Land Surveying, Local Government, Sustainable Development & Construction Industry. A Brief Reviews On Their Connectivity

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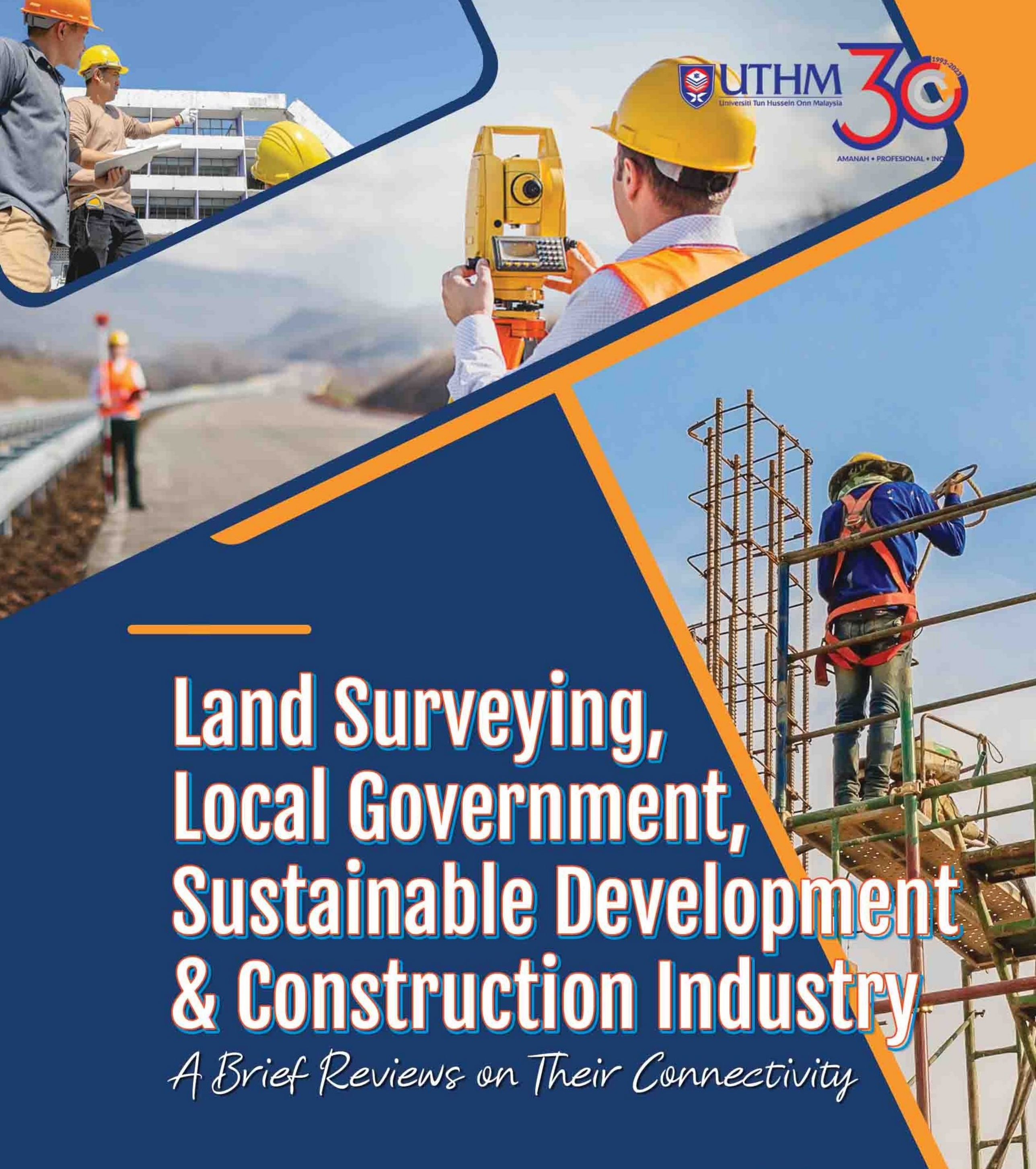
Abstract: Land surveying is an art and sciences that cannot be denied its contribution in the planning and development of any constructions project. It can lead to changes not only to human life but also to the surrounding environment since it deals with the exploration of new land or re using the old one. The intention of this book is to acquaint with the land surveying, local government, sustainable development and construction industry. Objectively, it is to make some connection from land surveying, local government, sustainable development and construction industry. Furthermore, it is to make sense the modernisation it can bring and move towards better living to all. This book is an effort to discuss and review on the relationship and connectivity of land surveying, local government, sustainable development and construction industry. This book materialised due to the realization that there is lack of books that revolve and connect land surveying, local government, sustainable development and construction industry. This book targeted at students majoring in construction management in institutions of higher learning in Malaysia. It is expected to be able to meet the needs for future generations and it is expected to have a positive impact on the community of academia and practitioners.

