

CHAPTER I

1. INTRODUCTION TO THE FIRST CHAPTER

The research aims to explore the adaptation of historic structures, focusing on Lawang Sewu, to preserve cultural heritage, stimulate economic growth, and promote sustainable development. By re-adapting historical buildings as heritage centers, there is potential to revitalize structures, attract tourists, and boost the local economy. The study will use a design research methodology to investigate existing theories and previous studies on historical building adaptation, addressing key considerations and challenges in the process.

The research also aims to design an extension building to the Lawang Sewu Building, which is a multi-purpose building in the back parking lot of the building, as an extension building for various services.

1.1. Historical background of the building

Lawang Sewu is a fascinating historical building in Semarang, Central Java, Indonesia. Here are some interesting facts about it:

1. Origins and Purpose:

Built in 1904, Lawang Sewu served as the headquarters of the Dutch East Indies Railway Company (Nederlandsch-Indische Spoorweg Maatschappij), which operated railways in Java and Sumatra.

Over the years, it also functioned as a hotel, a telegraph office, and even a hospital.

2. Unique Design:

The name "Lawang Sewu" translates to "a thousand doors" in Javanese. This nickname reflects the building's design, which features numerous doors and arcs.

Lawang Sewu boasts around 600 large windows, adding to its distinctive appearance.

3. Layout:

The complex consists of several buildings, including two main ones: Building A and Building B.

Building A faces the Tugu Muda roundabout and has two identical towers originally used for water storage.

Building B, located behind A, has three stories. The first two floors house offices, while the third floor hosts a ballroom.

A monument in front of Building A commemorates five employees killed during the Indonesian National Revolution.

4. Historical Events:

During World War II, Lawang Sewu was occupied by the Japanese, who used its basement as a prison and torture chamber.

1.2. Background of the Study (Purpose, Significance, Methodology)

1.2.1 What is the purpose of this research?

The purpose of conducting research and study on the re-adaptation, design, and reuse of the old building of Lawang Sewu in Semarang is to assess the historical, architectural, and cultural significance of the building and its surroundings. This research helps in understanding the original design, construction techniques, and materials used in the building, as well as its historical and cultural context. Additionally, the study aims to explore potential new uses for the building, taking into account its heritage value and the needs of the community. The findings of the research can inform the preservation and adaptive reuse of the building, ensuring that it retains its historical and cultural importance while serving a contemporary purpose.



Figure 1 Lawang Sewu facade

1.2.2 What is sustainable construction?

1.2.1. Choosing Lawang Sewu Building for sustainable renovation and re-adaptation?

Choosing Lawang Sewu Building for sustainable regeneration and adaptation is crucial for preserving cultural heritage and fostering sustainable development. Sustainable adaptation of historic sites, as recognized by UNESCO, enhances cultural significance and attracts tourism, stimulating economic growth (UNESCO Reference:(IUCN, 2023) Moreover, sustainable practices, advocated by organizations like the International Union for Conservation of Nature (IUCN), reduce environmental impact and promote responsible urban development(Sankaran and Chopra, 2020) Lawang Sewu's regeneration can serve as a model for harmonizing cultural preservation, economic vitality, and environmental sustainability in historic urban areas, aligning with global conservation and development goals.



Figure 2 Pictures of the rehabilitation and the driveway

1.3 TThe main objective of the research.

The thesis investigates the adaptive reconfiguration of the historic structure “Lawang Sewu” in Indonesia, with the aim of revitalizing it and transforming it into

a modern institution while preserving its historical essence and adhering to sustainable architectural principles. Submitting a design proposal for an annex in the rear parking area, which includes functions complementary to the Lawang Sewu Building.

This objective.

The objective of this project is to investigate the extent to which historic buildings can be to promote sustainability. The research and design methodology will be employed to achieve this objective.

The research phase will begin by defining the Lawang Sewu project and exploring the theories of adaptive design and sustainability. The principles, objectives, and benefits of each theory will be examined, followed by a case study analysis.

The design phase will involve an assessment of the site based on environmental and social considerations. The existing building will be documented, including original drawings and photographs(Hosseini, Stefaniec and Hosseini, 2021).

The project has commenced using the 3D modeling systems Max and Autocad to assess which parts of the building can be rehabilitated or modified in accordance with its historical character(Vardopoulos, 2019). The possibility of adding new elements or removing certain parts will also be considered. Attention will also be given to the acoustic details and the selection of sustainable materials for the of the building or specific components(Takva, ÇağatayTakva, 2023).

However, it is crucial to preserve the original character of the building and minimize interventions throughout the adaptive process.

