The Fire Safety Compliance Requirements and Issues of Renovated Shop Office for Education Space: A Study of Tuition Centre Building

Nur Khairul Faizah Mustafa[1], Adi Irfan Bin Che Ani[2], Sharyzee Mohmad Shukri[3], Siti Hafsah Zulkarnain[4], Wan Nor Faezah Wan Mustaffa[5]

[1]Faculty of Architecture and Built Environment, Infrastructure University Kuala Lumpur (IUKL), PhD candidate, National University Malaysia (UKM), Malaysia
[2]Strategic Asset Management, Department of Architecture and Built Environment, Faculty of Engineering and Built Environment, National University of Malaysia (UKM), Malaysia
[3]Department of Architecture, Faculty of Built Environment, University Malaya (UM), Malaysia
[4]School of Real Estate and Building Surveying, College of Built Environment, Universiti Teknologi MARA, Malaysia
[5]College Community Tanjong Karang, Polytechnic and Community College Education Department, Ministry of Higher Education (MOHE), Malaysia
Email: nurkhairul@iukl.edu.my

Abstract

The safety of educational space, particularly tuition centres, is a vital concern to ensure a secure and conducive learning environment. Fire safety is one of the critical aspects of building design and management, directly impacting the well-being of students, staff and the overall community. Safeguarding the occupant's safety is of utmost importance when renovating tuition centre buildings, requiring approval from relevant authorities, notably the Fire and Rescue Department Malaysia, referred as FRDM. This study meticulously examined the fire safety requirement of tuition centres located at shop office as an education space. The study comprehensively addressed the fire safety regulations in the context of premise which is run as a learning centre under the supervision of Private Educational Institutions (PEI). Strict compliance with these regulations is mandatory for all private learning centres, including tuition centres, prior to the commencement of any operations. Employing a qualitative methodology, this study utilized series of interviews to investigate the compliance requirement and issues associated with the renovation of shop office into tuition centres business. The study was extended to examine the perspectives of FRDM requirements. Semi-structured interviews were conducted with the officers from the purposive sampling via expert sampling focus group category supplemented by the collection of secondary data, fostering a wide-ranged discussion on strategies at rectifying non-compliance issues. By delving into the intricacies of fire safety requirements, this study aims to contribute valuable insights that will enhance the safety standards of private education institutions, especially tuition centres for the benefit of both authorities and the public.

Keywords: Compliance, Fire Safety Requirements, Shop Office, Education Space. Tuition Centre.

1. Introduction

Achieving optimal fire safety necessitates a comprehensive approach that integrates both the initial implementation and continuous maintenance of safety measures. Complying the fire safety measures in an education space typically tuition centre is needed to protect the lives of students and staff, secure the facilities and ensure uninterrupted educational activities. A thorough understanding of the interconnected elements that contribute to a safe environment is essential for ensuring effective fire safety practices. As explained by [1], the changes in buildings such as repairs, extensions and changes of occupancy type, could increase the fire risk level and need a review of the new condition of buildings. As a result, it is crucial to establish specific codes for assessing and improving fire safety in existing buildings.

The primary legislation governing the education sector in Malaysia is the Education Act 1996. With reference to [2], tuition centres are required to operate in shop houses or buildings designated for commercial purposes. Premises outside of these specifications are not permitted unless approved by the Local Authorities.

According to statistics from the [3], 6,315 cases of structural fires were recorded in December 2022, 7,477 cases in 2021, 6,910 cases in 2020, and 7,393 cases in 2019. The total number of fires on occupied premises remained high throughout the year. Fire analysis revealed that shop premises were the second-highest contributor to building fire statistics nationwide, following residential premises. Although the trend appears inconsistent, the annual number of cases remains a significant concern. Therefore, as tuition centres are typically located within shop office premises, compliance with fire safety regulations becomes a major factor in issuing recommendation letters for business license approval by the Local Authority.

2. Methodology

The research methodology had deployed qualitative method to identify the fire safety compliance requirement for tuition centres. It involved documents review by investigating the fire safety standards from Uniform Building By-Law 1984 (UBBL), Malaysian Standard (MS) and British Standard (BS). The basic requirements also have been highlighted in various law and regulation including Education Act 1996, National Education Policy, Private Education Institution Policy and Fire Services Act 1988.

Purposive sampling was selected before conducting any interviews with the targeted respondents. According to [4] purposive sampling entails selecting research participants based on a specific purpose. For example, participants might be chosen because of their occupations, such as judges, police officers, or lawyers. In line with expert sampling, the researcher gathers individuals with specialized knowledge and experience in a particular area to gain their insights on an issue. Therefore, the qualified respondents that able to delve in depth into the fire safety

issues highlighted in this study were from the Fire and Rescue Department Malaysia (FRDM) through semi structured interview session.

