



**DEPARTMENT OF BUILDING  
UNIVERSITI TEKNOLOGI MARA  
(PERAK)**

**CONSTRUCTION OF ROOF BEAM STRUCTURE**

**Prepared by:**

**DAENG ARQEELIA ZAISARAH BINTI MOHAMED SETH**

**2019246024**

## ACKNOWLEDGEMENT

First and foremost, I would like to thank and give my deepest gratitude to the person who helps a lot in giving guidance in completing this practical report, Dr. Hasni Suryani bt Mat Hassan, my Practical Report Supervisor who countless gives her best guide throughout my 5 months of practical. Without the nonstop guidance from my practical report supervisor, I could not complete my practical report on time and beautifully.

Besides that, I would like to express my gratitude to my supervisor during my practical period, En. Mohammad Akhfar bin Mohd Arifin from Markh Bina Enterprise for giving guidance and helps regarding the topic of the practical report of mine. He always gives the permission to do research before going to the site for a better understanding on the project. I am thankful for him as he always gives moral support in finishing my practical report regardless his busy time.

I also would like to give a big thank to Puan Siti Aishah binti Kamarul Azman for his motherly care throughout my practical semester at Markh Bina Enterprise. Without her giving a ride to the construction site in Senawang, I would not know the progress of the construction site and could not complete my practical report. With her motherly care at the office, I felt safe with her there.

Last but not least, I would like to thank to my friends especially Nurul Asyura binti Md Zaini for helping me throughout the practical period at Markh Bina Enterprise. Without her help, I would not be here finishing my report practical together with her. Despite the hardship, pressure and stress we have been through together, we eventually help each other in completing the report based on the same project of the construction site till the end of our practical semester.

## **ABSTRACT**

Roof beam is a horizontal structural element that is built after the installation of column of the building. Roof beam structure is important as the final structure after column as it is used to bear the loads from roof trusses and roof covering. Therefore, this report will discuss about the installation of roof beam structure. This report was conducted at a construction site of a bungalow house located in a neighbourhood named Taman Setia Hati located in Sungai Landak, Seremban District, Negeri Sembilan. The objective of this report is to determine the process of roof beam structure is built on site. It will focus on the stages on how the process of the roof beam is done and carried out. This report will also look at the defects that are found on the structural elements. Last but not least, it will also explain the materials and tools that are used to solve the problems of the defects. From erecting the scaffolding, installing the formwork, pouring the concrete, compacting and curing the final result of the roof beam after the hardening process are done on site. To finalized, the installation of roof beam on the building project plays an important role as it holds the loads from installing the roof trusses and roof covering which protects the residence inside the house from weather and safe from any harms in the future.

# CONTENTS

<b>ACKNOWLEDGEMENT</b> .....	iv
<b>ABSTRACT</b> .....	v
<b>CONTENTS</b> .....	vi
<b>LIST OF TABLES</b> .....	vii
<b>LIST OF FIGURES</b> .....	viii
<b>CHAPTER 1.0</b> .....	1
<b>INTRODUCTION</b> .....	1
1.1 Background of Study .....	1
1.2 Objectives .....	2
1.3 Scope of Study .....	2
1.4 Method of study .....	3
<b>CHAPTER 2.0</b> .....	4
<b>COMPANY BACKGROUND</b> .....	4
2.1 Introduction of Company .....	4
2.2 Company Profile .....	6
2.3 Company Organisation Chart .....	7
2.4 List of Projects .....	8
2.4.1 Completed Projects .....	8
2.4.2 Project in Progress .....	9
<b>CHAPTER 3.0</b> .....	10
<b>CASE STUDY</b> .....	10
3.1 Introduction to Case Study .....	10
3.2 To identify the process of roof beam structure construction .....	13
3.2.1 Construction of Roof Beam Structure .....	19
3.3 The defects and solution of the structure construction .....	25
3.4 Material and tools used to solve the defects of the roof beam and column structure .....	28
<b>CHAPTER 4.0</b> .....	31
<b>CONCLUSION AND RECOMMENDATION</b> .....	31
<b>REFERENCES</b> .....	32

## **CHAPTER 1.0**

### **INTRODUCTION**

#### **1.1 Background of Study**

Floor slab, columns, walls, roof beam and windows are the components that can be categorized as superstructure components as they are built above the ground floor (TheConstructor, 2021). Superstructure also can be easily known as where the people stay and furniture are placed on top of the ground level in a house. For sure superstructure consumed more time and energy to be executed as the number of components above the ground is larger than substructure components (LetsBuild, 2019).

Footing is usually built in the untouched soil or known as Horizon soil and categorized as a substructure due to the structure itself is placed below the ground level. This structure gives support and preventing the house from being topple down when there are only loads at one side of the building (yourownarchitect, 2021). Pad foundation, raft foundation, strap foundation, wall foundation and pile foundation are the examples of footing used in construction.

Floor slab concrete is built as ground floor slab or upper level such as the first floor or the second floor of a building and also as roof slab. It's executed horizontally on the ground with the support of ground beam that is constructed around the floor plan of the site. (designbuildings, 2021) As for roof slab, it is usually used to placed water tank on top of it and normally used at Saudi Arabis due to their windy and sandy weather.

From the construction perspective, there are two types of beams which are ground beam and roof beam. In general, beam is a structural element that either made of concrete or steel which are installed horizontally over any opening. The