to preserve the building's historical significance while adapting it for contemporary needs.

Economic Vitality and Diversity

The increasing vacancy rates of older and historic buildings as newer constructions are occupied present significant challenges that impact both the real estate market and the preservation of cultural heritage. As more historic buildings become vacant, their marketability and value diminish, making it imperative to explore adaptive reuse as a viable strategy for their revitalisation. However, several issues complicate this process. An increase in vacancy rates emphasises the necessity of restoring these buildings (Mohd Abdullah et al., 2020).

One (1) of the primary challenges is the influence of location and the availability of modern amenities on the market price of these buildings. Historic properties in less desirable locations or those lacking access to essential services may struggle to attract investment, leading to prolonged vacancies and further deterioration. This situation highlights the critical need for financial mechanisms, such as bank financing, investment facilities, and government subsidies, to make adaptive reuse projects more attractive and feasible. Without these financial supports, the economic viability of preserving historic buildings remains uncertain, potentially leading to their neglect and eventual loss (Mohd Abdullah et al., 2020).

Furthermore, the intrinsic value of historic buildings is often tied to their existing fabric—the materials, architecture, and historical elements that define their character. While preserving these features can result in significant cost savings, the challenge lies in balancing the retention of the building's historical integrity with the need for modernisation. The adaptation of these buildings to new uses without compromising their cultural significance requires careful planning and substantial expertise, which can be both time-consuming and costly (Mohd Abdullah et al., 2020).

CHALLENGES

In addition to the identified issues, several challenges hinder the successful conservation and adaptation of heritage buildings. The balance between preservation and modernisation presents a constant struggle, as adapting these structures for contemporary use often risks compromising their historical integrity. Other pressing challenges include the difficulty in sourcing appropriate replacement materials and the shortage of skilled workers specialised in heritage conservation. These obstacles complicate conservation efforts and require innovative solutions to ensure that heritage buildings can be preserved and repurposed effectively.

Preservation versus Modernisation

Repurposing neglected heritage buildings often involves navigating the delicate balance between preserving historical authenticity and adapting the space for modern commercial use. This challenge is a central issue in architectural conservation, where maintaining a building's historical and cultural significance can sometimes conflict with the practical demands of contemporary functionality.

One (1) of the key challenges in repurposing heritage buildings is retaining their historical integrity while making them suitable for modern purposes. While some physical alterations were carefully planned to maintain the buildings' architectural qualities, others were rushed, raising worries about the area's authenticity and history. This emphasises the significance of maintaining a balance between the economic benefits of adaptive reuse and the need for thorough restoration and preservation to protect the area's authenticity and identity (Mohd Abdullah et al., 2020).

Building adaptation without concern for the local community and its sense of place may be insensitive and harmful, particularly if the main objective is tourism. As a result, some places have lost their local character and soul. Although tourism-led adaptive reuse might assist the historic area or town by stimulating the local economy and upgrading infrastructure, it can also have negative consequences on the environment and people (Mohd Abdullah et al., 2020).

The rapid development of Malaysian cities today imposes further pressure on the building industry to keep to modern designs that are becoming the norm for global growth and advancement (Said et al., 2013). In this perspective, conservation is viewed as a strategy of protecting heritage from both natural and human threats but simultaneously acknowledging the necessity of modernisation. Preservation of the heritage building can help to mitigate the impact of development. However, it is critical not only to evaluate how changes in the look, construction, and function of buildings affect their heritage values, but also to comprehend how such changes affect their importance. Understanding how locals view the effects of repurposed buildings is equally essential (Man, 2023).

Difficulty Acquiring Replacement Materials

A significant challenge in the conservation of historic buildings is the difficulty in sourcing appropriate replacement materials. As conservation projects often involve repairing or replacing parts of a building with materials that match the original as closely as possible, the limited availability of these materials can pose substantial obstacles (Fauzi & Abdul Ghani, 2022).

Historic buildings are typically constructed with materials and techniques that may no longer be widely available or produced. For instance, traditional building materials such as specific types of stone, timber, or brick may not be manufactured in the same way today, making it challenging to find exact matches for

repairs. Contractors and conservators often face difficulties in obtaining these replacement materials, leading to potential compromises in the authenticity and integrity of the restoration work.