1.4 Design research

This research aims to investigate the potential of historic buildings for Historical heritage use with a focus on promoting sustainability. To achieve this objective, a research and design methodology will be employed, incorporating principles of adaptive design and sustainability. This paper will analyze the theories, principles,

and benefits of adaptive design and sustainability in the context of historical building re-adaptation(Hosseini, Stefaniec and Hosseini, 2021). It will also formulate a comprehensive strategy for the of Lawang Sewu, a historic building in Semarang, Indonesia, considering environmental, social, and cultural factors.(Šekularac *et al.*, 2020)

1.5 Universal Design Principles in Re-adapting and Designing Historical Buildings: A Comprehensive Approach

Universal Design plays a vital role in the re-adaptation and design of historical buildings, ensuring that they are accessible and usable for all individuals. By incorporating Universal Design principles, historical buildings can be made more inclusive and welcoming to people of all ages and abilities. This can involve modifications to entrances, interior layouts, and amenities to accommodate a wide range of users. Research by (Preiser, W. F. E., & Ostroff, 2001) in "Universal Design Handbook" provides valuable insights into the application of Universal Design in architectural contexts, including historical building adaptation. Additionally, the work of (Imrie, R., & Hall, 2001) in "Inclusive Design: Designing and Developing Accessible Environments" offers comprehensive guidance on incorporating Universal Design in the built environment, which can be directly applied to historical buildings. Furthermore, the study by (Steinfeld, E., & Danford, 1999) in "The Principles of Universal Design" outlines the key principles and strategies for implementing Universal Design, which can be instrumental in the re-adaptation of historical buildings. These scientific sources collectively emphasize the significance of Universal Design in the process of re-adapting and designing historical buildings to ensure accessibility and inclusivity for all.

1.6 Scope and design limitations

The scope of the design and adaptation of Lawang Sewu includes enhancing functionality to meet modern requirements while preserving historical significance, attracting tourists, generating revenue, and promoting sustainable development.

Limitations involve the need to preserve the building's historical and cultural value, resource constraints, and expertise availability for the adaptation process. The project aims to contribute to knowledge of adaptive strategies for heritage buildings, emphasizing sustainability and continuity between past and present.

1.7 Analyze the Lawang Sewu building in terms of Corridors Input spaces Outdoor spaces Construction type Construction Corridors:

Lawang Sewu is renowned for its numerous corridors, reflecting colonial architectural styles, serving as circulation paths. The interior spaces include offices and meeting rooms with distinct features, while outdoor spaces like courtyards complement its design. Constructed in Dutch colonial style, Lawang Sewu features robust construction and ornate detailing.

1.8. Thesis Structure:

1,8,1. adaptation strategy for the old building(Lawang Sewu)

Here is a possible strategy for the process of adapting the Lawang Sewu building, while supporting the proposals with links and sources:

1.8.2. Adaptation of Historic Structures

Table 1 .Tasks for Adaptation of Historic Structure

Task	Description
1. Comprehensive Assessment	<ul style="list-style-type: none"> - Document physical features - Identify structural problems - Evaluate functional performance - Analyze historical context - Assess cultural value
2. Conservation Plan	<ul style="list-style-type: none"> - Define objectives, scope, and criteria - Select appropriate reuse function and program - Design new elements and systems - Plan implementation and management
3. Funding Acquisition	<ul style="list-style-type: none"> - Prepare budget estimate - Apply for grants or loans - Seek sponsors or partners - Mobilize resources or donations

4. Ownership and Management Structure	<ul style="list-style-type: none"> - Clarify roles and responsibilities - Form a steering committee or project team - Set up communication and monitoring system - Resolve conflicts or issues
5. Public Awareness and Participation	<ul style="list-style-type: none"> - Conduct exhibitions, tours, festivals - Inform and educate the public - Engage and consult with the local community and users - Involve volunteers and supporters - Celebrate and showcase project outcomes and impacts

This table provides a structured overview of the tasks involved in the adaptation of historic structures, covering comprehensive assessment, conservation planning, funding acquisition, ownership and management structure, and public awareness and participation.

1.8.4. Approach for the thesis

Here is a diagram that outlines the and adaptation strategy for the historic Lawang Sewu building in a professional and concise manner:

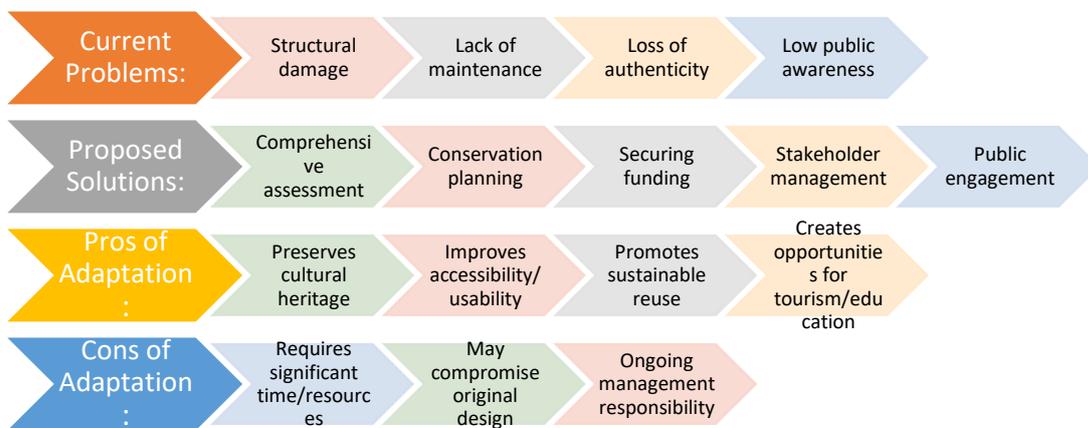


Figure 3 .Here is a diagram that outlines the adaptation strategy for the historic Lawang Sewu building in a professional and concise manner