

# Problems Faced by Homeowners Regarding Building Control Regulations for House Renovations

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Received: 23 May 2025 | Accepted: 23 August 2025 | Published: 1 November 2025

DOI: <https://doi.org/10.55057/ijbtm.2025.7.7.27>

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**Abstract:** *Renovations among houses are increasingly popular due to high real estate demand. However, homeowners face challenges such as complex building regulations that vary by local authorities, making compliance difficult and confusing; cost constraints, as many renovate because they can't afford new homes, but find approval processes lengthy and expensive; and external impacts like traffic congestion, and overshadowing. These issues create discomfort for surrounding. Hence, this research aimed is to determine the understanding and investigate the problems faced by homeowners regarding Building Control Regulations for house renovations and recommend the strategies to enhance the awareness among homeowners regarding Building Control Regulations for house renovations in Selangor. Research methodology used quantitative through questionnaire form delivered through social media such as Facebook to the respondents. The data were analysed using Statistical Package for Social Science (SPSS) software to perform descriptive analysis to obtain the result. This research focused on the homeowners under Majlis Bandaraya Petaling Jaya. The total number of houses in these areas is 1,315 and the sample size selected for the study was 298. A total of 94 respondents had given feedback in the questionnaires. Frequency analysis was used to analyse the demographic of respondents while Cronbach alpha, mean and rank were used to analyse the data for all objectives. The study analysis showed that respondents aware that their local authority and aware the setback of their house cannot exceed as state in regulation. The problem that homeowners faced is the cost constraint which is the amount of money that needed to pay when submit design to local authority. Finally, the effective way to enhance the awareness is simplifying the permit application process would help homeowners understand and comply with regulation.*

**Keywords:** Problem, Homeowners, Building Control Regulations, House Renovation, Selangor

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## 1. Introduction

Most nations have building rules, which generally have similar goals. However, the methods used to implement these regulations vary from using public agency to progressively contracting out control to private organizations. Building regulations were created in response to concerns

over unstable constructions, drainage, fire hazards, and rights to light. The government views them as fundamental performance requirements, and they consist of several functional or technological specifications that structures must meet. These include regulations pertaining to the provision of sufficient surface and foul water drainage systems as well as the establishment of standards to ensure that structures are able to safely support the loads anticipated to be placed on them (Imrie, 2004). Housing has been essential to its economic growth and welfare. Good housing can help inhabitants by enhancing their overall health and well-being, which can be very beneficial. Both mental and physical well-being are enhanced by healthy homes (Aziz & Zulkifli, 2018). Having a safe and risk-free home is essential for maintaining good health. On the other hand, substandard and insufficient housing can negatively impact a child's growth and lead to health issues like injuries and chronic illnesses. Many modern homes are too small or too old to suit changing family sizes, ages, income levels, or physical capabilities. Designs that allow for adaptation throughout time play a role in sustainability, as meeting both present and future demands is a key component of sustainability (CIDB, 2020).

## **2. Literature Review**

### **2.1 House Renovation**

Housing preferences can be categorized according to a variety of factors, such as the kind of house, its location, size, characteristics, and any other features (Henilane, 2016). There are two ways to define housing preference: ambition and expectation. Housing expectations represent predictions for the future state of housing, whereas housing aspiration is demonstrated by the buyer's desire to purchase it (Thanaraju et al., 2019). House renovation is defined as change to the home environment that increase people's independence, safety, and sense of security while lowering the possibility of harm coming to caregivers and other caregivers (Carnemolla & Bridge, 2019). The home modifications can also refer to renovations or home improvements, they particularly describe changes made to a house to make it more accessible for people with varying physical abilities, including the elderly. A variety of additions, modifications, and repairs that improve a home's accessibility for people with varying physical abilities can be referred to as home modifications. Although more significant renovations might cost several thousands of dollars, home alterations can cost as little as a few hundred dollars (James, 2021). There are so many reasons why houseowner renovating their house. These are included areas of personalization, increase the value of property, functionality of space and aesthetic. Due to house renovation, it also gives impact such as sustainable waste and violation of the building setback.