Moreover, the limited availability of spare supplies can lead to increased costs and extended project timelines (Fauzi & Abdul Ghani, 2022). When replacement materials are hard to source, contractors may need to resort to custom fabrications or alternative materials that do not perfectly match the original, potentially affecting the building's historical accuracy. These difficulties are compounded by the fact that conservation projects often have strict guidelines to ensure that any repairs or replacements are done in a way that preserves the building's historical significance.

In some cases, the scarcity of appropriate materials can also lead to delays in the project, as time is spent searching for suitable options or waiting for custom materials to be produced. This not only impacts the project's budget but also risks further deterioration of the building if repairs are postponed (Fauzi & Abdul Ghani, 2022).

Shortage of Skilled Workers for Heritage Conservation

The conservation of heritage buildings requires a high level of expertise and specialised skills, particularly in the areas of traditional construction techniques, material preservation, and building diagnostics. However, a growing concern in the field is the shortage of skilled labourers and technical experts equipped to handle these tasks. This shortage has significant implications for the maintenance and preservation of heritage structures, as the complexity of these projects demands a deep understanding of both historical construction methods and modern conservation techniques (Harun, 2011).

One (1) of the primary challenges posed by this skills shortage is the difficulty in performing accurate building defect diagnostics, which are essential in identifying and addressing issues before they cause significant damage. Heritage buildings often require a nuanced approach to diagnostics, as their age, materials, and construction techniques differ vastly from modern structures. Without the necessary expertise, the risk of misdiagnosis or inadequate treatment increases, potentially leading to further deterioration rather than preservation. Moreover, the conservation process involves not only diagnosing issues but also selecting appropriate materials and techniques for repair and maintenance. The use of modern materials or methods that are incompatible with the original construction can compromise the building's historical integrity.

Additionally, conservators must navigate the complexities of using traditional methods in a modern context, often working with outdated tools and materials that require meticulous handling. The pressure to maintain authenticity while ensuring the building's functionality adds another layer of difficulty to their role. The conservator's ability to balance these demands is crucial to the success of the project and the preservation of the building's historical value. Our country still needs technical specialists and competent labourers to carry out heritage urban conservation projects. Furthermore, there is a shortage of expertise in heritage city management or tourism management (Fauzi & Abdul Ghani, 2022).

DISCUSSION

The adaptive reuse of neglected heritage buildings, such as Istana Bandar, presents both opportunities and challenges that are critical for the preservation of cultural heritage and the revitalisation of historical structures for contemporary use. This discussion explores the complex interplay between preservation,

modernisation, economic viability, and the broader implications of repurposing heritage buildings for commercial purposes.

A key challenge in the adaptive reuse of heritage buildings is striking a balance between preserving historical authenticity and meeting modern functional requirements. Istana Bandar, like many other heritage sites, embodies significant cultural and historical values that must be safeguarded. However, the pressure to modernise and repurpose these buildings for commercial use can sometimes lead to compromises that detract from their original character and significance. The integration of modern amenities, while necessary for the building's new role, must be carefully managed to avoid undermining its architectural integrity and cultural identity. The case studies of Istana Bandar highlight the importance of a sensitive approach to modernisation, where alterations are made with respect for the building's historical context. Successful examples from other heritage sites, such as the Taj Falaknuma Palace and the Château de Vaux-le-Vicomte, demonstrate that it is possible to achieve this balance, preserving the essence of the structure while adapting it for contemporary uses. The case studies, such as the Taj Falaknuma Palace and Château de Vaux-le-Vicomte, were selected due to their relevance as examples of neglected palaces that were successfully transformed for commercial purposes. These examples relate directly to Istana Bandar, which also experienced neglect after its conservation in 2008–2009. By examining these cases, we can draw parallels and insights for the adaptive reuse of Istana Bandar. The Taj Falaknuma Palace was transformed into a luxury hotel by the Taj Group in 2010, successfully integrating modern amenities while preserving the historic architecture and royal heritage. Similarly, the Château de Vaux-le-Vicomte was transformed into a cultural venue that hosts events, tours, and film shoots, maintaining its historical integrity while accommodating modern functions. Both examples demonstrate how adaptive reuse can strike a balance between modernisation and preservation.

