UNIVERSITI TEKNOLOGI MARA

QS COLLOQUIUM 2020

SERIES XII

PROCEEDING

OCT 2020- FEB 2021

BACHELOR OF QUANTITY SURVEYING (HONS.)
Department of Built Environment Studies & Technology,
Universiti Teknologi MARA Perak

QS COLLOQUIUM 2020 SERIES XII

UNIVERSITI TEKNOLOGI MARA (UiTM) PERAK BRANCH
OCTOBER 2020 - FEBRUARY 2021

Perpustakaan Negara Malaysia

Editors
Sr Dr. Kartina Alauddin
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Centre of Studies for Quantity Surveying
Department of Built Environment Studies & Technology
Universiti Teknologi MARA (UiTM) Perak Branch
Seri Iskandar Campus, Perak, MALAYSIA

ISBN: 978-967-19692-0-5

DEFECT REMEDY IN HOSTEL BUILDING IN UNIVERSITI TEKNOLOGI MARA SERI ISKANDAR, PERAK

Nor Maziah binti Ishak[1] and Natasha Khalil[2]
[12] Centre of Studies for Quantity Surveying, Department of Built Environment Studies & Technology, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus
normaziah167@gmail.com[1], natas582@uitm.edu.my[2]

Abstract
Malaysia is among one of the development countries that growing rapidly in all sectors which include the sector in construction. One of the components that need attention is the defects in buildings. The aim of this study is to prioritize in the solution towards reducing defects in the hostel building in UiTM Seri Iskandar, Perak using matrix analysis. Objectives of this study are to identify the category of defect that occur at the hostel buildings, to identify the causes of defect that occur at the hostel buildings and to access the priority of reducing the defects in the hostel buildings in UiTM Seri Iskandar, Perak using matrix analysis. A quantitative research was conducted to five respondents who experienced in identify defects at student's resident college in UiTM Seri Iskandar, Perak. Findings from this research revealed that lack of maintenance and climatic condition are the causes of defect that occur at the buildings. Both selected hostel building are in median condition and the affected area need to be rectify. In conclusion, defect that occur need to be rectify to ensure the life span of the building longer.
Keywords: Defect, maintenances, hostel building

1.0 INTRODUCTION

Malaysia's construction industry is becoming more and more new day by day. Even though the construction industry's progress is more advanced today, it still has problems with the building defects in example. Defects can occur in many reasons such as poor workmanship, cost cutting using low-grade material, repair and maintenance. According to Wahab and Hamid (2011) the tropical climates condition, such as in Malaysia is one of the problem that can affect significantly to the building defects. Building maintenance is an important programme for the sustainability of infrastructural development. It plays an important role among other activities in the building operations (Zulkarnain et al., 2011). Maintenance of the building is a process of reservation and restoration activity of the structure and components of a building. In Malaysia there is also a manual guideline from Public Works Department (JKR) for a building conditions and maintenance (JKR,2016). This manual guideline uses as guide to do a proper maintenance. The guideline is *"Pemeriksaan dan Penilaian Keadaan Bangunan Sedia Ada"*.

1.1 Problem statement

Defect in the construction project is very popular. Referring to Malaysia's Prime Minister, Datuk Seri Abdullah Ahmad Badawi, billions of ringgit have been expended and wasted on restoring public buildings due to Malaysia's poor maintenance community. (Abdullah, 2007). The defects in the construction project can become worst if there is no action taken. Awol, Adugna and Mosisa, (2016) stated that due to the invisible defect that not discover by the builder or the occupants can lead to the worst defect. According to Assaf, Al-Hammad and Al-Shihah (1996) Construction defect may also have a negative effect on the occupant, the contractor, and the nation. It could therefore affect the appearance of the house, the health and safety of the occupant, the economy of the country, reputation and so on. As a consequence, this issue will ultimately cause the occupant of the building to be unhappy. Deformity building is one of the significant building segments that required consideration. At the point, we immediately look for answers when a building neglects to conduct as it should. In Malaysia defect at the building is too many and impact of the defects are high maintenance costs, dangerous to the occupants, and the building not well function. Systematic management and continuous maintenance works for mitigating the decaying process that will lead to unsafe condition.

1.2 Aim

To prioritize in the solution towards reducing defects in the selected hostel buildings in UiTM Seri Iskandar, Perak using matrix analysis.

