

# e-Proceeding

# V-GO GREEN 2020<sup>29-30</sup> SEPT

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"SUSTAINABLE ENVIRONMENT, RESILIENCE AND SOCIAL WELL-BEING"

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# A PILOT SURVEY ON THE ASSESSMENT TECHNIQUE IN ACCESSING DEFECTS ON HERITAGE BUILDINGS IN MALAYSIA

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## Abstract

Malaysia is a unique country with multi-racial society and rich with multi-layered heritage buildings which have significance on the building design, architectural qualities, craftsmanship and others. In the construction industry, building defects are a common issue related to every type of building. The same goes with the heritage buildings that have more defect problems because of the age of the building. The problem of defects needs attention to ensure the sustainability of the buildings is long lasting. In recent years, its sustainability has become a relevant issue due to the general limitation of resources and unique features of cultural heritage assets. However, it is challenging to determine the heritage building current condition during inspection and this may contribute to the asset's failure in the future. The purpose of this paper is to get a clear understanding on the current condition and problems of heritage buildings with the main focus on the current assessment technique by the conservator in accessing defect problems for heritage buildings in Malaysia. It concludes that a pilot survey is necessary and useful in providing the groundwork in a research project. Therefore, a pilot survey has been conducted among experts in defects on heritage buildings who have more than 5 years of experience in heritage conservation work and are professionals in the field of heritage buildings in Malaysia. This paper is expected to provide some insights on building defects to the owners, consultants, contractors, conservators, various government agencies, heritage bodies and to all who are concerned with the value of heritage buildings in Malaysia.

**Keywords:** *pilot survey; heritage buildings; building defects, building conservation, assessment technique*

## 1.0 INTRODUCTION

In Malaysia, there are many heritage buildings that show the image of people in Malaysia in the construction industry. Heritage buildings in Malaysia also symbolize the colonization of foreign countries in the past. They also portray our country as a nation that is filled with high aesthetic identities and values. Malaysia is well-known for its great architectural legacy of traditional Malay houses, royal palaces, colonial buildings, churches, temples, mosques, monuments, railway stations, schools, and many others. Between the year 1800 and 1948, there were more than 37,000 historic buildings built throughout Malaysia which are worthy of preservation and conservation work (Talib et al., 2014). Heritage buildings have provided numerous benefits to our country in terms of economy, tourism, academic, social, local authority, and others.

However, after 1970's, several heritage buildings have been destroyed while some of the buildings have not been well-preserved by the government and the owner of the building itself (Mansor, Mydin, Ismail & Harun, 2012). Zolkafli et al., (2018) also said, heritage buildings are valuable assets for Malaysia and the society needs to appreciate and be aware of their important values that should be passed down to the future generation. There would be building defects for every building structure that had been built, especially on heritage buildings caused by many factors, such as, the age of the building, the maintenance of the building, climatic condition, and others. Defects are typically defined as a failure or shortcoming within the building's characteristic, overall performance, statutory or consumer necessities, and this may

arise in its structure, material, services or different facilities (Isa et al., 2011). To ensure the sustainability of heritage buildings in Malaysia, the defect problems on heritage buildings must be scrutinized in depth. As stated by Bakri and Mydin (2014), building defects are one of the main components of building problems that significantly need attention. They also added that, an immediate determination should be started when a building fails to perform the function as it should. While according to Zuraidi et al. (2017), to ensure that the heritage building is safe for occupancy and is always in a good condition, an appropriate inspection needs to be carried out to identify the current condition of the building and to prepare the remedial actions to the building.

## **2.0 AIM OF RESEARCH**

The aim of this research is to conduct a survey on the assessment techniques in accessing defects on heritage buildings in Malaysia, while at the same time identifying the occurrence of defects in heritage buildings in Malaysia. To make sure the aim of this research could be achieved, a pilot survey had been conducted among experts in defects on heritage buildings.