The commercialisation of heritage buildings is often seen as a solution to the financial challenges of maintaining and preserving these structures. By transforming Istana Bandar into a commercially viable entity, such as a hotel or cultural venue, there is potential to generate revenue that can fund ongoing maintenance and preservation efforts. This approach not only helps to sustain the building financially but also ensures that it remains relevant and accessible to the public. However, the pursuit of economic viability must not overshadow the need for cultural preservation. Overcommercialisation poses a risk of eroding the historical and cultural significance of heritage sites, turning them into mere tourist attractions devoid of their original context and meaning. It is crucial that commercialisation strategies are aligned with strict guidelines and regulations that protect the authenticity and integrity of the heritage site. In this regard, the adaptive reuse of Istana Bandar should be guided by a framework that prioritise its cultural and historical values while allowing for sustainable economic use. A balanced framework should integrate financial incentives, public-private partnerships, and sustainable tourism to support both economic and cultural goals. Government grants, tax incentives, and conservation funds can ease financial burdens while ensuring responsible restoration. Stakeholder involvement, including local communities and heritage experts, is essential in developing commercialisation strategies that protect Istana Bandar's historical significance. Adaptive reuse must prioritise cultural values while ensuring sustainable economic use, preventing commercial success from compromising its heritage identity.

Interior architecture plays a crucial role in the adaptive reuse of heritage buildings, offering a way to transform these spaces while preserving their historical and cultural significance. The practice of interior architecture in adaptive reuse projects like Istana Bandar involves more than just aesthetic considerations; it requires a deep understanding of the building's original design, materials, and historical context. The challenge of material conservation also arises, as heritage buildings often feature materials that are difficult to source or restore. Interior architects must find ways to either source authentic materials or use modern substitutes that blend seamlessly with the original. For example, Istana Bandar may feature woodwork or stone that is no longer available, requiring architects to employ creative solutions in maintaining its historic

aesthetic. By carefully integrating modern functionality with respect for the building's heritage, interior architects can create spaces that honour the past while serving contemporary needs. The case of Istana Bandar demonstrates the potential for interior architecture to enhance the value of heritage buildings, making them vibrant and functional spaces that contribute to the social and economic vitality of their surroundings. By reimagining and repurposing neglected structures, interior architects can breathe new life into them, ensuring their continued relevance and preservation for future generations.

The adaptive reuse of heritage buildings, such as Istana Bandar, is not solely a matter of architectural and economic decisions; it is deeply influenced by government policies, regulations, and community engagement. These factors are crucial for ensuring that the preservation of cultural heritage aligns with national objectives and reflects the values of the local population. In Malaysia, heritage preservation is guided by frameworks such as the National Heritage Act 2005, which provides legal protection for heritage sites like Istana Bandar. The act outlines strict regulations concerning what changes can be made to heritage buildings, ensuring that their historical and cultural significance is preserved.

CONCLUSION

The adaptive reuse of heritage buildings like Istana Bandar offers a viable approach to preserving cultural heritage while accommodating modern needs. However, challenges such as maintaining authenticity, financial constraints, and balancing preservation with commercialisation must be carefully managed. Successful projects, like the Taj Falaknuma Palace in India, demonstrate that integrating modern functionality without compromising historical integrity can bring economic and cultural benefits. For Istana Bandar, collaboration between conservators, government bodies, and the local community is essential to ensure sustainable preservation. Future research could explore the role of digital technologies, such as VR and BIM, in heritage conservation to enhance documentation, planning, and adaptive reuse strategies.

ACKNOWLEDGEMENTS

This research was supported by the Postgraduate Studies, College of Built Environment, and the Master of Science in Heritage and Conservation Management (CFAP777) program. The authors also acknowledge the Urban Planning Symposium 2024 for the opportunity to present and receive feedback on this work.

CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest related to this research. This study was conducted without any personal, commercial, or financial influences that could be perceived as a conflict. There are no affiliations or financial support from any organisations that could have influenced the results or interpretation of this research.

AUTHORS' CONTRIBUTIONS

Nabilah Sa'ari was primarily responsible for the Investigation and Writing – Original Draft roles, conducting the research and drafting the manuscript. Dr. Muhammad Adam Che Yusof provided supervision, overseeing the research process, reviewing the manuscript, and offering critical suggestions for improvement throughout the study. Dr. Marina Mohd Nor contributed by assisting with the review &

editing role, providing valuable feedback on the manuscript before its submission. Together, all authors contributed to ensuring the integrity and quality of the research output.

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