1.3 Research objectives

i. To identify the category of defects in the selected hostel building in UiTM Seri Iskandar, Perak.
ii. To identify the causes of defects in the selected hostel building in UiTM Seri Iskandar, Perak.
iii. To access the priority of reducing the defects in the selected hostel buildings in UiTM Seri Iskandar, Perak using matrix analysis.

1.4 Research questions

i. What are the category of defects in selected hostel buildings in UiTM Seri Iskandar, Perak?
ii. What are the causes of defects in the selected hostel buildings in UiTM Seri Iskandar, Perak?
iii. How to assess the priority of reducing the defects in the selected hostel buildings in UiTM Seri Iskandar, Perak?

1.5 Scope of research

This research is only focus on type of defects at walls, ceilings and roof, causes of defects and defect that should be prioritize at hostel building. The quantitative method will be used using online survey as a tools. This research is carry out at hostel building in UiTM Seri Iskandar, Perak due to data accessibility and experiential issues faces by the students in resident.

2.0 LITERATURE REVIEW

2.1 Category of defect

Hong (2016) stated that there are category of defect that can be divided by element for examples roof, floor, wall, ceiling and etc. Different elements and category has different defect that occur in the building. There are several common types of defects that usually occur in the buildings. According to Tan Wei Cheun, (2008) common building defects in general, there have several building defects which usually occur to building parts such as roofs, walls, floor, ceiling, doors, toilet.

2.1.1 Wall

There are several types of defect that usually occur at the wall. It is the nature of many building materials to crack as they age and expand and contract, particularly when exposed to moisture as they get wet and dry alternately (Bakri and Mydin, 2014). Popular places are cracked, such as exterior walls, internal walls at the corners of doors and windows, and ceilings (usually in the middle). Crack defect has been graded as visible damage. Next, defect that usually occur is the paint peeled off from the wall, mainly is on walls that already plastered (Ahmad, 2004). In addition, building poles and other parts of the building that are exposed to sunlight and rainwater will also cause paint exhalation. Especially for the high rise this is because it exposed to huge amount of rain and sunlight. Mouldy wall is also the common defect in the building. Especially at the room beside the toilet. Mouldy wall usually occur when there are extra water or moisture that contain in the wall. The mouldy wall also makes the building sick. So the people who occupied the building will be getting sick because of the mouldy wall.

2.1.2 Roof

Roof is the important element in the building as it is providing the weather shield in the buildings. Roof also protect the occupants from the hot weather and heavy rains. According to Chong, W. and Low, S. (2005), he found out that by reducing the defects at the roof may also reduce the possibility of leakage at the roof and increase the duration of life span for the roof.

2.1.3 Ceiling

Ceiling crack is a common defect to a building after several years of use of the building. Ceiling cracks is not only decrease the value of the building but it is also affect the occupant safety. Plaster rendering may be categorised as a few forms that are cracks in plaster, cracks in shrinkage, and plaster falling from the ceiling. These three forms are the most common defect to occur in the manufacture of plaster. (Low & Wee, 2001). In addition, if the roof has leakage, ceiling will affect too (Hong, 2016). Ceiling will turn to mouldy and

sometimes it will produce smell (Fox, Goodhew and De Wilde, 2016). It is affect the comfortable of the occupant especially student who stay at the hostel. It will distract their focus when they are study or doing revision.

2.1.4 Floor

Generally, defects in floors arise from deflection or attack by fungus or insects. Problems in upper floors can also occur where a building has been subjected to a change of use, or where there is insufficient insulation to combat noise, especially impact sound transmission. According to Hong (2016), floor crack and floor mouldy are the common defects that usually occur in the buildings.

2.2 Causes of defect

There are many causes that can lead to a building defect. Poor workmanship, material not according to the specification in the contract also lead to the building defects (Hong, (2016) Building without maintenance also can lead to defects. This is supported by Alauddin et al., (2016) proper maintenance can reduce defects. According to Tope (2017) damaged building development not just adds to the last cost of the item additionally to the cost of support which can be generous. Deficient development incorporates exercises, for example, compaction not done to detail prompting ground subsidence and in the end early crumbling of each segment of the building, this may prompt finish disappointment of a structure with high cost of support on the long run.

