CENTRE OF STUDIES FOR BUILDING SURVEYING FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING UNIVERSITI TEKNOLOGI MARA

AN INVESTIGATION OF DEFECTS AND CORRECTIVE MAINTENANCE APPROACH APPLIED FOR GOVERNMENT BUILDING

NOR ZAKIAH BINTIMISNAN

Academic Project submitted in partial fulfilment of the requirements for the degree of

Bachelor of Building Surveying (Hons)

Centre of Studies for Building Surveying

Faculty of Architecture, Planning & Surveying

ACKNOWLEDGEMENT

Alhamdullilah, thankful to Allah S.W.T that giving me strengthen and an idea of preparing the academic project and on his grace I had completely finished the dissertation. Hereby, I would like to express my deepest thanks to Department of Immigration, Putrajaya, Pejabat Setiausaha Kerajaan Negeri Selangor, and Dewan Bandaraya Kuala Lumpur that has been gives the permission to access the building to collect information and data. Furthermore, very thankful to my supervisor Puan Lilis Serene binti Safiee, that gives a lot of the guidance and opinions from a start to completion of this research. Last but not least, thankful to the maintenance staff for all case studies because of the cooperation with me to give a lot of information based on my study. Not forgetting thanks to my family that gives me spirit and sacrifices throughout my journey.

Thank you.

ABSTRACT

Nowadays, most of a government buildings in Malaysia have problem of defects in their buildings which certain building defects can be dangerous to occupants of the building. So it is important to know the types of defects, the causes and the corrective maintenance approach to solve the defects on government buildings. The research uses the primary and secondary data to get the information and gain the knowledge. Interviewed and observation was carried out at all case studies to meet the parties involve in maintaining the building. The finding of this study, the researcher will conclude that there are common types of building defects in the government building. The causes of building defects also similar for all case studies. Lastly, the researcher will recommend for the improvement of current corrective maintenance approach and defects solving methods.

Table of Content

1. I	ntroduction	
1.1.	Study Background	1
1.2.	Problem statement	3
1.3.	Objective of Study	5
1.4.	Scope and Limitation	5
1.5.	Research Methodology	6
1.6.	Chapter Outline	8
2. L	iterature Review	
2.1.	Government Buildings in Malaysia	9
	2.1.1. Types of Government Building	10
	2.1.1.1. Public Government Offices	10
	2.1.1.2. Educational	10
	2.1.1.3. Hospital	10
	2.1.1.4. police and army	11
	2.1.1.5. Port and airports	11
2.2.	Introduction to Maintenance	12
	2.2.1. Planned Maintenance	12
	2.2.1.1. Preventive Maintenance	12
	2.2.1.2. Corrective Maintenance	12
	2.2.2. Unplanned Maintenance	13
2.3.	Introduction to Building Defects	13
2.4.	Nature of Buildings Defects	14
	2.4.1. Mechanical Agents	14
	2.4.2. Thermal Agents	15
	2.4.3. Chemical Agents	15
	2.4.4. Biological Agents	15
2.5.	Type of Building Defects	18
	2.5.1. Structural Problem	18
	2.5.1.1. Structural Failures	18
	2.5.1.2. Structural Movement	19
	2.5.2 Moisture Problems	20

	2.5.2.1. Leaks and Floods	20
	2.5.2.2. Condensation.	21
	2.5.2.3. Rising Dampness	21
	2.5.3. Wood Problems	22
	2.5.3.1. Moisture Content	22
	2.5.3.2. Fungal Infections	23
	2.5.4. Roof Problems	23
	2.5.4.1. Pitched Roofs	24
	2.5.4.2. Flats Roofs	24
2.6.	Causes of Building Defects	25
	2.6.1. Dampness in Basements	26
	2.6.2. Blistering, Splitting and Cracking of Asphalt Roof Surfaces	27
	2.6.3. Sagging and Deformation	27
	2.6.4. Deteriorating and Slipping Roof Tiles	27
	2.6.5. Timber Decay	28
	2.6.6. Cracks Related to Movement in the Building Structure	28
	2.6.7. Damp Wall or Ceiling	28
	2.6.8. Mould growth	29
2.7.	Remedial Work of Building Defects	29
	2.7.1. Dampness in Basements	29
	2.7.2. Blistering, Splitting and Cracking of Asphalt Roof Surfaces	30
	2.7.3. Sagging and Deformation	30
	2.7.4. Deteriorating and Slipping Roof Tiles	30
	2.7.5. Timber Decay	31
	2.7.6. Cracks Related to Movement in the Building Structure	31
	2.7.7. Damp Wall or Ceiling	31
	2.7.8. Mould growth	31
2.8.	Summary	32
2 1	Mathadalagy	
	Methodology	20
3.1.	Introduction	
3.2.	Research design and strategy	
3.3.	Data Collection	
	3.3.1. Primary Sources	
	3.3.1.1. Interviews	36