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Procedia Engineering 20 (2011) 415 – 424

**Procedia
Engineering**

www.elsevier.com/locate/procediaThe 2nd International Building Control Conference 2011

The Implementation of Maintenance Works for Historical Buildings – A Review on the Current Scenario

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Abstract

The conservation of historical buildings is a method on preserving structures which are historically and culturally important to the nation. Conservation involves works undertaken to preserve the condition of the building to its original state and this also includes the subsequent maintenance works. Maintenance is identified as a means on prolonging the lifespan of the historical structures. Without proper and systematic maintenance works, without doubt, the historical buildings will deteriorate and becoming dysfunctional as well as unfit to be used. This paper intends to highlight the establishment of maintenance management, the responses on the importance of maintenance works to be undertaken for historical buildings, factors governing the effectiveness of maintenance works on historical buildings and maintenance approaches, inclusive of maintenance programmed undertaken on the structural, non-structural elements as well as the services systems. The findings for this research are summarized from the responses obtained directly from the respondents employed for the management of the historical buildings. Case studies involving 20 numbers of historical buildings, of which some are already categorized under national heritage, were carried out. The methodology for this research is based on personal interviews and distribution of self-developed questionnaire which consists of 10 key topics, all developed relating to conservation of historical buildings and the current scenario on the implementation of maintenance works on these buildings.

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Selection and/or peer-review under responsibility of Universiti Teknologi MARA Perak and Institution of Surveyors Malaysia (ISM)

Keywords: Conservation, Maintenance, Historical buildings

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1.0 Introduction

All the key national and international documents, which provide guidelines for the protection of historic buildings, emphasize the pivotal role of regular systematic maintenance. For example, the Burra Charter, defines conservation as being "...All of the processes of looking after a place so as to retain its cultural significance" and goes on to state "...A principle of conservation is that the cultural significance of a place is embodied in its fabric, its setting and its contents...". Other international charters, for example the Venice Charter, the Amsterdam Charter, the New Zealand Charter and the Guidelines for the Management of World Cultural Heritage Sites, make similar points. During the formation of Society of Protected Ancient Buildings (SPAB), Morris [1] had highlighted the importance of the maintenance plays in protecting historic buildings.

Given that the nature of historical buildings, which are in some avoidable degree of degradation and decay, maintenance is the single most significant approach that can ensure the prolongation of the building's lifespan. Hamilton & Wan Salleh [2] stated that systematic management and continuous maintenance works are necessary for mitigating the decaying process that will lead to unsafe condition. Besides the benefit to the building's lifespan, the execution of the maintenance works on a building and its services system when continuously and progressively undertaken, in a long run will be profitable to the organization.

Table 1. List of heritage sites to be gazetted under National Heritage Act 2005 (Act 645)
Source: Malaysia Heritage Department [3]

No	State	Bldg	Fort	Stone	Cave	Well	Cemetery	Others	Total
1	Perlis	-	-	-	-	-	-	-	-
2	Kedah	-	1	-	-	-	-	-	1
3	Pulau Pinang	7	1	1	-	-	1	-	10
4	Perak	-	2	2	1	-	45	-	50
5	Selangor	7	3	-	-	-	2	1	13
6	W. Persekutuan	53	-	-	-	-	-	-	53
7	N. Sembilan	5	1	1	-	-	2	-	9
8	Melaka	13	2	1	-	4	8	-	28
9	Johor	2	1	-	-	-	-	-	3
10	Pahang	-	-	-	-	-	1	-	1
11	Terengganu	-	-	-	-	-	7	-	7
12	Kelantan	5	-	-	-	-	-	1	6
13	W. P. Labuan	-	-	-	-	-	-	-	-
		91	11	5	2	4	65	2	181

Based on the List of Heritage Sites to be Gazetted Under National Heritage Act 2005 [3] (Refer Table 1); it was recorded that there were about 181 numbers of heritage sites in total, which consists of building, fort, stone, cave, well, cemetery and other pre-war structures sporadically located within 13 states in

Malaysia. Out of this, only 91 are buildings. Undoubtedly, these buildings are important in portraying the historical past of the nation but given the age of the buildings at present, these structures will not be standing for too long unless proper maintenance works are carried out. The lack of proper maintenance works and identification of historical buildings may contribute to decaying of buildings thus resulting to decrement in the number of historical buildings. Rapid urbanization process is the main threat for historical buildings (e.g.) Bok House which was demolished in 14th December 2006[4].

