

DEPARTMENT OF QUANTITY SURVEYING
FACULTY OF ARCHITECTURE, PLANNING & SURVEYING
UNIVERSITI TEKNOLOGI MARA
SERI ISKANDAR, PERAK

**IMPLEMENTATION OF ACTIVE FIRE PROTECTION
SYSTEM IN SELANGOR TAHFIZ SHCOOLS**

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

NUR ZAFIRAH BINTI MOHD MAZDI
(2017488876)
SEMESTER: MARCH 2019 - JULY 2019

ABSTRACT

Tahfiz schools were introduced in the 1960s when Malaysia's first prime minister, Tunku Abdul Rahman, started one in the national mosque in downtown Kuala Lumpur. However, there are many issues in Tahfiz schools toward the fire. Fire protection system refers to measures taken to prevent fire from becoming destructive, reduce the impact of uncontrolled fire and save lives and property. Therefore, the aim of this research is to explore the implementation of active fire protection system in Selangor Tahfiz schools. Objective of this research are to identify the types of active fire protection system implemented in hostel's Tahfiz schools, to determine the challenges toward the effectiveness of fire protection system in hostel's Tahfiz schools and to recommend the strategy to improve the fire protection system in hostel's Tahfiz schools. To achieve the objectives, data of this research will be collecting through quantitative and qualitative method, which is by observation and questionnaires to the owner of the Tahfiz schools. The tahfiz schools that have been observed is 32 schools and for the questionnaire were distributed to the 65 owner of tahfiz schools. The Statistical Package for Social Science (SPSS) with Version 23 is used to analysed the data from questionnaire. The result of observation that concluded, the fire protection system is available at tahfiz schools and the research also found that the most significance challenges toward the effectiveness of fire protection system at hostel's tahfiz schools is the cost for installation the fire protection system is high. In conclusion, this research result will help the owner of the tahfiz school to improve the fire protection system at their Tahfiz schools.

Keywords: Implementation, Active fire protection system, Tahfiz schools.

ACKNOWLEDGEMENT

With high gratitude to Allah S.W.T. who gave me the ideas and physical strength in preparing this final project/dissertation. Completion of a project of this nature requires more than just the efforts of the author. I wish to express my gratitude to the persons and all parties who responded to the survey and also offered their invaluable contributions in carrying out this final project/dissertation.

First of all, I would like to express my appreciation and acknowledgement to my supervisor who has given me guidance and unfailing support and contribution of ideas in preparing this final project/dissertation. Also a special thanks for her insightful supervision, encouragement, thoughtful criticisms throughout the research and her creative suggestions.

My gratitude also goes to all those who agreed to be respondents, formally and informally and gave me the benefit of their knowledge, views and experience. I am also indebted to all my friends for their moral support and encouragement during the preparation of this final project/dissertation.

Finally, I would like to thank my beloved parents and family members, who never stop giving me their encouragement and full support in order for me to complete my final project/dissertation. Thank you for all the understanding given to me when I really needed it.

Thank you.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF FIGURES	vii
LIST OF TABLES	x
LIST OF ABBREVIATIONS	xii
CHAPTER 1: INTRODUCTION	1
1.1 INTRODUCTION	1
1.2 PROBLEM STATEMENT	2
1.3 RESEARCH AIM	3
1.4 RESEARCH QUESTIONS	4
1.5 RESEARCH OBJECTIVES	4
1.6 SCOPE OF RESEARCH	5
1.7 RESEARCH METHODOLOGY	5
1.8 CHAPTER OUTLINE	8
Chapter 1: Introduction	8
Chapter 2: Literature Review	8
Chapter 3: Research Methodology	8
Chapter 4: Data Analysis, Results and Findings	8
Chapter 5: Conclusion and Recommendation	9
1.9 CHAPTER SUMMARY	9
CHAPTER 2: LITERATURE REVIEW	10
2.1 DEFINITION	10
2.1.1 Fire	10
2.1.2 Fire Protection System	11
2.1.3 Tahfiz Schools	13
2.2 TYPES OF ACTIVE FIRE PROTECTION SYSTEM	14
2.2.1 Fire Extinguisher	14
2.2.2 Automatic Sprinkler Systems	20
2.2.3 Fire Alarm	22
2.2.4 Fire Hose Reel	26
2.3 THE CHALLENGES TOWARD THE EFFECTIVENESS OF FIRE PROTECTION SYSTEM	27
2.3.1 High Cost of Installing Fire Protection System	27

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Based on Safeopedia (2017) fire protection system refers to measures taken to prevent fire from becoming destructive, reduce the impact of uncontrolled fire and save lives and property. There are two types of fire protection system that should ideally be installed in a building, for not only prevention and protection, but suppression as well. The types are active and passive fire protection. Active fire protection includes automatic fire detection and fire suppression systems while the passive fire protection's main purpose is to attempt to contain fires or slower their spread (Mróz, Hager and Korniejenko, 2016).

According to Maurice (2015), fire is a rapid oxidation of the material that through chemical proses of combustion. The combustion process will release heat, light and various reaction products. Any fire no matter what the causes is, are results of the burning of a large number of flammable and combustible materials (Zhang, 2018).

In Malaysia, the government organization that is responsible towards fire and life safety is the Fire and Rescue Department Malaysia (FRDM). However, the owner of the building also have responsibility to make sure the building have the fire safety system accordance with the regulations in the Uniform Building By-Law (UBBL).

It is important that the building should have a proper fire protection system in place to keep any fire from spreading. A good fire protection system is worth investing in, since it could potentially save that particular building as well as its surrounding from damages. Fire tends to spread rapidly once they start and can cause major damage in short periods