The main areas covered in the study focused on the fire safety requirements for tuition centre buildings and the issues encountered in complying with these standards for renovated shop office.

3. An Overview of Tuition Centre as Education Space

The growth of tuition centres in Malaysia has widely introduced and seeks for higher demand especially for the primary and secondary school's students. This scenario has been supported by [5] who agreed that the demand for tuition in Malaysia has increased and become one of wealthy venture in private education business. As outlined by the [6], education is one of the most critical drivers for the transformation from a middle- to high-income nation due its impact on productivity and human capital development. It was marked as one of 12 National Key Economic Areas (NKEA) that focuses on strengthening the private education services sector by increasing private consumption and investments as well as expanding education exports.

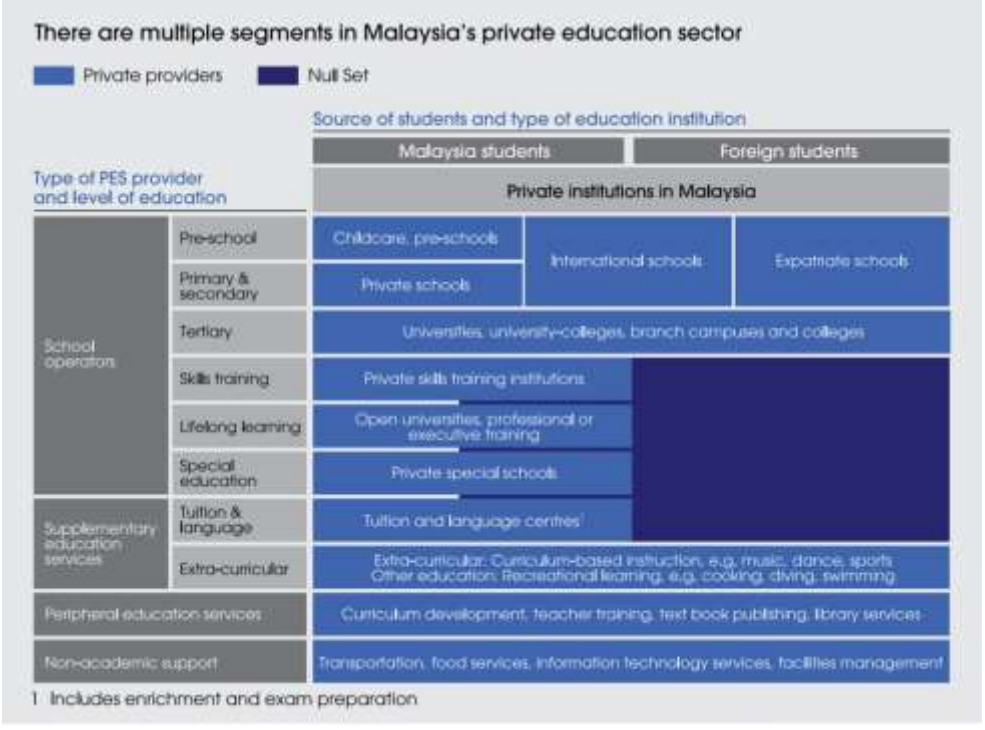

Fig. 1 The Multiple Segments in Malaysia's Private Education Sector. Source: Economics Transformation Programme (2010), p.477

Figure 1 depicted the multiple segments in the private education sector that explained the nature of services provided and the age of the learner targeted. In 2009, there were approximately 10,000 providers serving over 1 million students. Most providers are SMEs that focus on a particular phase in the education value chain. However, there are a growing number of large, national players that span multiple education phases.

As revealed by [7], tuition centre has various names, among which the most common in the English language is private supplementary tutoring. Alternative vocabulary, particularly in Bangladesh, India, and Pakistan, includes private tuition and coaching. Institutionally, Japan is famous for its jukus, the Republic of Korea for its hagwons, and Taiwan for its buxiban. This shadow education is driven by examinations at either the school or system level. Figure 2 presents a matrix of personal growth contrasted with examination-oriented work, and of activities in and outside schooling. It demonstrated the complementary relationship between standardized schooling and outsourced education.

