IMPLEMENTATION OF THREE DIMENSIONAL PARCEL FOR STRATA MANAGEMENT CORPORATION SCHEME

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DEDICATION

This thesis is dedicated to my beloved father En. Eraman Sardan who taught

me that the best kind of knowledge to have is that which is learned for its own sake.

It is also dedicated to my beloved mother Pn. Aishah Ahmad, who taught me that

even the largest task can be accomplished if it is done one step at a time.

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ABSTRACT

In Malaysia development of strata scheme in three dimensional still lacks for Management Corporation (MC) for each building. The weakness in the management system is also related to the unprofessional practice of management in the country. Each management has its own guidelines and procedures on the management procedures will be implemented on the strata building. The aim of the study is to improve strata management in Management Corporation of strata that related to three dimensional. The 3D model was build based on the information get from secondary data from various sources. The 3D model helps the MC solve the problem occurs in the building fast and efficiently by using the GIS application. The findings from this study show that the 3D parcel modelling was successfully achieved using AutoCAD, SketchUp, ArcGIS software with the information from building plan to build the modelling in 3D. In conclusion, the implementation of 3D in cadastral strata survey may improve management in a cadastral environment in Malaysia.

ABSTRAK

Di Malaysia, pembangunan skim strata dalam tiga dimensi masih kurang untuk Perbadanan Pengurusan (MC) bagi setiap bangunan. Kelemahan dalam sistem pengurusan juga berkaitan dengan pengurusan praktik yang tidak profesional di negara ini. Setiap pengurusan mempunyai garis panduan dan prosedur sendiri mengenai prosedur pengurusan yang akan dilaksanakan di bangunan strata. Tujuan kajian ini adalah untuk meningkatkan pengurusan strata dalam MC skim strata yang berkait dengan tiga dimensi. Dalam kajian ini, model 3D bangunan dibina berdasarkan maklumat bangunan yang diperoleh daripada data sekunder dari pelbagai sumber. Model 3D petak membantu MC menyelesaikan masalah yang berlaku di dalam bangunan dengan cepat dan cekap dengan menggunakan aplikasi GIS. Penemuan dari kajian ini menunjukkan bahawa pemodelan 3D berjaya dicapai menggunakan perisian AutoCAD, SketchUp, ArcGIS dengan maklumat daripada pelan bangunan untuk membina pemodelan 3D petak. Kesimpulannya, pelaksanaan pengukuran 3D kadaster dapat meningkatkan pengurusan dalam persekitaran kadaster di Malaysia.

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LIST OF ABBREVIATIONS

2D   Two dimensional

3D   Three dimensional

DBMS   Database Management System

MC   Management Corporation

COB   Commissioner of Buildings

PTG   Pejabat Tanah dan Galian

KPKT   Kementerian Perumahan dan Kerajaan Tempatan

PBT   Pihak Berkuasa Tempatan

JUPEM   Jabatan Ukur dan Pemetaan Malaysia

DSMM   Department Survey and Mapping Malaysia

LS   Licensed Land Surveyor

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CHAPTER 1

INTRODUCTION

1.1   Research Background

Malaysia has experienced rapid development in line with the progress of developing countries based on the statements of other world economic forecasts published by the International Monetary Fund that have listed several countries including Thailand, Indonesia, Brunei, Brazil and other developing countries. The rapid development of the country can be seen with the progress of Malaysia as a developing country is not surprising that the country's population also increased with the passage of time. As we all know that Malaysia is a country located in Southeast Asia 10 other Asian countries. Geographical conditions that have divided with into two namely West Malaysia and East Malaysian and measures 329,847-kilometer no surprise that the population of Malaysia is approximately 32 million people and this number will continue to expend.

Along with the increase in human population, the deal on the housing sector is seen as a sector with strong demand especially in urban areas of town such as Kuala Lumpur, Selangor, Penang, Johor and other states. Land use in an urban housing sector also plays an important role in generating and spur the development of real estate industry and economic growth at the local level and the (Nuruddin, 2015) .The housing sector has undergone a change of understanding and purpose from time to time from being seen as a refuge but also to ensure that housing is developed to meet the needs of the community and affordable for everyone. The Strata scheme is growing rapidly in Malaysia from year to year as the population grows within an area.

