

## REFLECTION

This graduation research thesis is developed through many steps to reach the final results. At first, the aim of writing this thesis was to explore the elements that can enhance the professionalism of public organisations in managing their building assets. Nevertheless, the focus of the research must be narrowed into specific area. Therefore, the selection of research topic focused into maintenance departments as part of the public organisations. Maintenance departments have important roles in managing the public organisation's building assets. Thus, by having professional maintenance departments, public organisations can manage their assets in more effective and efficient ways.

The decision to develop a maturity model was influenced by the research of Prof. Marleen Hermans. As my mentor, I could use her developed maturity model, the Public Commissioning Maturity Model (PCMM) as my main reference to reveal the main aspects of Maintenance departments in Public organisations. Yet, during my P2 term I could not comprehend my research development with the PCMM as my main model. Therefore, I should change the main model reference with another model.

The development of PCMM was incorporating the EFQM model as a general model that commonly used in Europe as a quality management tool. Thus, we decided to use the EFQM model as my main reference to explore the maintenance maturity aspects. However, the PCMM was still become my reference to understand the factors that are important in public organisations. Furthermore, in journal literature of the PCMM, I could follow the step-by-step development processes of the maturity model for this research. Along with the PCMM, I also use the Capability Maturity Model (CMM) that developed by Paulk et.al (1993) as the reference to understand the basic idea of a maturity model.

The processes of revealing the criteria of mature maintenance departments were demanding. The literature reviews about maturity models for building maintenance were limited. I had to summarise and conclude the maturity aspects from the available resources and conducted expert interviews. My proposed maturity model consists of five main aspects and 20 sub aspects.

Finding the appropriate respondents was not easy. Some difficulties were related to the language barrier, the position of the respondents in the organisations, and the types of the company or organisations. Yet, I could manage to interviewed nine respondents from different types of maintenance organisations. The results from the interviews could enhance my knowledge about the maintenance department's activities in real professional situations. Furthermore, it helped me to develop the maturity level descriptions.

Developing the maturity levels was the most challenging part in this research. I did not find many scientific references as guidance about designing the maturity levels. I revised the descriptions several times after receiving feedbacks from my mentors, interview respondents, and after reading journals literatures. I also reviewed the development of maturity levels of Project Management Maturity Model (PMMM). Therefore, I could build the final maturity levels. However, those level descriptions were changed again after the second round interviews.

There were no major changes in the proposed maturity aspects to the final maturity model. The change was on the descriptions of first sub aspect from "performing object valuations" into "object valuation and condition assessment". The addition of condition assessment into the first sub aspect was because of object valuations assessing more on financial and functions, whether the condition assessment more on the physical aspect. Nevertheless, object valuation and condition assessment have the same purpose, which is to value the building assets. More changes were in the maturity level descriptions and the assessment sheet. The proposed assessment sheet was consisted of 26 questions and expanded into 27 questions. As it described in chapter 7 of this thesis report, the final

Maturity model consists of 5 main aspects and 20 sub aspects with five levels descriptions for each aspect. The assessment sheet is consists of 27 questions with 5 multiple answers for each question.

The purpose of developing the assessment sheet and the maturity model in this research is to make the maintenance departments able to do self-measurement to reveal their maturity. Once the maintenance departments aware about their current level, they can define their strategies and plan for the future improvement by exploring the maturity model.

The lesson learned from doing this research is that I need to be more focus and specific towards my thesis topic since the early phase of my research. I have to change my research questions for several times, that makes me understand that this research is a dynamic process. I also learn to manage my time and manage to interview the professional experts. Furthermore, I get more knowledge and an overview about the real professional works of maintenance in the Netherlands.

Finally, I feel satisfied through the journey of delivering this graduation thesis report. I had so many experiences that enhance my knowledge about the maintenance departments in public and private sectors, especially in the Netherlands. I also hope that this research will contribute in the development of science and knowledge to the management of the built environment area.