## **3.0 RESEARCH METHODOLOGY**

The method used in this research is the open-ended and closed ended questionnaire. The questionnaire was given to experts in the field of heritage buildings such as those who are from National Heritage Department (NHD), Public Works Department (PWD), George Town World Heritage Incorporated (GTWHI) and personal institutions (conservators). The questionnaire is more focused on the needs of researchers in identifying the current assessment technique used in inspection works. The results of the questionnaire were later tabulated, summarized and analyzed accordingly to the research objectives to obtain findings.

## **4.0 PILOT SURVEY ON THE ASSESSMENT TECHNIQUE IN ACCESSING DEFECT ON HERITAGE BUILDINGS IN MALAYSIA.**

To make sure the aim of this research could be achieved, a pilot survey was conducted among experts in the field of defects on heritage buildings. The criteria of the experts chosen for the pilot survey are knowledgeable people who have more than 5 years of experience in heritage conservation work and are professionals in the field of heritage buildings in Malaysia. Below are among the eight (8) questions that were addressed to the experts in the field of heritage building conservation.

Question 1: Do you realize heritage building is important?

Question 2: Have you seen any defect problems in heritage buildings?

Question 3: What types of defects that you have seen on heritage buildings?

Question 4: Do you know any methods to record the defects in heritage building?

Question 5: If yes, what type of form has been used?

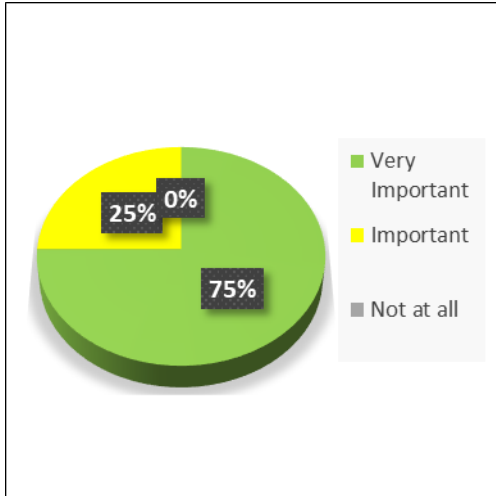
Question 6: Do you think the form is perfect enough to use for heritage buildings?

Question 7: In your opinion, are heritage buildings in Malaysia well preserved?

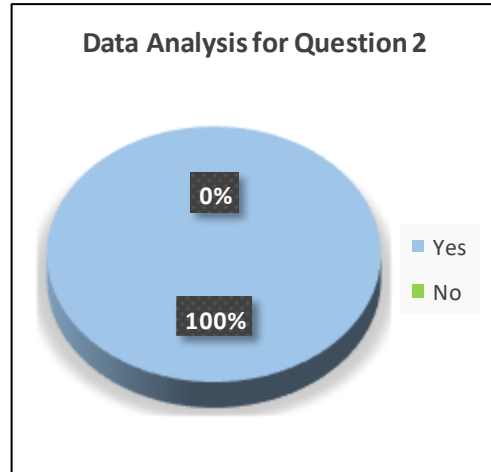
Question 8: What is the current issue on heritage buildings that you know?

## **5.0 THE ANALYSIS RESULT FOR THE PILOT SURVEY**

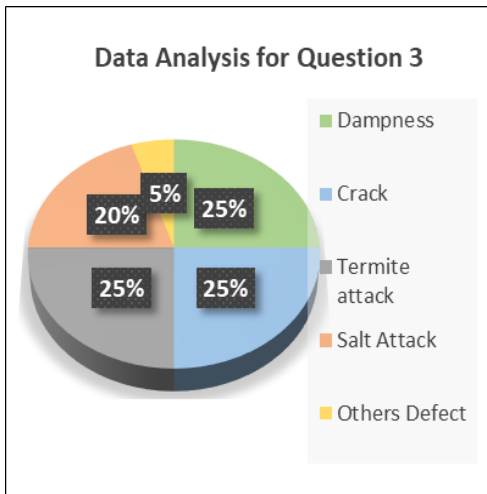
The data collected throughout the pilot survey were analysed using SPSS and summarized in the form of a pie chart as shown below:



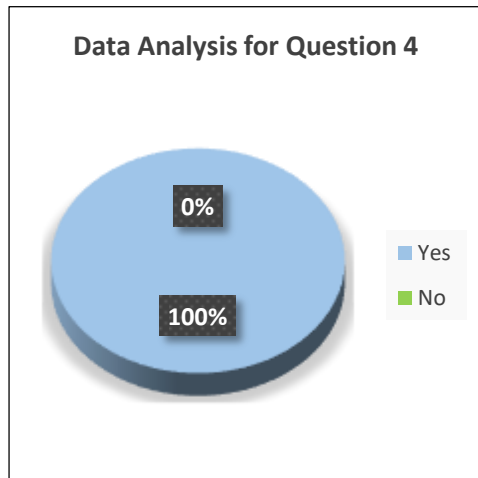
**Figure 1: Data analysis for question 1 do you realize heritage building is important?**



**Figure 2: Data analysis for question 2 have you seen any defect problems?**



**Figure 3: Data analysis for question 3 what types of defects have you seen?**



**Figure 4: Data analysis for question 4 do you know any method to record the defects in heritage buildings?**

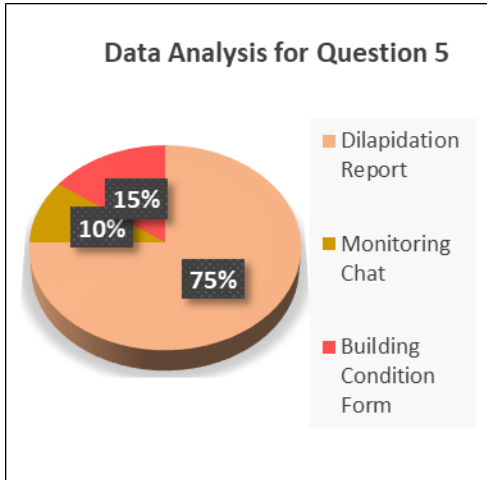


Figure 5: Data analysis for question 5 if yes, in what type of form?

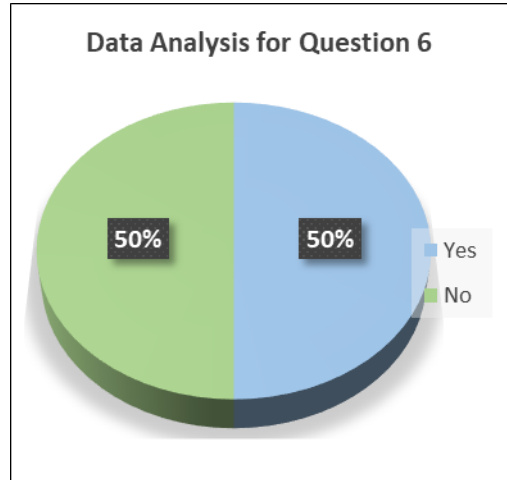


Figure 6: Analysis for question 6 do you think the form is perfect enough to use for heritage buildings?

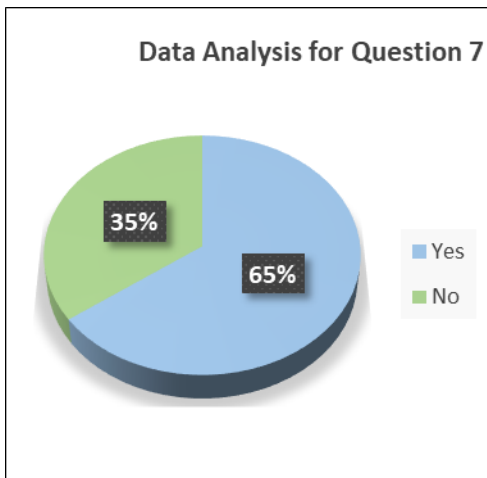


Figure 7: Data analysis for question 7 in your opinion, are heritage buildings in malaysia well preserved?