2.3 Maintenance

Maintenance of a building including maintain the hostel building as to keep it in a good condition. In Malaysia, school building maintenance usually neglected and there are no sufficient guidelines for this process. JKR had provide the guideline but it is normally implement for public building in Malaysia. Maintenance work is important to a building to keep the building functionality (n.d ,2018). Assessment of building condition is therefore needed as one of the proactive steps in managing and maintaining the performance of facilities. Baharuddin *et al.*, (2014) stated that to ensure that a building's physical life span can exceed age over a longer period of time, the building needs considerable attention and care from all concerned parties. In the early stage of construction work and design, this should be achieved with caution and in detail. Additionally, the maintenance work in compliance with a certain time is still necessary.

3.0 METHODOLOGY

This research is using quantitative method. The questionnaire is distributed to the maintenance officer at the selected buildings due to familiarity of the officers in evaluating the building condition. According to the divisions of organisation Bahagian Pengurusan Fasiliti (BPF) UiTM Perak, there are five (5) officers and technicians that are responsible in the maintaining the college buildings. Hence, based on the population of maintenance officers and technicians, the questionnaire is distributed to all five (5) respondents.

4.0 ANALYSIS AND FINDING

4.1 Category of defects that usually occur at the selected hostel buildings in UiTM Seri Iskandar, Perak.

Defect that usually occur at the hostel buildings are defect at floor, wall, ceiling and roof. The higher frequency is defect at wall, ceiling and roof which is 100% compared to floor which is 40%. Tan Wei Cheun, (2008) stated that, common building defects in general, there have several building defects which usually occur to building parts such as roofs, walls, floors, ceiling, toilets, doors and windows.

4.2 Causes of defect in the selected hostel buildings in the UiTM Seri Iskandar, Perak.

As the result from the research, the findings of the research questionnaire identified that lack of maintenance is the causes of defect that occur at the hostel buildings. All five (5) respondents agreed that lack of maintenance is cause of defect. Alauddin et al., (2016) stated that, proper maintenance can reduce defects at

buildings. Next, climatic condition is one of the causes of the defect that occur in the hostel building that agreed by all of the five respondents. This is supported by Wahab and Hamid (2011) the tropical climates condition, such as in Malaysia is one of the problem that can affect significantly to the building defects.

4.3 To access the priority of defect using matrix analysis.

Table 1 shows the table rating tools according to JKR guideline. The defects need to take action according to the guideline below. Based on the table 2, the comparison between College Melati 1 and Melati 2 the worst condition is at Critical condition which is need to recovery the affected buildings. Melati 2 has twelve locations that need to be repair because the condition is at Median level. Condition of floor at Melati 1 shows Very Good condition. Therefore, to ensure the conditions of the building in a good condition, schedule maintenance need to be conduct regularly.

Table 1: Table rating condition

Rating	Condition	Matrix Condition	Score
A	Very Good	Schedule Maintenance	1 to 5
B	Good	Maintenance on Condition Based	6 to 10
C	Median	Repairs	11 to 15
D	Critical	Recovery	16 to 20
E	Very Critical	Change	21 to 25

Table 2: Comparison between Melati 1 and Melati 2

BUIDING ELEMENT	Melati 1	Melati2
Wall		
Wall crack at ground floor	2	6
Wall crack at level 1	2	6
Wall crack at level 2	2	6
Peeling paint at level 1	9	9
Peeling paint at level 2	9	9
Peeling paint at ground floor	9	9
Wall mouldy at ground floor	9	12
Wall mouldy at level 1	16	12
Wall mouldy at level 2	9	12
Floor		
Floor crack at ground floor	4	6
Floor crack at level 1	4	6
Floor crack at level 2	4	6
Floor mouldy at ground level	4	12
Floor mouldy at level 1	4	12
Floor mouldy at level 2	4	12
Ceiling		
Ceiling crack	9	6
Ceiling mouldy at toilet in ground level	16	16
Ceiling mouldy at toilet in level 1	16	16
Ceiling mouldy at toilet in level 2	12	12
Ceiling leakage	9	6
Roof		
Roof tile crack	2	4
Roof leaking	2	4

5.0 CONCLUSION

In a nutshell, defect that occur at the hostel buildings because of some factors. The majority agreed that defect at the hostel building because of lack of maintenance and climatic conditions. Therefore, to reduce the defect at the building the most important things are to do a schedule maintenance. Schedule maintenance can ensure the life span of the building is longer. Public Works Department has produce a guideline on a building rating tools. Based on the guideline, it can clearly show how the condition of the building and the action that need to takes to make sure the building in a good condition. According to the Public Work Department the rating condition of the building need to do every year to ensure the functionality and safety of the building.

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