Keywords: Construction, development, surveying, sustainable



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CONTENT

PREFACE

Land surveying is an art and sciences that cannot be denied its contribution in the planning and development of any constructions project. It can lead to changes not only to human life but also to the surrounding environment since it deals with the exploration of new land or re using the old one. The intention of this book is to acquaint with the land surveying, local government, sustainable development and construction industry. Objectively, it is to make some connection from land surveying, local government, sustainable development to the construction industry. Furthermore, it is to make sense the modernisation it can bring and move towards better living to all. In addition, to look into the sustainability and continuity of community and also the lifespan of a building structure and the components in the building. This book is an effort to discuss and review on the relationship and connectivity of land surveying, local government, sustainable development and construction industry. Moreover, in a hope to look into the significant issues in construction that relate to the land surveying. This book materialised due to the realization that there is lack of books that revolve and connect land surveying, local government, sustainable development and construction industry. This book is targeted at students majoring in construction management in institutions of higher learning in Malaysia. The topics that have been chosen as the title of this book highlight the issues of land surveying, local government, sustainable development and construction industry. It is expected to be able to meet the needs for future generations and it is expected to have a positive impact on the community of academia and practitioners.

On this occasion, the editor would like to promote Center for Sustainable Infrastructure & Environmental Management. The Center for Sustainable Infrastructure & Environment Management (CSIEM) aims to find solutions in generating awareness towards greener environment and are constantly working to find solutions to mitigate climate change and balance development with human habitat and infrastructure. It is the vision of CSIEM for the construction industry to not be part of pollution but be part of the solution for a better tomorrow. CSIEM focuses on a wide range of research on infrastructure and sustainable environmental management. It constantly strives to provide expertise and development support in better environmental solutions especially for urban & rural communities, and hope to become a center of excellence in publication, research and consulting for sustainable infrastructure and environmental management. Hence, this book anticipates to draw attention from reader that want to look into the connection between construction industry with sustainable development.

Jazakumullahu khairan kathira.

Sulzakimin Hj Mohamed

INTRODUCTION 1

1.1 Introduction

Land surveying is an art with combination of science in measuring distances, bearing and angles on earth or near the surface of the earth. Moreover, surveying is scientific to the degree that rigorous mathematical techniques are used to analyse and adjust the survey data. The accuracy and thus reliability of the survey depend not only on the field expertise of the surveyor but also on the surveyor's understanding of the scientific principles underlying and affecting all forms of survey measurement. Surveying is indispensable to the construction industry. Project manager, civil engineer and others in the planning and design of the construction project as well as the architect must have a thorough understanding of the limits of accuracy possible in the land surveying to be employed in the construction site.

As for construction industry, it is the broad process adopted for the realisation of human settlements and the creation of infrastructure that supports those developments. However, the industry complains of lack of resources such as advanced equipment and skilled workers and support such as financial stability from sponsors and incentives from government on the development of sustainable human settlement. Therefore, to invest in the technological changes required for the application of the sustainability concept is quite intimidating as they are concerned on profitability. Moreover, the construction industry which responsible for the building and other infrastructure development has a significant impact on the environment. Furthermore, construction activities are across broad spectrum of activities that can loosely grouped into off-site, on-site and operational activities. While it is true that the change to more sustainable construction will incur some costs, however there are also associated savings resulting from efficient resource use, higher productivity and reduced risk. Moreover, the implementation of sustainable development concept as in the construction can be

LAND SURVEYING 2

2.1 Introduction

This chapter discusses the current reviews of the literature relevant to this book. The discussion is on the consideration surrounding the area upon which this book is based. It begins with a brief discussion of standpoint surrounding the topic and associated aspects with varying perspectives. Accordingly, this chapter presents the land surveying concept and definition and further discussion in relation to construction industry and local governments.

2.2 Land Surveying Work Categories

Fundamentally, Figure 2.1 shows the example of Land Survey that is classified into 2 categories, which is Plane Surveying and Geodetic Surveying.

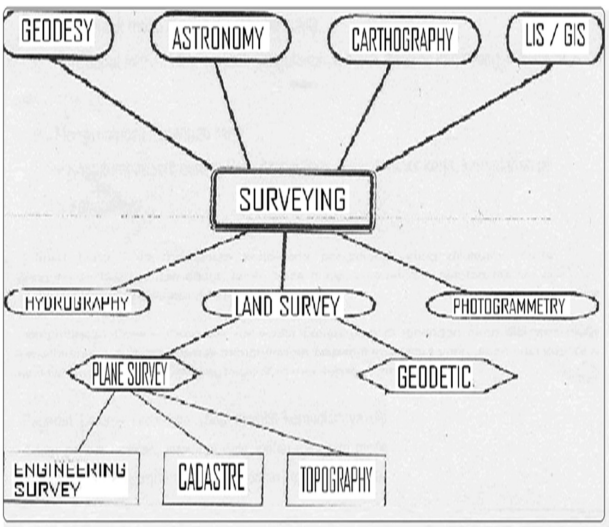

Figure 2.1: Plane and Geodetic Survey

MALAYSIAN LOCAL GOVERNMENTS 3

3.1 Introduction

This chapter discourses the current interpretations of Malaysia Local Government. The discussion is on the consideration surrounding the research area upon which this study is based. It begins with a brief discussion of standpoint surrounding the research and associated with these varying perspectives. Accordingly, this chapter presents the sustainable development concept and definition and further discussion in relation to knowledge transfer at the local governments level.