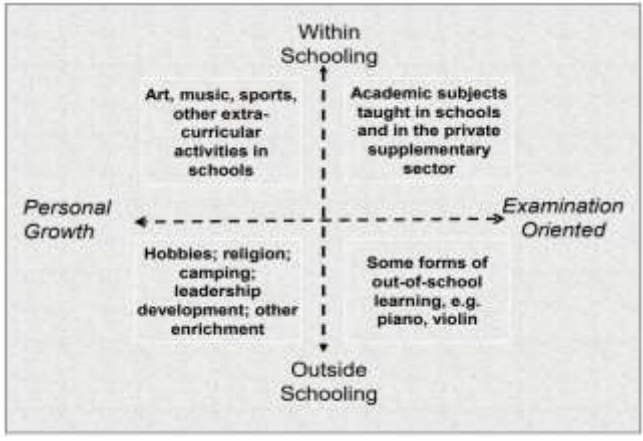

Fig. 2 Types of Learning Within and Outside Schooling. Source: Bray & Kwo (2014), p.6

As explained by [8], shadow education may occur at any time of the day, month or year and is not commonly evaluated by formal experts. The terms used by researchers to examine student activities outside of formal schooling include shadow education [9] and [10], additional instruction [11], afterschool programs, after-school time, alternative education, cram school, engaged activities, extended learning or education [12], extracurricular activities [13], group learning, outside-school time [14], private supplementary tutoring, summer learning [15], supplementary tutoring, and tutoring. This interpretation indicated that the tuition centre is highly functional, practical and essential to meet the widespread demand in various markets.

Tuition centre is a private institution that conducts classes in a building that has been renovated resembling a classroom setup. In Malaysia, tuition centres are required to adhere to the Education Act 1996 and the National Education Policy. The establishment of tuition centres is exposed to an education that involved the national exams such as the Malaysian Certificate of Education (SPM), Form 3 Assessment (PT3) and also Primary School Achievement Test (UPSR). Even

though the PT3 and UPSR had been abolished by the Ministry of Education (MOE), the new approach of School-Based Assessments (PBS) has now been implemented. This agenda had been highlighted in the Malaysian Education Development Plan (PPPM) 2013-2025: Education Transformation Forum, themed: One Collective Experience, Shared Responsibility by the Senior Education Minister, Datuk Dr Mohd Radzi Md Jidin as reported by [16]. Based on the transformation, it has made a lot of changes in the education system both public and private sector.

TABLE I DATA TREND ON NUMBERS OF PRIVATE EDUCATION INSTITUTION, ENROLMENT AND TEACHER YEAR 2009-2019

Year	Language Centre			Skill Training Centre			Computer Training Centre			Enrichment Centre			Tuition Centre		
	Bil.	Enrolment	Teacher	Bil.	Enrolment	Teacher	Bil.	Enrolment	Teacher	Bil.	Enrolment	Teacher	Bil.	Enrolment	Teacher
2009	341	33775	1027	289	14035	1126	380	13570	1045	895	28213	887	2871	213691	12335
2010	288	41729	1519	327	15121	490	325	12918	3615	614	30942	1120	2976	194567	10912
2011	271	40945	1233	243	12572	588	240	7096	350	693	34016	1564	2657	186442	11121
2012	372	38584	1451	269	8596	516	278	6972	377	1105	32931	2311	2934	187363	10103
2013	359	38811	1263	255	15858	649	212	5543	288	814	36571	1780	3177	179605	12504
2014	336	45392	1353	274	12909	553	126	5045	245	856	35747	1863	3603	169815	9634
2015	437	45204	1364	260	12811	556	131	5035	257	841	33383	1858	3811	153415	9695
2016	336	42005	1469	256	7641	543	131	4903	284	1054	33548	1993	4536	172169	10294
2017	340	39449	1413	260	7932	529	123	5088	267	1173	33411	1947	4683	169626	10871
2018	349	40978	1431	250	7084	441	94	5026	219	1176	34145	2114	4674	168361	10571
2019	378	39712	1478	255	7022	452	107	4953	245	1217	34232	2058	4925	169464	10185

Source: Private Education Institution, PEI, MOE (2019)

As tuition centre has become so ingrained in the educational phenomenon, numerous tutoring facilities are operated to cater to the educational needs in the community. Table 1, depicted the data trend on the five (5) types of centres categorized by [17] including the numbers of tuition centre from year 2009 until 2019. Even though the total numbers of the tuition centre for each year is many, the reduction numbers of it may be due to abolition of two (2) public exams in the primary and secondary schools.

Fig. 3 Themes and linkages for comparative analysis of laws and regulations for shadow education.

Source: Zhang W, Bray M. (2020), p.332

Accordance to [18], among the issue was the complexity of regulating and enforcing laws on shadow education, needing coordinated efforts from various government departments, consumer education, partnerships, and self-regulation by tutoring providers. Figure 3 illustrates various linkages essential for exploring themes, with laws and regulations on shadow education at the center, highlighting their differences across jurisdictions and time periods. It also addresses the enforcement of these laws, involving the deployment of personnel across multiple government departments such as education, commerce, fire safety, and taxation. Educating consumers to make informed choices and evaluations is suggested as a way to achieve some government objectives and reduce administrative burdens. Partnerships with schools, teachers' unions, other government branches, community bodies, and the media are also recommended to support these efforts. Finally, the authorities are encouraged to promote self-regulation among tutoring providers and their associations.