Strata scheme is a property development which divides buildings or land into parcels, boxes and accessory parcels and common property in which management

system has been set up. For example, flats, apartments, condominiums, townhouses and landed houses in gated community schemes right (JKPTG, 2019).

Strata management is the management and maintenance of stratified buildings and common property within a strata scheme (JKPTG, 2019). According to Md Zan (2016) there are three stages in strata management in managing the building start from the developer, Joint Management Body and finally Management Corporation

In developing stage, they need to complete build the building and after that handover of vacant possession to the proprietor or owner. In Joint Management Body stage are formation JMB in 1st meeting in allocation of strata title to purchaser. After JMB is established, the management will be taken over until the application for strata ownership processed by the Land Office finish.

JMB may hold duties for not more than three (3) years or until dismiss of JMB. The main purpose of JMB's establishment is to provide the buyer with the opportunity to maintain and manage common buildings and property when a strata title is issued and registered, MC (Management Corporation will assume responsibility after the JMB is dissolved within three months after the first MC meeting.

Act 2007 (Act 663) Building and Common Property (maintenance and management) ACT 2007 was drafted to give the rights to the owners themselves to manage their own properties. In 12 months after VP (Vacant Possession) sent to buyer and need to held 1st meeting (AGM). Developer was responsible to manage the management. After the first AGM a body named JMB (Joint Management Body) is formed (MC PV 10 Platinium Lake Management, 2018).

According to Tan et al., (2009), various issues about the property and legislation that need to be identified during the development of three dimensional cadastre in strata scheme such as administration and management, services advisor,3D maintenance and damage, meeting and election, enforcement COB, financial issues and other related issues to strata environment.

Also according to Tan et al., (2009), various issue that need to know during the development of 3D cadastre in strata scheme is about the property and legislation because it very crucial to the owner know a right about the process that involve in strata title when the new implementation of 3D cadastre introduced.

Furthermore, strata title shows the proof of the ownership from the dealing of the parcel to every person that buy the parcel. The strata title really important now this because of the several issues that the government faces likes protect the interests of the proprietor to conduct the selling and buying of the parcel, as a evidence of the ownership for the parcel and simplify the dealing if the owner want to sell the parcel, do bank loans and death.

Besides that, on the strata title document also show the information of dimensional measurement of the parcel and other information that include in strata scheme of each parcel in the building that own by the owner. Strata scheme is a real estate development that divide the building into accessories parcel and common property with the managing from the management property that prepared to manage the building. From this title it also shows that, 3D modelling also can help the management to handle the information of the strata scheme of every parcel in the building.

Hereby, with a lot of development of the building, strata section in government and private may face a lot of issue to handle in future and need to find the solution to handle it. Through this situation implementation of 3D modelling can help to solve many problems beside can help to increase the quality production of the work in producing the information of strata of the owner.

1.2   Research Gap

Recent study has been conducted on the 3dimensional (3D) modelling in cadaster environment. According to Hua et al., (2012), Malaysia should go for Cadaster 2.0 along with recommendation from international by following criteria such as multipurpose cadaster, implementation of Land Administration Domain Model (LADM), Social Tenure Domain Model (STDM) and integrated of database.

However, there have been a few studies related to 3D cadaster for example Abdul Rahman (2011); Hassan et al., (2008); D Shojaei, et al., (2013); Volker (2003); Paulsson (2007) and Tan & Hussin (2012). Therefore, in Malaysia, issues according to high rise building need to be highlighted because of rapid development of highrise building now this. Local researcher should take this opportunity to conduct similar research and further, it will help in managing issues happen in highrise building. According to Isa et al., (2015), JUPEM also toward multipurpose cadaster by introducing Smart Cadaster to the user.

Hence in order to determine the research gap for this study, previous research was reviewed about issue on 3D modelling (Tan & Hussin, 2012), 3D modelling on high rise building (Roman & Stephen, 2016), integrated of 3d cadaster Malaysia as example (Hassan, 2008) and multipurpose cadaster framework for development country (Edward & Abdul Rahman, 2013), are used as main reference in this study. Based on the researcher study, most of the study emphasizing how to develop a 3D model without the issues of the building from the Management Corporation and the resident of the building.