Acknowledging the need of a systematic maintenance for historical buildings, this research therefore is seen as the vital approach to highlight and to assist the improvement on the maintenance for historical buildings within the local context. This research intends to integrate two key elements, namely, the importance and the needs of the maintenance, with the main purpose of developing a framework for a systematic maintenance programme for historical buildings in Malaysia. The main focus of this research will be concentrated on the historical buildings which have undergone the conservation works be it major or minor.

2.0 Historic Building Maintenance Scenario In Malaysia

Referring to Malaysia's Prime Minister, Datuk Seri Abdullah Ahmad Badawi during his speech in NAFAM Conference in Kuala Lumpur, billion of ringgit has been spent and wasted in repairing public buildings due to Malaysia's poor maintenance culture [5]. This is such a waste because if the defects were spotted earlier and rectified, it will not develop into big problems and cost more money. In another event, the critical issues concerning the absence of systematic maintenance works became one of the key topics discussed by the Prime Minister during his opening speech for Development of Maintenance Culture, a national seminar conducted on 23rd September 2003. He expressed his concern on the need to cultivate the culture of prioritizing and protecting the structural quality of a building amongst the Malaysian. In addition, the Prime Minister also highlighted that the understanding on the importance of maintaining the buildings should not be limited to new buildings only as the historical buildings also have their own significant value.

The absence of a proper and systematic maintenance which can be used as benchmark to carry out the maintenance works or as references has resulted to various issues. One of the recent examples on the failure to undertake proper maintenance involved the collapse of the ceilings at the Immigration Headquarters, main hall of the Ministry of Development, Entrepreneurship and Corporation in Putrajaya, and, the High Court Building in Jalan Duta, Kuala Lumpur. Another example is the leaking of the piping system at Parliament Building, as reported in the newspaper [6].

Up to present date, many historical buildings have been sacrificed just for the sake of letting way to new developments. Besides the demolition of these historical buildings, a large number of the historical buildings are also left in a bad state of decay, for instance, Kuala Lumpur Railway Station Building (KTMB) Kuala Lumpur and Majestic Hotel, both located in Kuala Lumpur [7][8]. These two buildings are part of the national heritage and these are invaluable and the loss of the buildings should be avoided. Neglectance and unawareness are two main reasons on why these historical buildings are left decayed without any proper maintenance works and care undertaken to remedy the defects occurred on the buildings.

A survey on the condition of historical buildings located within the Federal Territory of Kuala Lumpur summarized that a large number of historical buildings were found to be in a very dirty condition, turned into rubbish dumpsites, victims of vandalism, not maintained by owners [9]. There is also the issue of which some buildings were maintained on their facades only while the backsides or alleys were totally

neglected. Noted, without a proper conservation and maintenance works carried out on these buildings, in no time, these buildings will be the thing of the past, left to decay and demolished resulting to the loss of our historical evidences which can no longer be shared by the future generations.

One of the approaches to mitigate the issues as addressed by the minister for the Ministry of Culture, Arts and Heritage (KEKKWA) in 2007 [10], he expressed his concerns on the critical issues such as the demolition of historical buildings just to give way to new development and the badly decayed state of the historical buildings in Malaysia. In order to mitigate or to minimize the issues, he had addressed the plan to carry out periodic or scheduled inspections on all heritage buildings in Malaysia. The enforcement on compulsory maintenance works to be carried out on all inspected buildings will also be undertaken.

