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APPLICATION OF FIRE SAFETY AT INFORMAL ISLAMIC SCHOOLS

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Abstract:
Fire safety is a performance characteristic of buildings. The technological functions of fire safety systems interact with the systems that are necessary for other environmental control systems and to fulfill other performance characteristics expected from the building. For some aspects of fire safety, the systems need to generate the ambient environment and the control expected over the environment. Fire safety needs to be conceptually the same systems in order to control the environment that changes due to intrusion of products or combustion. The aim of the study was to investigate the applications of fire safety at Informal Islamic Schools. The result from the study shows that lower requirement of fire safety must be improved for the occupier's safety which includes teachers and students.

Keywords: Application; Active Fire Protection System; Passive Fire Protection System; Fire Safety; Informal Islamic Schools

1.0 INTRODUCTION

Active Fire Protection (AFP) is a group of systems that require some amount of action or motion in order to work efficiently in the event of a fire. Actions may be manually operated, like a fire extinguisher or automatic, like a sprinkler, but either way they require some amount of action. AFP includes fire or smoke alarm systems, sprinkler systems, and fire extinguishers as well as firefighters. Passive Fire Protection (PFP) is a group of systems that compartmentalize a building through the use of fire-resistance rated walls or floors (Purkiss & Li, 2013). Compartmentalizing your building into smaller sections helps to slow or prevent the spread of fire or smoke from one room to the next. In addition, PFP helps to limit the amount of damage done to a building and provides its occupants more time for evacuation. PFP includes fire or smoke dampers, fire doors, and fire walls or floors. The application of fire safety at Informal Islamic Schools was located at Maran, Pahang. The case study was conducted at Maahad Tarbiah Darul Hijrah Al-Islamiah (Pondok Ibu Jah) and Madrasah Raudhah Al-Muhibbin (Pondok Pok Kob). The issues or known as main problem was based on the chronology of fire incidents. There are 33 schools burned within 10 years from year 2007 until 2017. The case of fire burning at informal Islamic school has increased yearly. Thus, the objective of the case study was to identify the application of fire safety at Informal Islamic Schools and to propose minimum requirement of fire safety including fire protection systems (passive and active fire protection) to reduce the number of burned school statistics. The case study is to study issues related to the applications of fire safety at Informal Islamic Schools.

2.0 LITERATURE REVIEW

The literature review for this section describes the basic requirements for fire safety and how when it is not implemented properly may cause loss of lives. The literature review helps to support the study and the topic of the study on the problem arise nowadays on fire spread at the Informal Islamic Schools. Table 1 shows the fire incidents in year 2017 as illustrated below:

Table 1: List of chronology of fire incidents in 2017

YEAR 2017	
DATE	**CASE**
13th January 2017	A tahfiz student sustained injuries in a fire at the hostel of Pondok Nurul Iman in Kampung Tanjung Batu, Nenasi in Pekan, Pahang
16th January 2017	The An-Nuur Islamic Education Centre, better known as Pondok an-Nuur in Pantai Sepat, Kuantan, Pahang, which housed 113 students, was razed in a fire. This was the second such incident since 2006, when a blaze razed the students' hostel.
7th February 2017	A total of 73 female religious school students in Maran, Pahang, were left with just the clothes on their back when a fire destroyed their hostel.
28th February 2017	Pondok Al-Baghdadi in Tumpat, Kelantan, which accommodated 100 students aged between 15 and 30, was destroyed in a fire. No casualties were reported.
17th April 2017	Ten residential buildings of Pondok Seri Permai in Pasir Puteh, Kelantan, were destroyed in a fire, leading to losses estimated at RM161,000.
30th April 2017	Thirty students of Mahaad Tahfiz Al-Quran Al-Ismailiyah Mukim Lalang, Banggol Chicha, Pasir Mas, Kelantan, saw their hostel reduced to ashes in a blaze.
3rd July 2017	The store room of the Al-Islah residential religious school in Teluk Intan, Perak, which accommodated 68 students, was destroyed in a fire.
4th July 2017	The Addiniah Al-Latifiah residential religious school in Pengkalan Hulu, Perak, which had 66 students, was destroyed in a fire.
30th July 2017	Two hostel blocks of Maahad Tahfiz Al-Barakah in Sepang, Selangor, which housed 100 male students, were razed in a fire.
14th September 2017	A total of 22 students and two teachers were killed in a fire at the Darul Quran Ittifaqiyah in the federal capital. The incident was believed to be caused by a short-circuit.

