

**A STUDY ON REWORK DUE TO DESIGN CHANGES IN  
INFRASTRUCTURE PROJECTS IN MALDIVES**

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## **DECLARATION OF THE CANDIDATE AND SUPERVISOR**

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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The above candidate has carried out research for the Masters dissertation under my supervision.

Name of the supervisor:

Signature of the supervisor:

Date: 31<sup>st</sup> December 2017

## **DEDICATION**

I dedicate this research to my loving Mother Fathimath Idrees

## **ACKNOWLEDGEMENT**

It is my pleasure to acknowledge the support of various individuals who were journeyed with me in completion of my Masters Dissertation.

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## **ABSTRACT**

Rework is experienced in every construction project and it impacts projects performance severely. Reduction of rework had always received special attention construction industry. Researchers have identified that a rework event may occur at any phase of the construction project. Rework due to design components are common in construction project. The aim of the research was to reduce rework due to design changes in infrastructure project in Maldives and overcome those causes.

In this research, 28 causes of design changes were identified from previous work of researchers. After identifying the causes, the causes classified in to 8 groups with a design changes classification model. The research indicated that changes to scope by the client and changes to design schedule by the client as the most likely causes of design changes in civil infrastructure projects in Maldives. Moreover, it was found that the client as the major source of design changes.

The research used a mixed method design approach as a research methodology. To investigate the causes of design changes, a survey questionnaire was developed to identify the most likely causes of design changes from construction professionals in Maldives. Furthermore, to explore the collected quantitative data the researcher approached construction professional's expert in the industry to understand and discovered the reasons for the causation of design changes and to identify activities to minimize the occurrence of the design change causes.

The mostly likely cause of design changes in infrastructure projects in Maldives was, changes to scope by the client. Also, the client related causes were found as the major contributing group to design changes in infrastructure projects in Maldives. Hence, client, design consultant and constructors should emphasize to study thoroughly project background, review design drawings and design documents in the designing phase.

**Keywords:** Rework, Causes, Design Changes, Infrastructure Projects

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## **List of Abbreviation**

AGO	Auditor General office - Maldives
CBO	Congressional Budget Office - United States
MHI	Ministry of Housing and Infrastructure - Maldives
TPC	Total Project Cost
RII	Relative Importance Index
APCC	Australian Procurement and Construction Committee
CIDA	The Australian Construction Industry Development Agency
GDP	Gross Domestic Product
BOQ	Bill of Quantity
PLC	Project Life Cycle
COAA	Construction Owners Association of Alberta, USA
PTC	Project Total Cost

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