Parents may aim to enhance their children's future prospects for higher education by investing in shadow education programs [19] and [20]. Recognizing that the primary objective of a tuition centre is to provide additional academic support and guidance to students outside of their regular school environment, the physical condition of the learning centre should offer safe classroom atmosphere including the building facilities. Acknowledged that, tuition centres offer supplementary education services with the aim of helping students improve their academic performance and achieve their educational goals.

However, should a tuition centre contemplate relocation or may considered as newly built, a prerequisite for the acquisition of written approval from the Ministry of Education is part of the important procedure. The designated location must adhere to stringent criteria, being devoid of chemical or garbage contamination. Moreover, it is crucial that the chosen site is in proximity to entertainment, gambling, recreation centers, or markets, while maintaining a considerable distance from flammable areas, noisy workshops, rivers, or antiquated structures [21]. Furthermore, a strategic consideration involves ensuring a reasonable distance from other institutions offering similar courses.

This study had discovered the compliance requirement on fire safety of the tuition centre building located at the shop office where the premise is used to conduct and execute the tutoring operation and education business by complying to the relevant standards.

4. Fire Safety Requirement for Tuition Centre Building

The changes in premises' use often occur without considering their impact on fire safety provisions [22]. For example, shop offices converted into tuition centres or entertainment outlets impose very different occupancy loads on the provided escape and active fire safety installations. Because of the increased occupancy loads, extra capacity will have to be added to fire escapes and the level of active fire safety provision will also have to be increased. These are seldom looked into by both the building owner and contractor. Architects and engineers are seldom

called upon to offer advice because there is no statutory requirement for the owners or occupiers to do so.

Understanding the type of occupancy is part of the importance issues to determine the risk profile and forms the basis for the fire safety strategy for a building. In accordance to Table 2, the occupancy characteristics take into account whether occupants are likely to be familiar or unfamiliar with the building and whether they are likely to be awake or asleep [23]. The described characteristics will provide a clear insight into occupants' likely spontaneous behaviors and immediate reaction in the event of a fire or emergency within the building.

TABLE 2 THE OCCUPANCY CHARACTERISTIC CATEGORIES FOR DIFFERENT TYPES OF BUILDINGS

Category	Occupancy Characteristic	Types of Buildings
A	Occupants who are awake and familiar with the building	Office and industrial premises
B	Occupants who are awake and unfamiliar with the building	Shops, exhibitions, museums, leisure centres, other assembly buildings, etc.
C	Occupants who are likely to be asleep	
Ci	Long-term individual occupancy	Individual flats without 24h maintenance and management control on site
Cii	Long-term managed occupancy	Serviced flats, halls of residence, sleeping areas of boarding schools
Ciii	Short-term occupancy	Hotels
D	Occupants receiving medical care	Hospitals, residential care facilities

(SOURCE: BS 9999:2017)

As revealed by [24] that it is often difficult for any building designer to meet all the legislative requirements on fire protection when it comes to upgrading of old building. Despite increasing complexity, greater architectural demands, and expectations for lower construction costs, buildings are still required to be constructed with high safety standards to protect people, property, and the environment. To prove that new and innovative solutions meet the required fire safety, different methods are needed where the fire safety design of the building is challenged, evaluated and verified [25]. This is to prevent modifications in building usage from often overlooking essential fire safety upgrades, underscoring the importance of comprehensive assessment and compliance with fire safety standards.

The completed buildings often undergo refurbishment once the intended occupancy is changed which may require compliance with different or additional sets of Building Codes and regulations [26]. In both cases, the Issuance of a Certificate of Completion and Compliance (CCC) by the relevant authorities or self-regulation issued by the professional bodies (private sector) is mandatory before occupation. As an Architect, they should be responsible for any potential risk that might affect the condition of the building in the future.

In accordance to Guideline Procedure on Issuance of Renovation Permit by the local authority, under the [27], building that already has a Certificate of Fitness (CF) or Certificate of Completion and Compliance (CCC) are allowed to carry out renovation under these two circumstances:

a) The issuance of a permit by the local authority after approval of the submitted endorsed sketch plan by an architect or registered building draughtsman.

b) The issuance of a permit by the local authority after approval of the submitted endorsed architecture drawings or engineering drawings by Principal Submitting Person (PSP).

In line with relevant laws, including the [28], renovation works must receive an approval upon compliance with these regulations.

79. "(1) No person shall erect or cause or permit to be erected in any building any partition, compartment, gallery, loft, roof, ceiling or other structure without having the prior written permission of the local authority."