Table2. Maintenance cost and allocation from year 2004-2008.
Source: Property Maintenance Budget Unit, Ministry of Finance, Malaysia; 2008

Items	Maintenance Cost & Allocation (RM)				
	2004	2005	2006	2007	2008
Repair Works					
a Building	365,585,172.00	361,679,082.00	468,274,756.00	776,149,192.00	718,322,610.00
b Services					
a Systems	35,056,141.00	23,570,447.00	23,962,962.00	167,348,458.00	26,420,710.00
TOTAL	400,641,313.00	385,249,529.00	492,237,718.00	943,497,650.00	744,743,320.00

Table 2 show the maintenance cost and allocation from year 2004 until 2008. This allocation was provided by Ministry of Finance, Malaysia for repair works. It is shown that each year government has to increase the budget for maintenance. It is obviously shown in the table the amount that had been allocated for repair works to building structure is extensively high if compare to services systems. In principle, if maintenance works are continuously done, the budget allocation could be reduced each year, but the figure showing otherwise. In researcher opinion, this might happened due to the statement which earlier made by Pak Lah, who said that Malaysian have a very poor maintenance culture.

As stated in Clauses 38 and 39, Chapter 4 of the National Heritage Act 2005 (Act 645) [3] supervision, management and inspections on heritage sites/buildings/monuments are required but somehow these are vaguely described. The non-existence of specific statement, guidelines and references therefore is the main reason on why immediate actions should be undertaken. Indeed, there is a need to highlight the needs and the importance of conducting maintenance works on heritage or historical buildings to ensure longer lifespan of these aged buildings.

3.0 Research Methodology

A total of 20 historical buildings located within the Kuala Lumpur area were selected from the list of historical buildings obtained from Malaysia Heritage Department , and also other buildings which can be considered as historical depending on their historical, architectural and aesthetical value. The methodology comprises of the following stages and this can be referred to Figure 1.

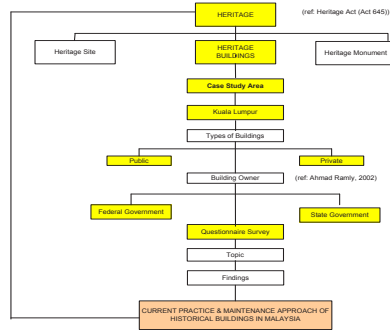


Figure 1: Research framework for the study of Maintenance of Historical Buildings in Malaysia

3.1 Research Instrument

The first method for this research involves compilation of data from published and unpublished information obtained from books, journals, articles, reports, thesis and websites. In addition, a set of self-developed structured questionnaire consisting of 10 sections of questions is prepared to assist for interview sessions with the maintenance management of historical buildings, authorities and other responsible parties which used as part of primary data sources. The purpose of this instrument is to obtain information from primary sources, directly from the respondents. Accuracy of information and findings is what expected from this instrument. Other than this, visual observation is also undertaken as secondary sources. Information such as external factors can be identified from visual observation.

3.2 Research Samples

The selection of the research samples is based on the information obtained from related organizations involving with the maintenance management of historical buildings in Malaysia. Each sample is selected based on the status of the building itself which is categorized as historical building and have undergone the conservation and preservation works.

3.3 Criteria for the selection of respondents

The main criteria for the selection of respondents are the respondents must be directly involved with the maintenance works or responsible for overseeing the execution of maintenance works. The respondents are classified into two categories, namely, the management level and the technical staffs.

4.0 Findings and Discussions

4.1 Demographic Profile of Respondents

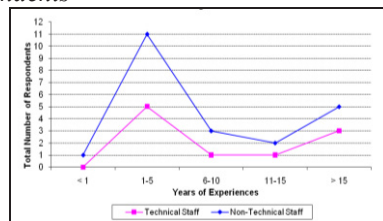


Figure 2: Respondents' working experience in maintenance field.

