## THE INFLUENCE OF LAND USE ON THE URBAN HEAT ISLAND IN PERLIS STATE, MALAYSIA

#### NUR LILEYANA BINTI ZURAHAIMI 2021622176



### SCHOOL OF GEOMTICS SCIENCE AND NATURAL RESOURCES COLLEGE OF BUILT ENVIRONMENT UNIVERSITI TEKNOLOGI MARA MALAYSIA

AUGUST 2023

# THE INFLUENCE OF LAND USE ON THE URBAN HEAT ISLAND IN PERLIS STATE, MALAYSIA

### NUR LILEYANA BINTI ZURAHAIMI 2021622176



Thesis submitted to the Universiti Teknologi MARA Malaysia in partial fulfilment for the award of the degree of the Bachelor of Surveying Science and Geomatics (Honours)

AUGUST 2023

#### DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

In the event that my project/dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree of the Bachelor of Surveying Science and Geomatics (Honours) and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

Name of Student Student's ID No	: Nur Lileyana binti Zurahaimi : 2021622176
Project/Dissertation Title In Perlis State, Malaysia	: The Influence Of Land Use On The Urban Heat Island
Signature and Date	:

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the School and University and fulfils the requirements for the award of the degree of Bachelor of Surveying Science and Geomatics (Honours).

Name of Supervisor	: Gs Dr Nurul Ain binti Mohd Zaki
Signature and Date	:

### ABSTRACT

Urban heat island refers to the phenomenon that temperature in urban is higher than the suburban. It is one of the most obvious features of urban climate. One of the possible causes is the drastic reduction in the greenery areas. However, the increasing of temperature cause limits of production of plantations, at the same time effects the growth of economic. The relation of the land use types and the urban heat island has gradually become an important environmental problem that awaken general concern. This study tries to investigate and identify the land use types which influence the most to the increasing of ambient temperature in Perlis. The main tools are remote sensing data and ArcGIS to measure, monitoring and analysing the land use change and urban heat island. This study carried out at Perlis state, Malaysia. Three variables such as temperature, humidity and land use types will be used. The data analyse by extract values and comparing the results between In-Situ measurements and map. The analysis results show the land usage influenced urban temperature. This study can help awareness the importance of greenery areas to earth for people to reduce the global warming.

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	i
	ABSTRACT	ii
	ACKNOWLEDGEMENT	iii
	TABLE OF CONTENT	iv-vi
	LIST OF TABLES	viii
	LIST OF FIGURES	ix-xii
	LIST OF SYMBOLS	xiii
	LIST OF ABBREVIATIONS	xiiv
1	INTRODUCTION	1
	1.1 Introduction	1
	1.2 Research Background	1
	1.3Problem Statement	2
	1.4 Significance of Study	3
	1.5 Aim	3
	1.6 Objectives	3
	1.7 Scope and Limitations	4
	1.7.1 Limitation	4
2	LITERATURE REVIEW	
	2.1 Introduction	5
	2.2 Urban Heat Island (UHI)	5
	2.2.1 Impacts of Greenery Area for Urban Heat Island (UHI)	7
	2.3 Land Use Types	8
	2.4 Land Surface Temperature (LST)	9
	2.4.1 Equation to Estimate Land Surface Temperature (LS♥)	10