From this perspective, if renovation begins without obtaining the necessary approval permit from the local authority, the authority may impose fines and has the right to demolish any unauthorized renovations. The consequences of neglecting the actual process possibly given bad implication which resulted failure in complying the fire safety requirements at the renovated building.

In accordance to [29] explained that, as long as a fire certificate is valid for any premises, the Director General has the authority to inspect any part of the premises at a reasonable time to determine if changes have occurred that render the fire-fighting equipment or fire safety installations inadequate for their intended use. Whenever changes have been made to the shop office that is renovated to meet the classroom requirement as tuition centre, the FRDM is required to examine the fire safety compliances via physical inspection to the premise. Following to this, [30] agreed that criteria to be assessed prior to the issuance of certificate were listed as below:-

1. The premise is located in a clean environment.
2. It is not situated in a heavily traffic congested area.
3. It is situated in a safe environment.
4. Other nearest tuition center from the premise.
5. The details of the building including all rooms (such as classroom, rest room and others) and its measurement.
6. Fire safety equipment.
7. Availability of fire exit or escape.

Comprehensive assessments are conducted to ensure that the premises are physically suitable for the specified occupancy. Consequently, the placement of a large number of students in classroom spaces may increase danger and pose a higher risk, particularly during emergency evacuations.

5. Result and Discussion

In this research, the main aim is to identify the fire safety compliance requirements and address issues pertaining to the use of renovated shop office buildings as tuition centres. As illustrated in Table 3, interviews were conducted with four (4) respondents to gather detailed feedback.

TABLE 3 TYPE OF RESPONDENT FROM EXPERT SAMPLING METHOD FOR INTERVIEW SESSION

Respondent (R)	Position	Fire and Rescue Department Malaysia
R1	Fire Superintendent (PgB)	Kajang Fire and Rescue Station
R2	Senior Assistant Fire Superintendent (PKPgB)	
R3	Lead Fire Officer (PBT)	
R4	Senior Assistant Fire Superintendent (PKPgB)	Hulu Langat Fire and Rescue Zone

(SOURCE: AUTHOR, 2024)

The document review has been finalized in accordance with the following three (3) by-laws: -

i) Uniform Building By-Law 1984 (UBBL)

ii) Malaysian Standard (MS)

iii) British Standard (BS)

Detail building requirement related to fire safety for tuition centre building were identified and drawn in Table 4. Based on the above, the provision of fire safety is largely imperative and interrelated. In the context of fire safety, various fire safety measures are interconnected and must be implemented in a coordinated manner to ensure comprehensive protection. It is agreed by [31] that explained successful enforcement of regulations indeed hinges on the ability of the regulated entities to behave as intended and their commitment to obey the law. Therefore, implementing enforcement strategies that enhance capacity, such as providing clear information about appropriate behavior and reducing the costs associated with compliance (in terms of time, money, and effort), is essential. These strategies not only facilitate understanding but also encourage adherence to regulatory standards, thereby ensuring more effective and efficient enforcement.

Based on the interview, R1 specified that fires in shop units represent the second highest number of incidents, following residential fires in which an investigation statistic reported that electrical sources were the predominant cause of structural fires. R2 and R4 emphasized that, for establishing a tuition center, owners must have a comprehensive understanding and preparation not only in financial matters but also in technical aspects related to the physical facilities required for an educational space. It was agreed that the FRDM is available for consultation and discussion regarding fire safety issues for business premises. Consultations with tuition centre owners often involve discussions regarding the occupancy load requirements that must be addressed to meet classroom specifications. It is essential that detailed calculations are carried out to ensure that classroom sizes are appropriately designed to accommodate the required number of students while teaching is conducted on the premises. Compliance with these requirements is critical for the safe and efficient operation of the tuition centre. Moreover, another important matter being discussed was the issue of travel distance. Proper assessment of the travel distance to exits is required, with careful consideration given to ensuring that the means of escape enable occupants to reach the shortest route to the assembly area. This assessment should deliberate both unprotected and protected areas leading directly to exits. Figure 4

illustrates the travel distance for two rooms, each designed to accommodate more than six persons, in accordance with occupancy requirements.

