



**MARA UNIVERSITY OF TECHNOLOGY
ARAU CAMPUS
PERLIS**

**FINAL YEAR PROJECT REPORT
DIPLOMA IN MECHANICAL ENGINEERING**

**FIRE FIGHTING SYSTEM
FOR
INAI COLLEGE AND TEJA COLLEGE
UiTM CAMPUS ARAU**

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INTRODUCTION

Our project is to study about fire fighting at Inai and Teja college at UiTM Arau for one. We need to study about the system because the building is big size and it had been use for a long time. For this size of building, it is not suitable for using only the fire extinguisher. The fire extinguisher in those building is not enough to extinguish to prevent fire from spreading. From our observation, there are many factors that can cause the spreading of fire in that building. A part of the building is made from woods and plastics. Most of them at the ceiling and roof.

Because of that, fire fighting reel system is the ideal system for that location. It can prevent the fire from spreading until the rescues arrive. The length of the hoses (100ft) can cover the building from fire. The fire fighting system is the easy system to use. Any body can use this system, when the fire occurs. This proposed fire fighting systems consist 2 pumps, electrical and diesel pump. When the hose reel nozzle is open, the pumps is operated either diesel or electrical pump. The diesel pump is the back up pump if the electric supply is cut-off.

In this final project, we have calculated the suitable pumps and draw the pipelines layout for hose reel system. We also include the list of equipments needed and its estimated price to make this project viable. Many requirements in this project are based on JKR, Mechanical Department because all government buildings must obey the requirement and rules from JKR (Jabatan Kerja Raya) and Jabatan Bomba dan Penyelamat.

REQUIREMENTS FOR FIRE FIGHTING SYSTEM

This entire requirement is based on from the JKR Mechanical Department for Architectural and Structure to Installation Mechanical Devices in Government Building (First edition – 1992)

General Requirements

Table 1.

Fire fighting system selection

Size of Building	Extinguishing System	Fire Alarm System
4 storeys and less OR less than 1,000 m ² gross floor area	Not required	Not required
5 storeys and less OR less than 1,000 m ² gross floor area	Hose Reel	Break glass
Exceeding 18 m height BUT not less than 10,000 m ² gross floor area	Hose Reel Dry Riser	Break glass Fire Detectors
Exceeding 30 m height OR 10,000 m ² gross floor area	Hose Reel Wet Riser Sprinkles	Break glass