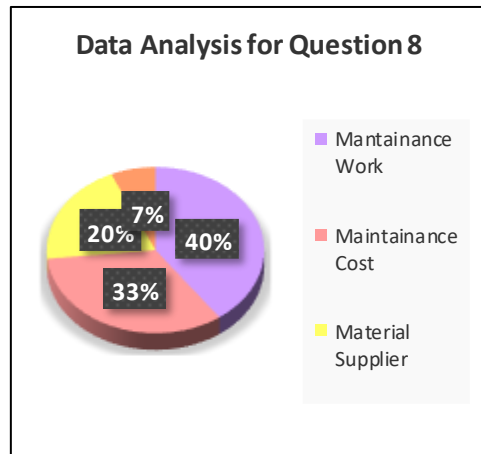


Figure 8: Data analysis for question 8 what is the current issue on heritage buildings that you know?

## 6.0 RESEARCH FINDING

Based on the responses of experts on defects of heritage buildings who are from National Heritage Department (NHD), Public Works Department (PWD), George Town World Heritage Incorporated (GTWHI) and personal institution (conservator), it can be concluded that:

1. 75% of the experts realized that heritage building is very important while the other 25% only realized it as important.
2. All the experts had seen defect problems on heritage building in Malaysia.
3. The defects mostly seen by experts on heritage buildings were dampness, cracks and termite attacks.
4. All the experts had methods to record the defects in heritage buildings.



5. 75% of the experts used a dilapidation report as a method to record the defect; 15% used building condition form and 10% used the monitoring chat method.
6. 50% of the experts were satisfied with the method currently in use while another 50% experts needed another method for defect inspection.
7. 65% agreed that heritage buildings in Malaysia are well preserved, while another 35% did not agree to this.
8. 40% of the experts said that the issue on heritage buildings was due to maintenance work, 33% said maintenance cost, 20% said because of lack of material suppliers, followed by 13% who said due to lack of knowledge about heritage.

## 7.0 CONCLUSIONS

The occurrence of defects on heritage buildings is becoming more serious because of abandoning acts and the fact that they have not been well preserved by the government. Proper management and timely maintenance can help the maintenance of buildings to last a longer time. If we do not execute the maintenance work properly and systematically, the heritage buildings will deteriorate and cannot be fully utilized as well as damaging its originality. Therefore, the awareness on the importance of preserving heritage buildings is the responsibility of every individual in society and it should not be a burden on the government alone. Without well preservation done on the heritage buildings, it might cause the buildings to destroy. Some defects that occurred on heritage buildings are not easy to be detected during the inspection process. The process of inspection is important to make sure the next process of maintenance work goes smoothly.

Malaysia faces several problems in preserving heritage buildings. Firstly, maintenance work for heritage buildings is not the same as ordinary buildings. Maintenance work for heritage buildings requires the knowledge of an expert on the design and materials used for the buildings. Lack of knowledge about heritage may affect the quality of maintenance work because not all contractors understand or have knowledge in conserving heritage buildings. Secondly, the maintenance cost needed in repairing and maintaining heritage buildings is high. This is a major problem because all the repairing work for heritage buildings requires special workers and materials that suit with the design of the building. Besides, there are also problems among the property owners that are not willing to maintain the heritage buildings on economic perspective and lack of understanding about the importance of heritage buildings. Lack of material suppliers is also one of the issues during maintenance work for heritage buildings. This is because not all suppliers can provide heritage materials and it is hard to find the same quality and design as previous buildings. The aim of this research is to observe the assessment techniques used in accessing defects on heritage buildings in Malaysia. It is hoped that by doing this pilot survey and throughout the findings of this research, it has given a clear scenario on the conditions and current problems occurring on heritage buildings in Malaysia. Therefore, the results of this research would suggest for future studies to address the improvement of skills in preservation of heritage buildings and the best method that can be used for defect inspection on heritage buildings in Malaysia.

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Tarikh : 20 Januari 2023

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*Setuju.*

*27.1.2023*

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