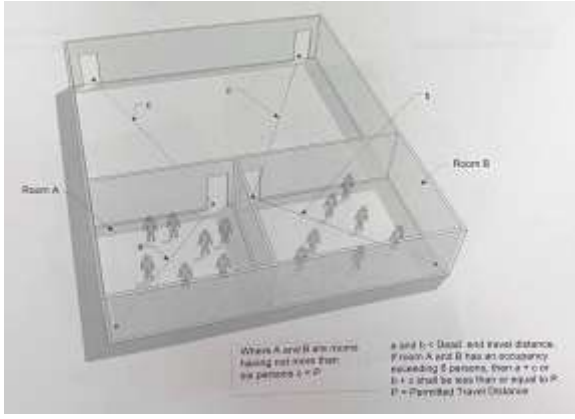

Fig. 4 Travel distance from rooms exceeding 6 person occupancy. Source: Hamzah (2011), p.49

The external escape staircase was also identified as a significant issue during discussions with the FRDM. Many tuition centre owners were unaware that external staircases must be designed in accordance with the size, shape, protection on no opening zone and materials approved by FRDM (see Figure 5). Additionally, it was emphasized by R3 that the community plays a crucial role in controlling fire incidents, with public awareness and community engagement being recognized as effective measures in preventing negligence and carelessness. Table 5 summarizes the issues highlighted by the R1to R4.

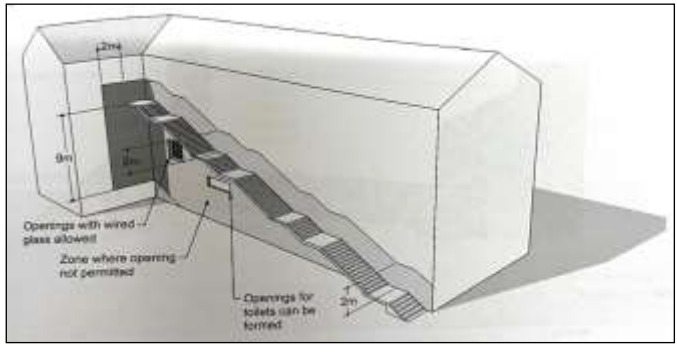

Fig. 5: Protection for external escape staircase. Source: Hamzah (2011), p.71

TABLE 4 BUILDING REQUIREMENTS IN RESPOND TO FIRE SAFETY COMPLIANCE FOR TUITION CENTRE

NO.	REQUIREMENT	EXPLANATION	UNIFORM BUILDING BY-LAWS, 1984 (UBBL)	MALAYSIAN STANDARD (MS)	BRITISH STANDARD (BS)
1.	**Staircase Design Component**	a) All dimension shall be uniform and consistent according to standard staircase design: i. Riser – Not more than 180mm ii. Tread – Not less than 275mm iii. Width – Accordance with by-law 168 iv. Depth of landings - Not less than width of staircases v. Handrails- shall be provided when the width of staircase is 1100mm or more. vi. Maximum Flights – Not more than 16 risers between each landing b) No obstruction in staircases c) Must be ventilated and illuminated with an average illuminance of at least 100 lux and ventilated according to by-laws Section 198 to Section 200 of Part VII	Section 106 (1), (2) & (3) Section 107 (3) Section 108 (1) Section 110 (1) & (2) Section 111 Section 194 Section 198 Section 199 Section 200	MS 1064, Part 3:2003 (Confirmed 2009)	
2.	**Fire Staircase**	a) Every upper floor shall have means of escape via two separate staircases. b) Able to accommodate highest occupancy of load.	Section 168		
3.	**Emergency Exit Sign**	a) Shall be marked and readily visible.	Section 172	MS 983:2004, MS 2687, MS 619	
4.	**External Exit Staircases**	a) External exit staircase complies with the requirement of an exit staircase from both upwards and downwards zone of protection. b) Provided with fire door	Section 190		
5.	**Exit Doors**	a) Shall be openable from the inside and provided with appropriate FRP. b) Provide two exit doors with the provision of Seventh Schedule	Section 173 Section 174 Seventh Schedule	MS 1073: Part 2 & 3:1996	
6.	**Travel Distance to Exits**	a) Complying the measurement of travel distance to exits by considering the occupancy loads and capacity of exits in such premise.	Section 165		
7.	**Fire Extinguishment System and Fire Alarm**	a) Suitably selected for the type of fire, fire size and potential fire hazard. b) Installation of fire alarm system, activation of alarm sounder to arouse the attention of occupants	Section 225, Section 227 Section 228 Tenth Schedule	MS 1539: Part 1,3 & 4 MS 1745	BS 5839: Part 1
8.	**Mechanical Ventilation And Air-Conditioning**	a) The requirements for natural ventilation, natural lighting, and room heights do not apply when permanent mechanical ventilation or air conditioning is used.	Section 41 (1), (2) & (4)		
9.	**Emergency Lighting**	a) Provide sufficient illumination.	Section 253A	MS 619: Part 2-22:2005, MS 2687	
10.	**Fire Emergency Evacuation Plan (FEEP)**	a) Code of Practice for Fire Safety in Design, Management and Use of Buildings provides the guidelines that drawing up the fire evacuation strategy of a building.			BS 9999:2008

