CENTRE OF STUDIES FOR QUANTITY SURVEYING

FACULTY OF ARCHITECTURE, PLANNING & SURVEYING

UNIVERSITI TEKNOLOGI MARA

CAWANGAN SARAWAK

THE ADOPTION OF BUILDING INFORMATION MODELLING (BIM) IN ENHANCING FACILITIES MANAGEMENT PERFORMANCE

Final Project submitted in partial fulfilment

of the requirement for the award of

Bachelor of Quantity Surveying (Honours)

PREPARED BY : ZARIEL IRFAN BIN HATTONO

(2019458214)

SEMESTER : MARCH – AUGUST 2021

ABSTRACT

Building Information Modelling (BIM) has numerous benefits and applications in Facilities Management (FM) also, every organisation is different, necessitating a specific approach to BIM implementation. In both academia and industry, BIM has been recognised as a new approach that can improve corporate competitiveness and quality, but its implementation has been limited. BIM for Facility Management has gotten a lot of attention in the literature and in practise, and it's very popular in the FM industry, but it's still a long way from being fully implemented. Facility managers are unsure whether BIM will help them speed up the process or if it is a cost-effective solution, or what skills they will need. Thus, the aim of this research is to explore and analyse the implementation of BIM towards enhancing facilities management industry in Sarawak. This study used a questionnaire to conduct a survey of the adoption of BIM in FM performance and over 50 number of questionnaires were given. This research findings will give awareness to the Facility Manager about the benefits of using BIM in the industry for enhancing facility management performance. The outcomes from this research will be beneficial for the Facility managers, researchers, institution, and community for the advancement of knowledge and future practice where they will realize the importance of BIM in the facilities management industry.

Keywords: Facility Management, Building Information Modelling, BIM adoption.

ACKNOWLEDGEMENT

Bissmillahirrahmanirrahim,

Alhamdulillah. Thank you to Allah SWT, whom with His willing and guiding me throughout this research and for the good health and wellbeing that were necessary to complete this research.

Firstly, my appreciation is further to my dissertation supervisor Sr Mohd Khairul Fitri Bin Othman, that always guides me on my research journey with his experiences and knowledge. I am honoured to be supervised by you where all the sharing knowledge sessions and your advice are the best moments to be remembered. Once again thank you for your time and present during my research journey.

Not to be forgotten also my family contribution. The balanced support between spiritual and financial from my parents encourage me to proceed with my research without any major difficulties. The support motivates me to give my best performance for the research to gain a satisfying result. I hope my parent proud of my achievement and their scarification to me is repay with every effort that I made.

Lastly, to my classmates that deserved my appreciation. The hardship throughout the research journey is shared by seeking advice and opinion with my classmates to resolve the problem. Support from my classmates realized me that the importance of a companion in your life because no man is an island.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1 RESEARCH BACKGROUND

Facility management has been proven to be an information-based profession by practitioners. It encompasses a wide range of activities and requires a massive amount of data. It requires a large quantity of easy access and relevant data for different stakeholders. As a result, efficient access to and dissemination of information is required. Construction project delivery systems, according to Mendez (2006), have significant communication gaps, particularly between constructors and operators/owners. A traditional handover of a project from a contractor to an operator/owner often results in the loss of a large amount of data and provides incompatible data for later FM systems (Lee et al., 2012). This occurs because most current FM systems and procedures, such as 2D drawings and manual discrete processes, are outdated or lacking in information. As a result, the operator/owner would have to invest more time and money in distilling and re-populating the necessary FM data. For decades, the construction industry has been plagued by wastages and inefficiencies that have resulted in significant cost and time overruns. Most of these concerns arise during the facility's operation and management. Thus, enhancing and optimising the facility's management and operation is crucial.

Building Information Modelling (BIM) is useful for streamlining the information delivery for facility management practises and procedures (Alvarez-Romero, 2014). According to Becerik-Gerber et al. (2012), BIM has benefited facility operations and maintenance in the following areas: locating building components, facilitating real-time data access, visualisation and marketing, checking maintainability, space management, planning and feasibility studies for non-capital construction, emergency management, controlling and monitoring energy, and development. Hence, BIM adoption continues to be a major issue in BIM study and practise (Lee et al., 2015). It has been established that user acceptance of a technology results in its adoption (Ammenwerth et al., 2006).