### **2.2 Building Control Regulations related house renovation in Selangor**

In Malaysia, the main goal of the Building Control Regulations is to protect people's health and safety as well as the environment and properties. Before the work begins, the building controller will set written criteria in order to accomplish the goal (Mohamed Sabri et al., 2019).

#### ***Local authority in Selangor***

The definition of legal framework refers to the collection of legal papers that define the laws, rights, and responsibilities of governments, businesses, and individuals (NRGI Reader, 2015). Malaysia is both a constitutional monarchy and a parliamentary democracy. Regular elections are held at the federal and state levels of the nation's three tiers of government: federal, state, and municipal (CLGF, 2024).

### ***The Street, Drainage and Building Act 1974 (Act 133)***

The Street, Drainage and Building Act 1974 (Act 133) is Malaysian laws designed to control and oversee the development and maintenance of roads, drainage systems, and structures. The purposes of this act are regulated construction that streets and drainage systems are built and maintained well and plus to standardize the building construction to guarantee both safety and adherence to legislation which is important. For this act, it establishes a consistent system for streets, drainage, and building in Peninsular Malaysian local government areas through a parliamentary act.

### ***The Uniform Building by Law 1984 (UBBL)***

Uniform Building by Law 1984 (UBBL) is one of the thing consultants especially architect will refer. The primary prescriptive bylaw that guides and impacts building design is intended to safeguard the lives, health, and well-being of those who will eventually occupy the building or structure after it is finished. UBBL, as it is commonly called, regulates the design and construction of elements like living space, ventilation, lighting, fire safety, and structural requirements, among others (Uniform Building By Law 1984, 1984).

### ***Building Renovation Control in Selangor***

Planning and guideline and standard are a document that includes instructions and serves as a guide for approving development. *Pihak Berkuasa Perancang Tempatan* (PBPT) uses it to regulate land use activities so that they are consistent, comfortable, and safe. Everyone who wants to be promoted must abide by the established rules. To build and renovate house in Malaysia, contractor need to follow the guideline that stated according to state. The public must be aware of their rights and what is going on in their residential neighbourhoods because they will be using the advanced planning and development (DBKL, 2017).

In Selangor, developer and contractor need to follow Selangor state planning guidelines and standards also known as *Garis Panduan dan Piawaian Perancangan Negeri Selangor*. It explained about guidelines for housing for residential, guideline for business, industrial guideline, community facility guidelines, guidelines for environmental aspects in planning and infrastructure and utility guidelines. It is important to follow the guideline that already state to avoid consequences.

i. Setback of the building

A setback is a buffer zone that protects buildings or other structures from the road by lowering noise levels, offering a zone of safety, and enhancing the area's appearance with landscaping or screening. The type of area, the land use, and the road's functional classification all affect setbacks. (Chester Planning, 2016). According to Jabatan Kawalan Bangunan, MPKJ (2021), balcony construction setback distance 3048mm from front border and the distance of the balcony or wall construction is 3048mm.

ii. The height of column

In Uniform Building By Law (1984) mentioned that column is any component of a building that, by its resistance to compression in the direction of its length and to the bending motions caused by such compression, will sustain and transfer loading is referred to as structural steel, timber, or reinforced concrete. Height of column is limited to 3048mm only and the design of a column as high as 2 floors is not allowed (Jabatan Kawalan Bangunan, MPKJ, 2021).

iii. Renovation for rear elevation

According to Jabatan Kawalan Bangunan, MPKJ, (2021), before this the guideline for renovation rear elevation is 1524 mm from setback. The latest guideline for rear elevation

for house renovation is the rear built-in setback allowed up to the rear setback. Roof gutters are allowed beyond the line 300mm boundary including rainwater gutters. (Refer Appendix C).

### **2.3 Problems faced by homeowners regarding Building Control Regulations for house renovations**

House renovation is being normalize these days especially in Selangor. In contrast to other compact housing options like high-rise apartments, terraced housing is highly sought after due to the rising value of land in urban areas. This is because terraced housing provides for greater customization. There are variety reason why people renovate their homes (Saji, 2012).