A total of 22 respondents were interviewed from 20 numbers of historical buildings selected. The respondents are consists of a personnel who involved in the maintenance of each particular buildings. This can be divided into two categories namely technical staff and non-technical or property management officer. Based on the interview, it was found that most of them are still new and doesn't have much experience in terms of maintenance for historical buildings. This can be seen in the above figure which shows that majority of respondents have only 1 to 5 years working experience in the maintenance field.

4.2 Organization Structure

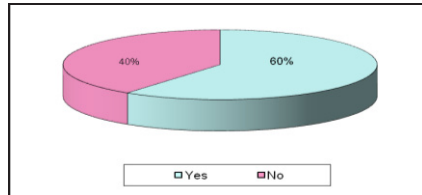


Figure 3: Establishment of maintenance unit.

In terms of establishment of maintenance unit within the selected historic buildings organization, 12 buildings (60%) confirmed that they do have proper set up of maintenance unit. Based on the researcher observation, eventhough 60% confirmed of the set up, most of them were focusing more on electrical and mechanical services rather than building structures. Most of them are still lacking of specialization for rectification of structure defects and diagnosis. Another 8 buildings (40%) which confirmed of their non-set up of maintenance unit prefer to outsource all the maintenance works or they just practice a very minor maintenance such as daily cleaning. Majority of the buildings were owned by the government, so if any damage occurred, they will directly refer to Public Work Department, Kuala Lumpur to get further advice and repair work done.

4.3 The Importance of Historical Buildings

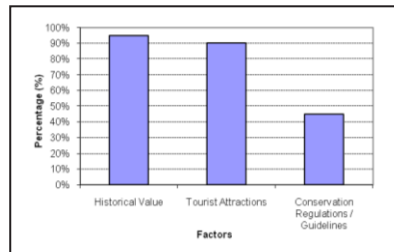


Figure 4: Key consideration factors for the conservation of historic buildings.

Based on the interview done, it is surprisingly found that all of respondents did aware on the historical value on their building and they are 100% agreed that it is such an important factor for historical buildings to be conserved and maintain. Other factors which also act as an important key consideration for the conservation and maintenance of historical buildings are historical value, tourist attractions and due to conservation guidelines imposed by government (refer figure 4). When asked whether they have informed all staffs on the different maintenance works requires in historic buildings compared to modern buildings, 65% confirmed that they did inform their staff. The rest (35%) said vice versa. Based on the findings and analysis, it is shown that most of maintenance management staff in historic buildings do

have some understanding on the important and significant of maintenance to the buildings. However, in some buildings they did not give so much attention to this matter making it less important to their staffs.

4.4 Maintenance Approach – Current Practice

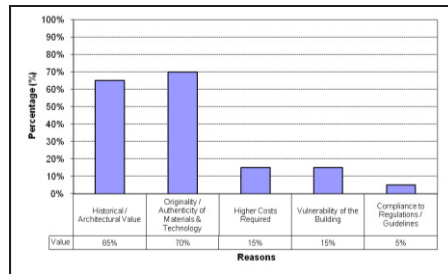


Figure 5: Respondents opinion on reasons on the intricacy of maintenance works to historic building

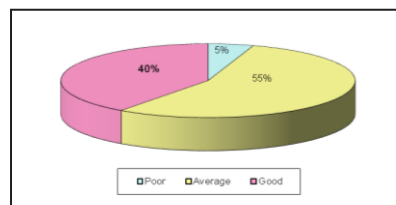


Figure 6: Current status of maintenance works.