Source: Online newspaper (local)

3.0 METHODOLOGY

Research method is the various procedures, schemes and algorithms used in research. All the methods used by a researcher during a research study are termed as research method. Research method helps to collect samples, data and find a solution to a problem. Particularly, scientific research methods call for explanations based on collected facts, measurements and observations and not on reasoning alone. The method used was quantitative through a survey questionnaire. The respondents are from teachers and students. Method of distribution is by simple random sampling to respondent for selected Informal Islamic Schools which is Maahad Tarbiah Darul Hijrah Al-Islamiah and Madrasah Raudhah Al-Muhibbin.

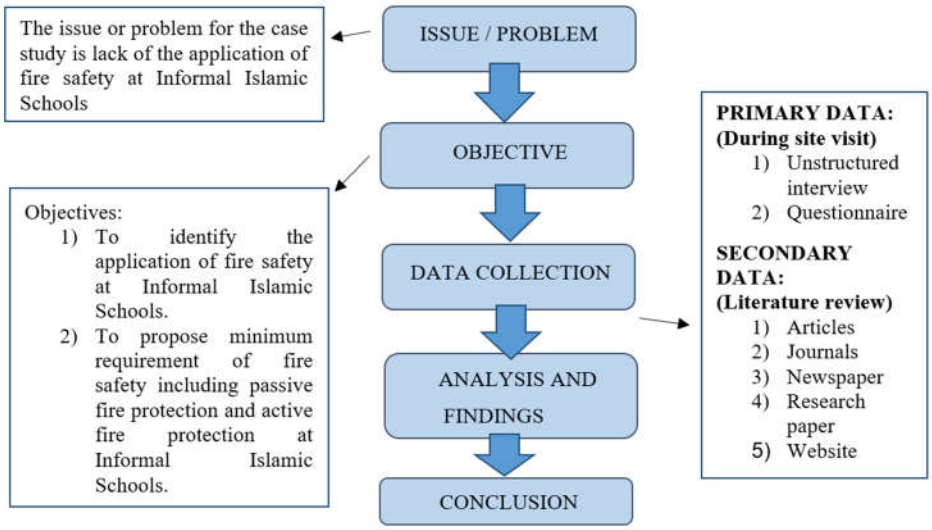

Figure 1: Research Design

4.0 ANALYSIS AND FINDINGS

The finding from the study shows the result of data collection of this case study. The questionnaire was distributed and answered by individual. The questionnaire was divided into two sections which is Section A and Section B. Section A is to identify the respondent's information and Section B focuses on information of school which is school background, requirement of fire safety and perception towards BOMBA. After the data was collected, it is revealed that the respondents were from students and teachers which is 27 respondents and 3 teachers of each school. The data analysis is taken to achieve two objectives which was to identify the application of fire safety at Informal Islamic Schools and the second was to propose a minimum requirement of fire safety including passive and active fire protection at Informal Islamic Schools. The table 2 below shows the overall result for the analysis for Section A.

Table 2: Demographic of respondent

CHARACTERISTIC		FREQUENCY	
		MAAHAD TARBIAH DARUL HIJRAH AL-ISLAMIAH	MADRASAH RAUDHAH AL-MUHIBBIN
GENDER	Male	16	28
	Female	14	2
AGE	10 – 20 years old	27	25
	21 – 30 years old	1	0
	31 – 40 years old	1	1
	41 years old and above	1	4
STATUS	Single	3	3
	Married	27	27
POSITION	Teacher	3	3
	Student	27	27
PERIOD LIVE IN THE SCHOOL	1 – 5 years	27	27
	16 years and above	3	3

To achieve objective 1, the respondents answered the questionnaire given. The first objective was important to know the condition of the Maahad Tarbiah Darul Hijrah Al-Islamiah and Madrasah Raudhah Al-Muhibbin. So, we can identify the requirement of fire safety is not enough at both schools. It is also

important to relate with objective 2. Thus, through the questionnaire, the researcher can identify the application of fire safety at both of schools as below:

Table 3: Application of fire safety for case study

REQUIREMENT	MAAHAD TARBIAH DARUL HIJRAH AL-ISLAMIAH	MADRASAH RAUDHAH AL-MUHIBBIN	REMARKS
Means of escape (MOE)	Yes	Yes	Both of school had MOE and lead by BOMBA
Assembly point	Yes	Yes	Improper condition because the small area for assembly point.
Fire extinguisher	Yes	Yes	Well function
Fire hydrant	Yes	Yes	Good condition
Communication system	Yes	Yes	Well function but not for all network coverage
Speaker	Yes	Yes	Well function
Exit sign	Yes	No	Will improve by the school
Fire drill	Yes	No	Will improve by the school

The second objective is to propose a minimum requirement of fire safety including passive and active fire protection at Informal Islamic Schools. In Chapter 2 known as literature review, researcher had answered this objective. The requirement is shown below:

Table 4: Minimum requirement of fire protection

SOURCES	REQUIREMENT OF FIRE PROTECTION	
	PASSIVE	ACTIVE
Jones (2017)	• Fire resistant walls • Fire doors • Heat resistant glass window	• Alarm and sprinkler systems • Fire extinguishers
Mohd Shariff (2017)	• Fire door • Staircases	• Exit sign • Fire extinguisher • Fire drill
Fire Services Department (2008)	• Compartment walls and floor	• Sprinkler system • Fire extinguishing
Fire Services Department (2008)	• Means of Escape (MOE)	• Sprinkler system • Fire extinguisher • Fire hose reels • Smoke detector • Fire drill
Fire Services Department (2008)	• Means of Escape (MOE) • Smoke detector	• Sprinkler system • Fire fighting • Fire hydrant • Hose reel
Fire Services Department (2008)	• Assembly point • Roll call	• Alarm operation • Fire drill
Fire Services Department (2008)	• Room and floor designations • Concept and design	• Fire hydrant • Sprinkler system • Fire alarm & communication system

5.0 CONCLUSION

For the conclusion, it can be concluded that Madrasah Raudhah Al-Muhibbin has lower requirement of fire safety compared to Maahad Tarbiah Darul Hijrah Al-Islamiah. Both schools are located in Maran, Pahang. The schools do not have any specified team to conduct the management of fire safety. Actually, teachers must be alert and aware of the risk in school without the requirement of fire safety. Madrasah Raudhah Al-Muhibbin is located in rural area. This means there are many obstacles to BOMBA arrive when the fire is happening like narrow road and village road. So, it takes a long time for BOMBA to arrive compared to Maahad Tarbiah Darul Hijrah Al-Islamiah which is located at prior road although the road is narrow. The Madrasah Raudhah Al-Muhibbin was registered under the Jabatan Agama Islam Pahang on 12nd March 2018 so the school is not exposed to the requirement of fire safety by BOMBA such as how to use exit sign, fire drill and so on. When compared with Maahad Tarbiah Darul Hijrah Al-Islamiah, the school is already registered with the Jabatan Agama Islam Pahang so the school is exposed to the requirement of fire safety. The recommendation after collecting and analysing the data are as follow:

1. Talk on Safety

Based on the data analysis, the respondents have not received a briefing talk by BOMBA. The school must consider the fire safety is the utmost most important at the school. The students must be exposed to the knowledge of how to use the firefighting system whether it is active fire system or passive fire system which is fire extinguisher, hose reel and exit sign during a fire.

2. Proper assembly point

Maahad Tarbiah Darul Hijrah Al-Islamiah and Madrasah Raudhah Al-Muhibbin have assembly point but improper condition. Thus, it would be better suggestion if both schools must be provided with a proper assembly point according to BOMBA description and approval.

3. Fire drill

Based on the data, the students of Madrasah Raudhah Al-Muhibbin are not exposed with fire drill. Fire drill is important because as a preparation for students about what to do if fire occur. According to the BOMBA, fire drill needs to be done once per year.

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