

**THE ESTABLISHMENT OF CONCEPTUAL  
FRAMEWORK TO IMPROVE THE CURRENT  
SAFETY PRACTICE RELATED TO THE  
ACCIDENTS IN MATERIAL HANDLING AT  
CONSTRUCTION SITES: A CASE STUDY FOR  
RESIDENTIAL AND INFRASTRUCTURE  
WORKS IN PULAU PINANG**

By

**NURUL SYAKIRAH BINTI MOHD SHAH**

This report is submitted as a  
partial requirement for the degree of  
**Bachelor of Engineering (Hons) Civil (Infrastructure)**

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## AUTHOR'S DECLARATION

I declare that this Final Project is the result of my own research and that all sources are acknowledged in the references. The activities in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. 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 Candidate : Nurul Syakirah binti Mohd Shah  
Student I.D No. : 2016210024  
Programme : Bachelor of Engineering (Hons) Civil (Infrastructure)  
Faculty : Civil Engineering  
Thesis :The Establishment of Conceptual Framework to Improve the Current Safety Practice Related to the Accidents in Material Handling at Construction Sites: A case Study for Residential and Infrastructure works in Pulau Pinang

Signature of Candidate : \_\_\_\_\_

Date : JULY 2019

## ABSTRACT

Material handling is part of occupational duties at construction sites. Recently, there were many accidents due to material handling which occurred at various sites in the country. These reports had been given wide publicity in the local media which raised great concern and anxiety among the public. Thus, the aim of this paper are; to determine the main causes of accident in material handling, investigate the main attributes of safety practice as a prevention tool for material handling accident, and to establish the conceptual framework to improve the current safety practice related to the accidents in material handling at construction sites. The data was collected through a questionnaire survey from 42 respondents and analysed using SPSS Software version 21.0 using ranking analysis (mean and standard deviation). Besides, direct observation method was also used and the data was analysed using frequency analysis in order to support the finding from questionnaire survey. The results showed that most of the respondents agreed that the critical causes of material handling accidents are worker-related factors, management-related factors and material and equipment-related factors. The safety practices attributes matched the suitable main causes and the result of the synthesized literature review. From the survey, it was found that there were three (3) priority safety practice attributes for every cause of material handling accident which are; individual involvement, management commitment and on site precaution. Finally, all the findings will be used to develop a conceptual framework to improve the current safety practice related to the accidents in material handling at construction sites. It will serve as a guideline to construction practitioners especially for the contractors to monitor and take preventative action in future to minimize the occurrence of material handling accidents in general as to impose safety at the construction sites especially in the residential and infrastructure works.

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