UNIVERSITI TEKNOLOGI MARA

ROBUST CONCRETE CRACK INSPECTION USING TERRESTRIAL LASER SCANNING

MUHAMMAD IKHSAN BIN IRWANSYAH

Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor Science of Geomatics/Master of Science

Faculty of Architecture, Planning and Surveying

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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.

Name of Student	:	Muhammad Ikhsan Bin Irwansyah
Student I.D. No.	:	2014958501
Programme	:	Bachelor of Survey Science & Surveying (Honours) – AP220
Faculty	:	Architecture, Planning & Surveying
Thesis/Dissertation Title	:	Robust Concrete Crack Inspection Using Terrestrial Laser Scanning
Signature of Student	:	.....
Date	:	July 2017

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rule and regulations of the Department and Universitiy and fulfils the requirement for the award of the degree of Bachelor of Surveying Science and Geomatics (Honours).

Nama of Supervisor	:	Sr Dr Mohd Azwan Bin Abbas
Signature and date	:	11.08.17.

ABSTRACT

Crack is one of the reasons why the deformation survey must be done to the building facade. Inspections need to be done in order to reduce risks and determine whether the building safe to live in or use. There are many ways to measure the crack but in this research is focusing on measuring the crack using the terrestrial laser scanner. The conventional method had a few limitations to measure the crack. However, this research aims to investigate robust procedure to perform crack inspection on building façade. The data will be collected using different laser scanner resolutions to determine which resolution is enough to visual the crack. The crack can be determine based on the intensity value as the crack on the building façade will give a different intensity value when the laser point interact with the crack and return to the laser scanner in order to record the data. Result from this research are to produce the robust procedure for crack detection using terrestrial laser scanner. As the conclusion, the implementation of terrestrial laser scanner is useful and effective method in crack detection purpose.

TABLE OF CONTENTS

CONFIRMATION BY PANEL OF EXAMINERS	i
AUTHOR'S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS / NOMENCLATURE	xiii

CHAPTER ONE

INTRODUCTION

1.1	RESEARCH BACKGROUND	1
1.2	PROBLEM STATEMENT	3
1.3	RESEARCH GAP	4
1.4	AIM	8
1.5	OBJECTIVE	8
1.6	SIGNIFICANT OF STUDY	8
1.7	RESEARCH METHODOLOGY	9
1.8	THESIS CONTENT	10

CHAPTER TWO

LITERATURE REVIEW

2.1	INTRODUCTION	11
2.2	CRACK DETECTION	11
	2.2.1 TOTAL STATION	12
	2.2.2 CLOSE RANGE PHOTOGRAMMETRY	12
	2.2.3 TERRESTRIAL LASER SCANNING	13
2.3	TERRESTRIAL LASER SCANNING	13
2.4	PRINCIPLE TERRESTRIAL LASER SCANNING	14

2.4.1 DISTANCE MEASUREMENT SYSTEM 14
2.4.1.1 TIME OF LIGHT 15
2.4.1.2 PHASE MEASUREMENT 15
2.4.1.1 TRIANGULATION METHOD 16
2.4.2 FIELD OF VIEW 17
2.4.2.1 HYBRID SCANNER 17
2.4.2.2 PANORAMIC SCANNER 18
2.4.2.3 CAMERA SCANNER 19
2.5 CONCLUSION 19

CHAPTER THREE
METHODOLOGY
3.1 INTRODUCTION 20
3.2 RESEARCH METHODOLOGY 20
3.3 STUDY AREA 23
3.4 DATA ACQUISITION 24
3.5 DATA PROCESSING 27
3.5.1 DATA CLEANING 28
3.5.2 VISUAL EVALUATION 29
3.5.3 DIMENSION ANALYSIS 30
3.5.4 CRACK IDENTIFICATION 31
3.6 CONCLUSION 32

CHAPTER FOUR
RESULTS AND ANALYSIS
4.1 INTRODUCTION 33
4.2 VISUAL EVALUATION 33
4.3 DIMENSION ANALYSIS 35
4.4 CRACK DETECTION 38
4.5 CONCLUSION 42