#### ***Complexity of regulation***

The procedure of the renovation is different in each council. However, these councils are still referring to Act that already been established in Malaysia. Some homeowners find the legal process for remodelling their homes to be challenging and perplexing. Some homeowners wanted to follow the law; however, they find it is difficult to do so. They feel that the books of laws and guidelines are too dense, and the terminology is too complex for them to understand comprehend. Moreover, the terminology is more to the professional or people have background in construction in order to understand it. (Mohamed Sabri et al., 2019)

#### ***Limited flexibility***

House renovation or modification is a need when it comes to family. A family's population will rise as it expands, and the children will mature from early childhood to early adulthood. This development will bring about a change in the necessity for functional space. Children's demands are undoubtedly different from those of teens, young people, or scholars, for example. Therefore, renovations will undoubtedly occur when the time comes. It has been discovered that the necessity for a greater space or area was the clear motivation behind these people's upgrades. The residents discovered how crucial and significant having a big, open area is. They require it to accommodate their growing family and to satisfy space-related needs that may arise in the future, such as the requirement to provide each child their own room. The homeowners not comply the regulation, they ignore the law in order to fulfil their needs (Jamel & Utaberta, 2011).

#### ***Cost constraint***

The main reason why homeowners choose to renovate is that they are unable to afford to purchase a new home in the neighbourhood of their choice (Kamarulzaman et al., 2019). Some homeowners have acknowledged that they are unable to follow the rules due to the lengthy and costly approval process that the local government requires. (Mohamed Sabri, 2018) Additionally, they are worried about the cost they would have to pay if they had to submit the designs to the local government (Kamarulzaman et al., 2019). The square footage or size area, age, location, and current condition of home, the rooms being remodelled, the depth and whether any structural changes are made, the calibre of materials, the type of renovation, and the type of house that need to remodel are the primary factors that determine how much a home renovation will cost (Suhainudin, 2021).

#### ***Safety***

One factor that need to consider is safety factor. Safety factor can cause issues in the future especially to homeowners. Safety issue in this house renovation is considering the fire risks. The back lane is a space or reserve with a certain width that provided at the back of the

residential buildings. The purpose of the back lane of the residential building are for (i) fire escape space to prevent the spread fire and for fire operation and (ii) as a space for purpose security (escape route) as well sufficient mobility space during an emergency (Bahagian Penyelidikan dan Pembangunan, 2014).

### ***Ventilation and lighting***

The homeowners make extension and undertake home modification up to enter the back alley, the effect of it is disturbing the comfort of the viewers even more because it is too close to the residence next door. This condition may result in poor lighting and air circulation within the home, which may have an impact on people's health and general well-being (Bahagian Penyelidikan dan Pembangunan, 2014)

### ***Defects from renovation the house***

The most common thing that will appear when house renovation is defect of the house. There was study mention that the result of the research came out that most of the homeowners facing the defects. The hairline cracks are the visible defect. This is not only appeared in the homeowner's house but also, it also gives impacts towards the neighbour's house (Isnin et al., 2012). One of the most serious and common problems that homeowners face is water damage, which is also the primary source of major headaches when renovating. Water damage can originate from a variety of sources, such as a leaking roof, which, if left unchecked, can cause serious damage to ceilings; other common causes include faulty plumbing or a burst pipe (Moovick, 2021).

## **2.4 The strategies to enhance the awareness among homeowners regarding Building Control Regulations related to house renovations**

The terms of awareness in here are perception or knowledge of something. It is a common behavioural index of conscious awareness is the accuracy with which something can be reported, either as perceived or as known (American Psychological Association, 2018).

### ***Government***

As the main lawmaker and decision-maker of law enforcement, the government is the primary force behind guaranteeing the legality of building renovations (Kamarulzaman et al., 2019). Creating public awareness involves sustained efforts to enhance public recognition and understanding of a significant issue through methods such as public campaigns, media platforms, and other structured communication strategies. It refers to the level of comprehension within the general population about the nature and impact of a specific policy, law, or regulation. (Algamdy, 2022). The importance of public awareness since it makes things easier for everyone if people are aware of the advantages of getting a permit for remodelling work.

