DEPARTMENT OF BUILDING
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INSTALLATION OF RAINWATER DOWNPIPE

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ABSTRACT

The project is about a construction of an integration building consists of library, main hall, student activities centre and office at Kolej Poly-Tech MARA, which is located at Bangi, Selangor. The construction period began from 29 February 2016 and supposedly completed on 28 August 2017 but delayed to 12 December 2019. The aim of the study is to discover the installation of rainwater downpipe which mainly focused on the installation method including its materials and types. The cost and time taken also was investigated together with the problems that occurred and its solutions. The method simply started from the cutting the pipe to its length, then join the other rainwater downpipe with the use of connection according to its used then hanging it with the steel bend. The main finding of the study other than the method is the cost concentrated around RM 16,870 and the time taken for the installation is 3 weeks. There are two problems occurred during the case study and the solutions had been taken to solve the problems. All in all, the rainwater downpipe was an easy thing to install but its purpose was very important to be taken in an aspect of a building.

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INTRODUCTION

1.1 Background and Scope of Study

Rainwater Downpipe are one of the elements to be installed in the construction of building. It is a pipe that is used to direct rainwater away from a building. It is typically travelling from the roof guttering to a drainage system below (Building, 2019). Rainwater is a collection of water from the clouds through the process of precipitation or rain. Downpipe is typically vertical and extends to ground level by attaching to the corners of a building.

Initially, the rainwater downpipe was made with simply cast iron but recently the construction building nowadays tends to prefer the pipe made from Polyvinyl Chloride or PVC due to its lightweight with a very good durability that ease the installation and low maintenance. A close cousin of it which is uPVC makes an even better construction material. The "u" in uPVC stands for "unplasticized," is more rigid, stronger and more solvent sensitive (Strong, 2006). The smooth inner walls allow water to flow smoothly with less turbulence.

Rainwater downpipes can be in any shape, but round is the most commonly installed at the building. The diameter of the pipe has a ranging from 50 – 160 mm and the size can be determined from the intensity of the rainfall and the total roof surface area to be drained below. Each pipe has a length of 5.8m long and the installation may require a connection and bracket, or steel band is used to hang the rainwater downpipe. Primarily, the aim of the study is to discover the installation of rainwater downpipe.

The study is carried out at a construction site of an integration building consists of library, main hall, student activities centre and office at Kolej Poly-Tech MARA which is located at Bangi, Selangor. The study focused on the installation method of rainwater downpipe including the type of pipes and connections used. The study also covered the investigation of cost and time taken to install. Finally, every problem occurred is determined with its solution taken to solve the problem.