(AUTHOR: 2024)

TABLE 5 ISSUES OF TUITION CENTRE BUILDING AS EDUCATION SPACE AT RENOVATED SHOP OFFICE (SOURCE: AUTHOR, 2024)

No.	Issues	Discussion
1.	Renovation plan submitted prior to seeking approval from the local authority.	There were tuition centre owners who submit their renovation plans after starting or completing renovations, leading to rejections by FRDM for non-compliance with fire safety requirements, such as lacking a second exit staircase. This results in delays and increased costs, as owners must redo renovations and resubmit plans for approval. Experienced tuition centre owners typically avoid these issues by ensuring their renovation plans comply with FRDM regulations from the start.
2.	Unclear information on the renovation requirement.	New or first-time tuition centre owners often lack familiarity with renovation requirements from the Local Authority and FRDM. Some start renovations without consulting these authorities, leading to potential compliance issues. Even with initial consultation, they must regularly check with FRDM and Local Authority officers during renovations to ensure all requirements are met.
3.	Hiring unqualified contractor to perform renovation works.	These contractors may not adhere to proper safety standards and building codes, resulting in subpar work that requires costly corrections. Additionally, non-compliance with regulations can delay project completion and jeopardize license approval.
4.	No External Exit Staircase provided.	In old shop offices, the necessary openings for installing an external exit staircase at the back or rear are often lacking. It is required by FRDM that a fire door and safety staircase be installed for tuition centres located on the first floor and above.
5.	Noncompliance of Exit Staircase design.	The dimension, materials and design of staircase were not following the FRDM standards. The tuition owner required to make changes to fulfil the basic requirement of the staircase.
6.	Noncompliance materials of exit door.	The exit door requires FRP criteria was change to glass material. The tuition owner has wrongly made such renovation and need to change even though high expenses has been made on the existing design.
7.	Insufficient lighting at the staircase area.	The staircase condition was quite dark and not following the minimum illuminance level.
8.	Insufficient number of Portable Fire Extinguisher.	The numbers of fire extinguisher provided is not sufficient. No sharing is required with the adjacent classroom. Recommended each classroom provided with 1 unit of portable fire extinguisher that should be mounted no higher than 5 feet above floor level and location should be visible.
9.	High occupancy loads.	The total number of students per room exceeded the actual plot ratio as submitted for an approval. Therefore, high occupancy loads will lead to critical escape and caused dangerous during emergency.
10.	Unclear travel distance and exit at upper level.	The flow of escape route makes unclear travel distance to reach the exit due to inorganized internal partition.

From the listed issues, FRDM has provided the following recommendations to address instances of non-compliance.

i. Tuition centre owners are advised to thoroughly familiarize themselves with the procedures set forth by the Local Authority and FRDM prior to commencing any renovation activities to ensure smooth permit application processes.

ii. It is imperative that all technical aspects of renovation work be undertaken with professional guidance from a certified Architect and FRDM before any renovations are initiated.

iii. Prior to commencing any renovation work, it is essential to consult with the Local Authority or FRDM regarding any ambiguities or uncertainties of the specified by-laws.

iv. Owners should conduct a comprehensive analysis of renovation costs and expenditures to preemptively address potential rework requirements.

v. A thorough review of relevant acts and regulations pertaining to renovation guidelines for tuition centres is recommended

6. Conclusion

In conclusion, fire safety for educational spaces such as tuition centres must be meticulously designed to ensure the safety of occupants, in accordance with by-laws and relevant local and international standards. It is essential that these premises are maintained with due care and diligence to uphold safety. Thus, this study provided a comprehensive understanding of fire safety requirements and regulations pertinent to premises operating as learning centres under the supervision of Private Educational Institutions (PEI) and the Education Act 1996. Implementing robust fire safety measures in tuition centers is vital for safeguarding the well-being of students and staff. Adherence to established regulations, with guidance from the FRDM, not only protects lives but also ensures the operational integrity of the educational environment on a global scale. As a result, this study benefited the tuition centre owners in understanding and complying with fire safety regulations, while also supporting the FRDM's efforts to enhance safety standards in the educational hub.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the Research Unit of Private Education Division, Ministry of Education, Malaysia (MOE), the Fire and Rescue Department Malaysia (FRDM), Hulu Langat Zone, and Kajang Fire and Rescue Station for their approval and support in conducting this research. The authors also express their deepest appreciation to the National University of Malaysia (UKM) for the valuable resources provided through funding number TAP-K013189 (approval number: LN 00251/2024). Their support was instrumental in materializing this study.