50% of respondents claimed that they adopted Planned Maintenance Programme for their buildings, while another 50% confirmed that Unplanned Maintenance Programme is practiced by their organization compared to Planned Maintenance Programme. This confirmed that there is still lack of expertise in establishing a systematic and standardized maintenance programme. Generally, all of the respondents agreed that undertaking a maintenance programme for historical buildings are more complex compared to carrying out maintenance works for a new building. The subject of authenticity, the need to retain the architectural, historical, heritage and cultural values, the difference of the original built materials and technology, higher costs required are some of the intricacy that should be handled properly by the maintenance department and the technical skills appointed when undertaken the maintenance works (please refer figure 5 for detail).

With reference to 3 scales marked as “poor”, “average” and “good”, purposely to symbolize the current status of the maintenance works implemented on the historical buildings, the overall results is shown on the figure 6 above . 55% of the respondents which is equivalent to 11 numbers of historical buildings claimed that they viewed the current status of maintenance works at an average and acceptable level. Respondents from 8 numbers of historical buildings claimed that the current maintenance works status are deemed as good enough. Their basis for this status level achievement is based on the current condition of the buildings of which the buildings are functional and not much defects occurred on the buildings and the services systems. 5% of the respondents which is equivalent to 1 number of historical buildings viewed that the current maintenance works implemented are considered as poor. Based on researcher observation, this may due to lack of maintenance personnel within the building.

4.4 Regulations and Guidelines

Findings regarding regulations and guidelines had confirmed that only 45% or 9 buildings did refer to some guidelines in doing their maintenance works, somehow another 55% or 11 buildings said they did not refer to any guidelines provided that they did not aware of the existence of the guidelines for historical buildings. Those 45% refers to guidelines provided by national heritage trust, public work department, museum department and KEKKWA. However, when asking the specific name of the guidelines, they cannot give the answer which showing their unsureness. The respondents were also asked in terms of their awareness on international guidelines for historic buildings. Surprisingly, all respondents confirmed that they just refer to local guidelines only. None of them aware of the international guidelines such as burra charter or venice charter. 95% of respondents then said they need a proper guidelines to assist them in carrying out maintenance works in their buildings. Reasons to the needs are standardization will be achieved for maintenance works, the guidelines can act as a quality benchmarking to all maintenance work done, it can be a basis for preparing the maintenance programme for specific buildings and also as a reference for external contractors appointed for maintenance works in historic buildings.

4.5 Financial Factor

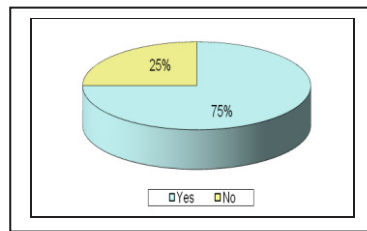


Figure 7: Sufficiency of budget

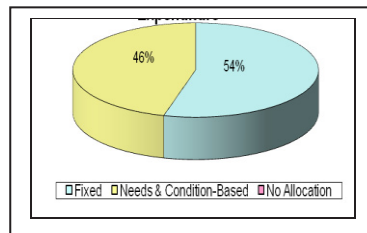


Figure 8: Allocation for maintenance expenditure

In terms of financial factors, 75% or 15 buildings had confirmed that they have sufficient budget for carrying out all maintenance works, while another 25% or 5 buildings did not have adequate budget (refer figure 7). Most of the budget are allocated annually depends on the needs and condition of the building. Some of it were given fixed budget in annually basis (refer figure 8). Usually the allocation provided will be based on the previous year expenses. In terms of budget resources, most of the buildings were much depends on their own organization. They hardly get the budget from the government. When asking whether they know if there are incentives given by the government, 55% said they are not sure and 15% said there is no allocation provided. However, another 30% answered yes showing that they know that there are allocation provided by the government. As to researcher knowledge, Malaysia Heritage Department under KEKKWA, do have some allocation for maintenance of historic buildings, but the

allocation must be applied for and will only be given to certain criteria of buildings decided by KEKKWA. This happened to put a lot of restriction to historic building owner as they have to achieve certain criteria in order to get the allocation. And for some of them, they feel it is very hard so they decided not to apply at all.