The public awareness campaign regarding the Malaysian Local Government and Housing Ministry's management of strata titles on local television. It claimed that the campaign has done a great job of informing apartment owners about the value of maintaining their buildings. Similar actions might be taken to emphasize the value of submitting renovation plans. Construction Industry Development Board (CIDB) can also be useful in awareness campaigns. Before starting any work on the site, small contractors can receive education from CIDB regarding the process, as well as the advantages of having approved remodelling plans (Sarkom, 2018). Educational workshop can help in terms of visualization such as images can make the audience understand the awareness of it (Asharose et al., 2015). According to Jabatan

Perancangan Bandar dan Desa (2016), *Garis Panduan Perancangan* existed to assist the State Authority (PBN), local authorities (PBT) and technical agencies planning and control the development the development of all kinds housing during plan preparation forwarding and processing applications planning permission.

### ***Local authority***

In Malaysia, each of local authority has their own procedure and guideline in house renovation. (Sarkom, 2018). The e-government which is MBPJ website and PJ City is to help citizen achieved the information or service that demanded (Seng Boon et al., 2020). In MBPJ website it provides the frequent ask question (FAQ) such as inquiries about method of application, building approval and the other inquiries that related to building. The MBPJ also provided the checklist form of *Jabatan Kawalan Bangunan* to ease the process (MBPJ, 2025).

### ***Professionals***

Collaboration with professionals such as contractors and architects is crucial to promoting proper building renovation practices among the public. These professionals serve as a link between existing laws and guidelines and the public. Homeowners are often significantly influenced by contractors and consultants, as these professionals are entrusted by their clients. However, their advice can sometimes be misleading, potentially resulting in poor compliance with regulations. (Kamarulzaman et al., 2019).

### ***Homeowners***

The workshop that provided by government through local authority can assist the individual to understand more about the regulation (Sarkom, 2018). Depending on whether the attention is focused negatively or favourably, self-awareness can enable a person experience either positive or negative results. More self-aware people are more inclined to behave in normative ways than less self-aware people (Yao et al., 2022). MBPJ provided the checklist and guideline to ensure the individual or homeowners understand the content even more especially related to regulation (MBPJ, 2025). Homeowners can use the website to gain the knowledge to ensure it aware about the regulation that stated in MBPJ. Through self-awareness and workshop, the homeowners can enhance the understand of building control regulation that related to house renovation.

## **3. Research Methodology**

### **3.1 Research Design**

A quantitative was used in this research to collect data from a specific sample group using questionnaires. This method was used to achieve the objective of the research which were the understands the compliance of Building Control Regulations related to house renovation, problems faced by homeowners regarding Building Control Regulations for house renovation and the recommendation of strategies to enhance the awareness among homeowners regarding Building Control Regulations related to house renovation. Thus, this research presented the numerical data from questionnaires and data collected using SPSS Software to analyse the numerical data and were used to transform the data into tables form. Google forms used in the creation of the survey questionnaire for this investigation. The collected data and findings from respondents, along with the literature research, are examined and evaluated to fulfil the study's goals.

### 3.2 Population and sample

In this study, table of Krejcie and Morgan (1970) are used in determining the sample size. In the population size is 1315 houses which is located under Majlis Bandaraya Petaling Jaya in Selangor. It was focused on 3 residential area which is Taman Medan, Taman Buana Perdana and Taman Datuk Harun. According to the Krejci and Morgan table, the sample size for population 1315 is 298 houses. Which mean in this research, researcher needs to get 298 respond from homeowners under Majlis Bandaraya Petaling Jaya in Selangor to achieve the objectives of this research.

### 3.3 Data Collection

The primary data is obtained through the questionnaire form. Surveys are a means of gathering data from a population on facts, opinions, behaviours, and knowledge (Sandhya & LN, 2019). The survey or questionnaire are containing researcher’s objectives which is understand the compliance towards Building Control Regulations related to house renovation, the problems faced by homeowners regarding Building Control Regulations for house renovation and the recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation.

