

CENTRE OF STUDIES FOR QUANTITY SURVEYING
FACULTY OF ARCHITECTURE, PLANNING & SURVEYING
UNIVERSITI TEKNOLOGI MARA
KOTA SAMARAHAN

INDUSTRIALIZED BUILDING SYSTEM (IBS) AS GREEN
TECHNOLOGY TOWARDS THE SUSTAINABILITY
BUILDING CONSTRUCTION
IN PERAK

Final Project submitted in partial fulfillment of the requirement
for the award of Bachelor of Quantity Surveying (Honours)

PREPARED BY: NUR AMIRA BINTI AZMAN (2019870342)
SEMESTER: MARCH 2021 – AUGUST 2021

ABSTRACT

The Malaysian construction industry has been lagging in technological advances in the construction industry. Therefore, the Malaysian construction industry is encouraged to shift the traditional construction method to another level of construction by using the Industrialized Building System (IBS) to implement current trends of technologies to the construction method. It can allow making IBS a technology that provides convenience toward sustainability and green technologies to the construction industry. Thus, the purpose of this study is to enhance the role of the Industrialized Building System (IBS) as green technology toward sustainable building construction in Perak. This research takes place in the state of Perak, Malaysia. On the other hand, sustainability and green construction problems have been highlighted as the major issues with obtaining healthy construction. As a result, there will be methods and efficient ways in enhancing IBS as green technology towards sustainable building construction, especially in Perak, Malaysia. Besides, the introduction of IBS gives the solution or potential to the construction industry. The study highlights the key in the state of Perak for the issue of the Industrialized Building System (IBS) as green technology toward sustainable building construction. Besides that, encourage IBS technology as the new construction method due to produce the green building to the structure and the role of IBS as the sustainability and green construction in the Malaysian Construction Industry.

Key Words: *Industrialized Building System (IBS), Green Construction, Sustainability, Perak.*

ACKNOWLEDGEMENT

Alhamdulillah, I would like to thank Allah SWT that I can finally complete this dissertation guided by my supervisor, Dr. Sylvia Gala Mong @ Agam. I'm also grateful to have met this dissertation by myself, even though I have a few research problems. Luckily, all the issues are settled with the help of my supervisor, Dr. Sylvia Gala Mong @ Agam, my parents, and my fellow friends.

I address a big thanks to our dear supervisor, Dr. Sylvia Gala Mong @ Agam. Without her guide and help, my dissertation can't be complete correctly. She also always teaches and guides me to understand the things that I should know and focus on. At the same time, I complete my dissertation to produce a good outcome from the research I have been studying. In addition, I would like to express my gratitude to all my lecturers in the Faculty of Architecture, Planning, and Surveying of Universiti Teknologi MARA (UiTM), Samarahan Campus, Sarawak Branch. Without their support and motivations, I may not be able to complete this dissertation. My praise to all my beloved friends fighting together to complete the dissertation and always have each other's back. They always give me moral support and ideas to improve in many ways while producing this dissertation. Indeed, I hope that all the efforts will provide a lot of benefits for all of us.

Last but not least, my appreciation and thankfulness towards my beloved parents for always support me. They were always giving advice and always encouraged me to not give up on everything good I did. I could repay your kindness to those who have directly and indirectly contributed towards completing my dissertation, which I may have missed. I appreciate single help, and may Allah s.w.t reward you. Thank you very much.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGEMENT	iii
List of Figures.....	ix
List of Tables.....	x
CHAPTER 1 – INTRODUCTION	12
1.1 Background of studies	12
1.2 Problem Statement.....	15
1.2.1 Limitations implementation of IBS in aspect of skill shortage	15
1.2.2 The challenges in implementing of IBS	16
1.2.3 The efficiency way in enhancing IBS.....	17
1.3 Research Objective, Question, Aim.....	17
1.3.1 Research Aim	17
1.3.2 Research Objectives	18
1.3.3 Research Questions.....	18
1.4 Scope of the Study	19
1.5 Significant of Study.....	20
1.6 Research Methodology.....	20
1.6.1 The Study Population	20
1.6.2 The Sampling Method	21
1.6.3 Data Collection Method	21
1.6.4 Data Analysis Techniques	21
1.7 Summary of Problem Statement, Aim, Research Questions, Research Objectives.....	23
1.8 Structure of Thesis.....	25
1.9 Summary of Chapter.....	26

CHAPTER 1

INTRODUCTION

1.1 Background of studies

The construction industry is essential to any nation's growth. It plays an economic role and contributes financial wealth and could significantly contribute to the other sectors. Besides, the construction industry provides an opportunity within every aspect such as economy, job opportunities, produce skilled labor, more technology to develop. (Kamarul et al., 2017) noted that the construction industry gives nearly 1.03 million people job opportunities, which is 8% of the total workforce. The construction industry is one of the most critical industries for employment creation since the breadth of activity is so broad. It is corroborated by (Zuhairi 2018), who stated that the industry grew at a pace of 5.3 percent in 2008 and contributed over 6% percent of the country's GDP. The current level of quality, productivity, lack of safety, non-environment friendly, the state of the Malaysian construction industry is not in line with the future development of Malaysia that stated by (CIDB 2016). Therefore, to solve the current problem, the Malaysian construction industry must adopt Industrialized Building System (IBS) in the construction industry. This technology also can produce IBS as green technology toward sustainable building construction.

In addition, according to the (Construction Industry Development Board (CIDB), 2017), the private sector adoption is still low at the round of 15%; meanwhile, the government projects are seeing the higher adoption at 70%. Thus, government projects required a specific requirement for projects that exceed RM10 million to have a minimum IBS score of 70, which is already in place. Presently, about 70% of