4.7 External Factors Affecting the Implementation of Maintenance Works

During the interview and questionnaire fill-up session, respondents were also asked to give their opinion on the external factors that might contributing to an efficient maintenance works for historic buildings. Amongst the factors given are the needs for funding allocation, best management practice, efficient supervision works, the needs for establishment of specific regulations and guidelines, appointment of qualified technical skills, provision of incentives from the government and establishment of standardized maintenance programme. In researcher observation, much of the problems associated with maintenance management of historic buildings is mainly due to lack of systematic maintenance programme to assist the historic building owner. It is confirmed that the proper programme is crucially needed in order to remain what we still have today. If no systematic maintenance works being implemented, we will lost our evidence of history sooner or later.

5.0 Conclusions and Recommendations

This paper summarizes the findings on the current implementation of maintenance works undertaken for historical buildings in Kuala Lumpur. The case study result indicated that maintenance undertaken for historical building in Malaysia is still on a loose based. It can be summarized that major issues contributing to the lagging of a proper maintenance programme are as follow:

- a) The absence of the enforcement of a scheduled or periodic inspection by the authorities on historical buildings is the main issue associated with the decaying condition of the historical buildings. It was found that the main maintenance works carried out on these buildings are mainly repair or replacement works. In fact, the works normally concerns the services systems, not the building fabric or the structural or non-structural elements.
- b) Some of the organizations of historical buildings do not include a proper set-up of maintenance department or unit to carry out this specific work. Most of the organizations preferred to outsource the maintenance works to external contractors. This results to another issue on the quality level of the maintenance works, whether the works undertaken are true to their originality or not. As earlier explained, conservation is a new industry and not all contractors are knowledgeable and skillfull enough in understanding the intricacy of the maintenance works to be carried out on the historical buildings. The lack of understanding may result to loss of building value.
- c) Financial factor or in other name the cost to be allocated to carry out the maintenance works is one of the major issues. Based on preliminary study conducted, it was found that incentives given to the owners of historical buildings are not compelling enough and very limited. In addition, the financial allocation for conservation and maintenance works provided by the government is only provided for selected buildings only.
- d) The lack of technical skills and expertise to carry out the maintenance works is another issue faced in Malaysia. Undoubtedly, the numbers of competent technical staffs in Malaysia contribute to the questionable level of maintenance works carried out. Maintenance is a new industry in Malaysia and

majority of those involved in the maintenance management organization of historical buildings are lacking in technical knowledge and skills. It is noted that historical buildings are more intricate and delicate compared to contemporary, modern buildings and therefore there is a need to understand the importance of preserving the significance of the buildings with regards to its architectural, cultural, heritage and aesthetical values as well as to fully understand the conventional or traditional materials and technologies used for the construction of the buildings. In short, the execution of the maintenance works on the historical buildings should not be taken lightly and indeed the works require involvement of experts in order to ensure that certain quality standard is achieved and to prevent the loss of heritage value.

- f) The non-existence of specific guidelines and an example of an established maintenance programme as a standard guideline that can assist the maintenance department or unit is another issue that is overlooked in Malaysia.

The majority of the bodies charged with the conservation of historic buildings follow the logic and common sense of prioritizing maintenance over repair. Yet this research finding suggests that even some of these organizations are confused and relatively ill prepared to implement a coherent maintenance strategy. This is not so much an issue of negligence, but one of a failure to give maintenance the requisite priority. There is another more profound problem relating to the issue of maintenance; whilst most people would agree that a regime of regular maintenance is the ideal, providing good value for money and a better investment performance, the fact is that maintenance is perceived as money and effort spent on nothing new. It does not make the owner money, and although it can save them money in the medium and long term, they never see the return in an accountable way. Despite the best efforts of those championing regular maintenance, and its undoubted importance as the optimum conservation strategy, it has never been seen as either an attractive or a lucrative option. Maintenance is always wrongly perceived as a low status professional activity.

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