WORKS CITED

Bakhtiary, S., Khalili, R., and Hosseinpour, M.A., The Evaluation and Improvement of Fire Safety for Existing Buildings: A Development of Codes System. Soffeh. 103 (4): 9-10, 2023

Law of Malaysia (Act 550) Education Act 1996, Subsection 83(1)

Fire and Rescue Department Malaysia, Putrajaya. Annual Report, 2022

William Michael Trochim and James P. Donnelly, The Research Methods Knowledge Base. 3rd Edition. Atomic dog and Cengage Learning. ISBN: 9781592602919, 2008

Nevash Nair. Increase in demand for tuition in Malaysia. The Star Monday, 5 November 2012

Economic Transformation Programme A Roadmap for Malaysia (2010) Performance Management and Delivery Unit (PEMANDU), Prime Minister's Department, 2010

Bray, Mark & Kwo, Ora., Regulating Private Tutoring for Public Good: Policy Options for Supplementary Education in Asia. Hong Kong: Comparative Education Research Centre, The University of Hong Kong, and Bangkok: UNESCO Asia and Pacific Regional Bureau for Education, 2014

Kobakhidze, M.N. & Suter, L., The Global Diversity of Shadow Education. European Journal of Education: Research, Development and Policy, 2020.

Bray, Mark., The Shadow Education System: Private Tutoring and its Implications for Planners (Second Edition). Fundamentals of Educational Planning No. 61. [274]. Paris: UNESCO International Institute for Educational Planning. ISBN: 978-92-803-1305-5, 978-4-7989-1251-6 (jpn), 2007

Stevenson, D.L. and Baker, D.P.,Shadow Education and Allocation in Formal Schooling: Transition to University in Japan. American Journal of Sociology, 97, 1639-1657. 1992

Organisation for Economic Co-operation and Development (OECD,2016), Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris, 2016

Gromada, A. and C. Shewbridge, "Student Learning Time: A Literature Review", OECD Education Working Papers, No. 127, OECD Publishing, Paris, 2016

National Research Council., Identifying and Supporting Productive STEM Programs in Out-Of-School Settings. 2015

Noam, G. & Shaw, A., Afterschool, Informal Science, and theAssessment Predicament: A Game-Changing Strategy. PEAR - Program in Education, Afterschool, and Resiliency. Cambridge, MA. 2013

Alexander, K. L., Entwisle, D. R., & Olson, L. S., Lasting Consequences of the Summer Learning Gap. American Sociological Review, 72(2), 167-180. 2007

Bernama. Radzi: UPSR, PT3 abolished to make way for effective school-based assessments [NSTTV]. News Straits Times. 8 August 2022

Private Education Institution, PEI, Ministry of Education Malaysia (2019)

Zhang W, Bray M., Comparative research on shadow education: Achievements, challenges, and the agenda ahead. Eur J Educ. 2020; 55: 322–341. 2020

Matsuoka, R., School socioeconomic compositional effect on shadow education participation: evidence from Japan. British Journal of Sociology of Education, 36(2), 270–290. 2015. doi:10.1080/01425692.2013.820125

Addi-Raccah, A., & Dana, O., Private tutoring intensity in schools: A comparison between high and low socioeconomic schools. International Studies in Sociology of Education, 25(3), 183–203. 2015 https://doi.org/10.1080/09620214.2015.1069719

Buku Dasar Institusi Pendidikan Swasta, 2024 https://www.academia.edu/10689917/BUKU_DASAR_INSTITUSI_PENDIDIKAN_SWASTA

The Position Paper on Safety Against Fire in Building (2004). The Institution of Engineers, Malaysia.

BS 9999:2017. The Occupancy Characteristic Categories for Different Types Of Buildings

Hamzah Bin Abu Bakar., Guide to Fire Protection in Malaysia. Malaysia: Institute of Fire Engineers (UK) Malaysia Branch. 2011

Ronstad D. A Comparison between two different Methods to Verify Fire Safety Design in Buildings [dissertation]. Luleå: Luleå University of Technology. 2017

Zainordin, Zainab & Masrom, Md Asrul & Rahman, Nurul., An initial exploration on issues related to building certificates for education building refurbishment works. AIP Conference Proceedings. 070012. 10.1063/5.0173124. 2023

Uniform Building By-Law (UBBL) 1984, Section 18

Street, Drainage, and Buildings Act 1974, Section 79 (1)

Act 341, Fire Services Act 1988, Section 32

Kenayathulla, H.B., & Ubbudari, M., Private Tutoring In Malaysia: The Nexus Between Policy, People And Place. 2017. DOI: 10.22452/MOJEM.VOL5NO2.3. Corpus ID: 113549979

Burby, R. J., & Paterson, R. G., Improving Compliance with State Environmental Regulations. Journal of Policy Analysis and Management, 12(4), 753–772. 1993