

**UNIVERSITI TEKNOLOGI MARA**

**Development Planning at The Coastal Area by Using  
Unmanned Aerial Vehicle (UAV) Image in Kuala  
Perlis**

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Thesis submitted in fulfilment of  
requirements for the degree of  
**Bachelor of Surveying Science and Geomatics (Hons)**

**Faculty of Architecture, Planning and Surveying**

**January 2020**

## AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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## **Abstract**

Urban planning is described as a connection to plan and national plans. Coastal development has led to increasing land demand, particularly in developed areas. The coastal areas of today are facing intense issues created by rapid urbanization, coastal erosion increasing sea level, global warming, and climate change. The aim of this study is to produce a three-dimensional (3D) development planning design based on orthophoto image at the coastal area in Kuala Perlis. The objective is to generate the digital of orthophoto image using UAV aerial images and to produce development planning at Kuala Perlis based on orthophoto image. Study area that has been chosen is Kuala Perlis, Perlis State with cover area 1.13 km<sup>2</sup>. This study involves three types of data which is interviewing with the government, Unmanned Aerial Vehicle (UAV) images data and Global Positioning System (GPS) observation which have five (5) Ground Control Points (GCPs). The Agisoft Metashape Professional software has been used to orient images, extract point clouds, construct a digital surface model (DSM) and create orthomosaic images. After that, digitize the orthophoto image by using AutoCAD then, import to sketch-up for 3D development. The final output in this study is a production of 3D development planning design which is attached from the digitizing of orthophoto images. The GCPs were used in this research is as an educational under the photogrammetry because it is only focus for development design. This method also can help Town Planner for the future development planning.

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