1.3   Problem Statement

In Malaysia development of strata scheme in three dimensional (3D) still lacks for Management Corporation (MC) for each building. Even the implementation of 3D parcel is really important nowadays due to the rapid development that happen in this country especially in Johor, Kuala Lumpur, Selangor and Pulau Pinang. Unfortunately, many of the developer still implement 2D method in their work

environment. According to Paulsson (2007); Tan & Hussin, (2012), in order to give an exact definition of a 3D property rights, it is therefore necessary to look at the legislations of different countries that have the possibility of 3D property rights formation. Different property owners have different opinions on what complaint is considered good for the building and fee should be spent on the management. Residential not needed to think investing in the renovation and repainting of common property that puts the building in a good condition but not for the management. They need to make sure the building in good condition by fee to the them made by the residents. From this situation, it may affect to the quality work of the management corporation (MC) which will decrease when they need to renovate or fixed the problem in common property and also in update the information of the problem from the residents about the building.

Besides that, before this according to Tiun (2009) problems related to parcel owners, the weakness in the property management system is also related to the unprofessional practice of property managers in the country. There no proper guidelines or law on management procedures and professional fee. Each property manager has their own guidelines and procedures on both the management procedures and the professional fee charged. Now according to Strata Management Act 2013 and Strata Management (maintenance and management) Act 2015 are provide the information and guidelines for the maintenance and management of buildings and common property of highrise building in a suitable and effective way to help and contribute to the success of the strata development in Malaysia.

On the other hand, the problem that will occur when build the strata development are many department will involve in the development to make sure the housing follow the Certificate of Completion and Compliance (CCC) for the strata act 2007 and Certified Purpose Strata Plan (CPSP) for Strata Management Act 2013 which show the dealing start after the super structure of the building complete at the stage so they will be many improvement and changing in land dealing about the share unit of the parcel and also involve in strata scheme in each of every parcel. Issues on high-rise residential buildings have been increasing for the past few years.

The main issue on high-rise residential buildings is generally on their efficiency of MC overcome the problem failure of maintenance and to conduct maintenance work regularly and conscientiously (Abd-Wahab et al., 2015). The way to manage this situation is to develop 3D modelling that could help to reduce the problem. In this modelling the user can find which parcel involve in the changing of the dealing, share unit and strata scheme and it can be updated easily and not consuming time when the updating process is carried out.

1.4   Aim & Objective

The aim of this study is to improve strata management in Management Corporation of strata that related to three dimensional. To fulfil the aim of the study, there are several objectives as follow:

- To produce three dimensional parcel visualization.

- To facilitate the complaint of common property to strata management corporation using three dimensional modelling.

1.5   Scope of Study

There are many criteria's need to be considered in implementation of three dimensional (3D) parcel for Management Corporation in strata scheme at Malaysia. In this study, the data for generate of 3D strata scheme are obtained from building plan. The attribute data for strata parcel are also obtained from developer information of building. In this study, several software were used to generate 3D building of the study area for the purpose of visualization.

After that, the attribute data related to the 3D building modelling are interpreted as database for the purpose of query and analysing based on the complaint receive from resident to Management Corporation (MC). The database will help the MC in manage the complaints from the residents in easiest ways.

1.5.1 Study Area

The study area is at Taman Pelangi Johor Bahru have been selected in thesis. This area are placed under Majlis Perbandaran Johor Bharu (MBJB) in Mukim Plentong. This area is located at 1°28'45.55" N, 103°46'22.03" Figure 1.1 to figure 1.2 show the location of the study. Landuse for this area is housing and the area really near to Johor Bahru City which in 2.4km away and also easy access transportation about 5km to Larkin bus station.