3.2 Local Government

The Malaysian government system is divided into three levels, namely federal, state and local government (Hussai, 2006; Phang, 2008). The local government forms the third tier of the government and as such, there are constraints to the capacity of the local government and often local governments also assume the mediatory role between the different levels of government and the people. The enforcement of Local Government Act 1976 established in essence only two types of local council - one for municipality and one for rural area. However, a city status can be conferred to a municipal council by the Yang di-Pertuan Agong with the consent of the Conference of Rulers once it reached the necessary criteria.

The position of local government in Malaysia is stated in Federal Constitution. By virtue of items 4 and 5 of Ninth Schedule of Federal Constitution, local government outside the Federal Territories of Kuala Lumpur, Labuan and Putrajaya is a subject under the State List. All local governments outside the Federal Territories are directly under the exclusive jurisdiction of States Government. This means local State Government has wide powers to control the local authorities.

4 SUSTAINABLE DEVELOPMENT

4.1 Introduction

This chapter discusses the existing reviews of the literature pertaining to sustainable development. The discussion is on the consideration surrounding the gist of sustainable development upon which this book is based. It begins with a brief discussion of what is sustainable development and associate with varying perspectives. Then the theoretical reviews of sustainable development are provided and guides this study and provides justification for the choice of this book's subject. Accordingly, this chapter presents the sustainable development concept and definition and further discussion in relation to construction industry.

4.2 Sustainable Development: A Brief Review

Since the 1992 Earth Summit in Rio, the year when Agenda 21 was formulated as the international blueprint for sustainable development, all sectors of society have been in the process of interpreting and pursuing sustainability & sustainable development within their specific contexts. Agenda 21 is a comprehensive plan of action including sustainable development in the development project area. Moreover, Agenda 21 has been a fundamental guideline to define sustainability in many areas in the development project concerning housing and building development.

Many scholars used Bruntland's definition, where development meets 'the needs of the present without compromising the ability of future generations to meet their own needs' when describing the term sustainable development or sustainability. Accordingly, when it comes to management-related activities, it will adopt an international approach in achieving sustainable consumption patterns and countries should be guided by the basic objectives of Brundtland in any efforts to address

CONSTRUCTION INDUSTRY 5

5.1 Introduction

This chapter provides a discussion on the philosophical surrounding the topic and discusses upon which this book is based. The construction industry is a very important and efficient sector for developing the Malaysian economic sector. Economic development is not only a major role in the development sector but also in improving the quality and standard of living of Malaysians (Khan et al., 2014). The construction industry has duties and responsibilities to ensure development is becoming more aware with sustainable development. Hence, can sustain in order to ensure the quality of life in the future. Such a profound change from the perspective of human history requires a decision to think strategically about the power of disruption and innovation in shaping the future (Schwab, 2015). Industrial Revolution 4.0 or simply better known as the IR 4.0 is characterised by a variety of state-of-the-art technologies. There are nine elements of industry 4.0 namely Augmented Reality, System Integration, Cloud Computing, Big Data, Internet of Things (IoT), 3D Printing, Cyber Security, Autonomous Robot and Simulation.

The circulation of this revolution can make the Malaysian economy face difficulties if the industry is not prepared. Therefore, it is significant for Malaysians in embracing the opportunities and benefits that can be derived as a result of the development of the revolution industrialisation that took place in the passage of time.

5.2 Construction Industry: A Brief Review

Construction is defined as the process of giving and preparing something which has a start to end time and deals with the work of building or making something, especially buildings, bridges, roads and its related surroundings (Izham, 2014; Cambridge Dictionary, 2022). Generally,

6 DISCUSSION AND CONCLUDING REMARKS

6.1 Introduction

In this chapter, it is to highlight subjects matters that are the gist of land surveying, local government, sustainable development and construction industry. This book used data from various sources such as previous studies, reports or documents and observation on land survey, local government, sustainable development and construction industry. Apart from that, interviewing is also conducted in order to get a pertinent insight and on-site exploration where 2 personnel each from land surveying organisation, local government and stakeholders of construction industry are interviewed and the session took around 15 to 30 minutes. Hence, this chapter will try to discuss further each chapter of this book. Hence, the importance of each subject and their connection with each other can be seen.

6.2 Discussion on the Development and Sustainability

The construction industry is one of the industries that is categorised as a major contributor to the economic development of a country in particular Malaysia. This is also clearly evidenced by the extensive provisions that have been made to improve the living standards of the community. The importance of this construction industry can clearly can be seen through the involvement of construction in various industries as well covering a wide range of fields. There are many activities that include industrial activities construction in Malaysia. Among them are the housing sector, industrial sector, sector commercial, market sector, and so on.

The pre-designing and designing phase of a construction project is usually where the impact of human error is the greatest, therefore awareness on new technology would greatly reduce the occurrence of

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