Figure 1.1: Map of the study area
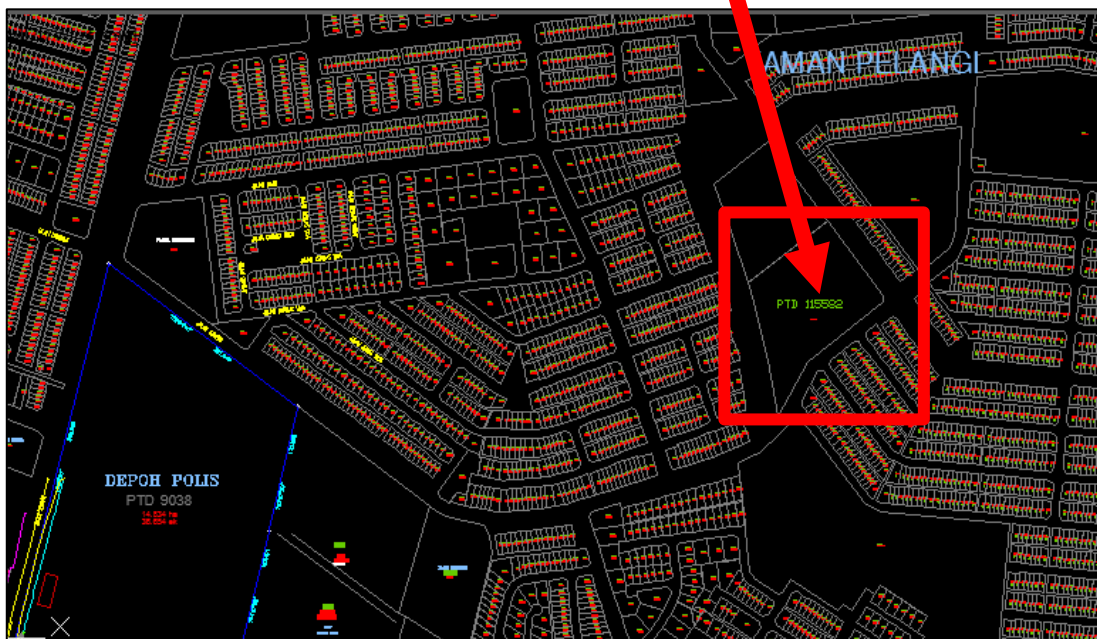
Figure 1.2 :The study area based on Geoportal Johor

1.5.2 Data Collection

Table 1.1 : Checklist of data acquisition

(a) Object	(b) Required Data	YES	NO
Dimension of building and parcel	• As Built Plan	/	
Information of the strata	• Number Lot	/	
	• Developer involved	/	
Information of strata issues	• Number of strata in Malaysia	/	
	• Type of issues that been complaints	/	
	• Number of issues from COB PBT in Malaysia	/	
Processing	• AutoCAD	/	
	• SketchUP	/	
	• ArcScene	/	

Table 1.1 shows data checklist that are needed in this study for data collection based on two objectives where there are sources from private sector, government sector and also data from the previous research. The data were acquired before data processing phase where dimension of building and parcel using as built plan, information of the strata, information of the strata issues and also the installation of the software need to be done.

1.6   Significant of study

Developing 3D model of building will help the Management Corporation of the strata to identify which parcel involve in relevant issues in strata scheme. There are several issues faced by the management while manage in strata environment. For example, an issue are from administration and management, services advisor, maintenance and damage, meeting and election, enforcement COB, financial issues and other related issues to strata environment

It is important our country to develop integrated 3D parcel modelling visualization that contain information of the parcel because it closely link to each other to be realized in development of 3D cadastral environment and in Management Corporation.This 3D modelling can help Management Corporation.in handlling the information of the building including the issues faced by the managment and also help to reduce the complaint from the residents. Through this issue, the implementation of 3-dimensional modelling can help to solve many problems besides helping in increasing the quality of work production in Management Corporation.

This modelling will show the information of the land owner, area of the land, developer, number of parcels, common property, category of complaints, and others. The Management Corporation are able to get the information of the building and the information of each parcel without referring to file manually. This modelling are easy to be used and less time required so it can help the Management Corporation to address any problems occur from residents in a simple and easy way.

1.7   Structure of Thesis

This thesis is divided into five chapters and every chapter is described as follows:

- Chapter 1 outlines of the thesis based on the stated objectives. In this chapter, it shows the research background, research gap, followed by problem statement, aims and objective of the study and scope of research.

- Chapter 2 explains more about the theoretical aspect of this thesis that need to be achieve. It also discussed about strata title, strata scheme, Management Corporation., commissioner of buildings and the software that used in this thesis.

- In chapter 3, it describes more about the flow of the thesis based on the methodology. This is the stage that the process of processing data to produce the outcome.

- In this chapter 4 it explains about the processing and analysis of the 3D parcel modelling based on the output produce in chapter 3.

- Chapter 5 is summary final outcome of the study whether it discusses about objectives are achieved or not and also the recommendation for future research are given.

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