### 3.4 Research Method

For this study, questionnaire is a suitable tool for collecting the data. The questions in this research questionnaires are divided into four sections as shown in Table 1

**Table 1: Section in Questionnaires**

Section	Statement
A	Demographic respondents
B	To determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation.
C	To investigate the problems faced by homeowners regarding Building Control Regulations for house renovations.
D	The recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation

### 3.5 Pilot Study

Before the full-scale study is carried out, a pilot study is carried out by the researcher first aims to test the research questions used in data collection process is implemented. This pilot study is important because for know whether the question that presented to the respondent is relevant or not. A total of 4 respondents in Selangor have answered the questionnaire provided. Some questionnaires have been changed such as paraphrase the questionnaire to suit the question.

#### **Reliability Analysis**

Cronbach's alpha is a method of evaluating reliability by comparing the amount of shared variation, or covariance, among the items that comprise an instrument to the amount of total variance (Collins, 2007). There was total 4 respondents that answered in purpose of pilot study. The following is rule when using Cronbach’s Alpha is:  $\alpha \geq 0.9$  = excellent,  $0.9 > \alpha \geq 0.8$  = good,  $0.8 > \alpha \geq 0.7$  = acceptable,  $0.7 > \alpha \geq 0.6$  = questionable,  $0.6 > \alpha \geq 0.5$  = poor,  $0.5 > \alpha$  = unacceptable (George & Mallery, 2019).

**Table 2: Interpretation of Cronbach's Alpha ( $\alpha$ ) values (George & Mallery, 2019)**

Cronbach's Alpha value	Interpretation
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

**Table 3: Cronbach's Alpha for each objective**

Section in Questionnaire	Item	Cronbach's Alpha
B	To determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation.	0.785
C	To investigate the problems faced by homeowners regarding Building Control Regulations for house renovation	0.848
D	The recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation	0.750

### 3.6 Data Analysis

The Statistical Package for Social Sciences (SPSS) software was used to analyse data collected from the questionnaire. The study employed descriptive analysis using a Likert Scale. The results were presented in table format and organized for easy readability using Microsoft Word.

#### *Descriptive Analysis*

According to Sarmiento and Costa (2017), descriptive statistics is to analyse which are used to characterize and summarize data. In this research the descriptive analysis was determine through the mean score. There were divided to 5 mean score which is 1.00 – 1.80 (very low), 1.81 – 2.60 (low), 2.61 – 3.20 (average), 3.21- 4.20 (High) and 4.21 – 5.00 (Very high).

**Table 4: Mean score (Pikirang et al., 2021)**

Scale	Mean Score	Interpretation
1	1.00 – 1.80	Very low
2	1.81 – 2.60	Low
3	2.61 – 3.20	Average
4	3.21 – 4.2	High
5	4.21 – 5.00	Very High

#### *Likert Scale Analysis*

Respondents need to answer through Likert scale as measurement. Strongly disagree – 1, disagree – 2, neutral – 3, agree – 4 and strongly agree – 5. The table 7 shows Likert scale.

**Table 5: Questionnaire formation (Sreejesh et al., 2014)**

Scale	1	2	3	4	5
Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

## 4. Results and Discussion

The data analysis was divided into several section based on questionnaire form. The first part (A) discussed the descriptive analysis of respondents' demographic. The second part (B)

determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation. Next, for third (C) and fourth part (D) are discussed the problem faced by homeowners towards Building Control Regulations for house renovation and the recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation. The total of distributed question is 298 questionnaires to the respondent and got 94 feedback from respondents. The respondent rate is 31.7% which above the 30%. According to Kantar (2023), a survey response rate of 5% to 30% is considered appropriate. 30% or more is regarded as excellent.

#### 4.1 Part A: Demographic respondents

**Table 6: Summary of demographic respondents based on characteristics.**

No	Respondent characteristics	Frequencies	Percentage (%)
1.	Gender		
	Male	43	45.70
	Female	51	54.30
	Total	94	100
2.	Age Group		
	Below 24 years old	1	1.1
	25-30 years old	3	3.2
	31-35 years old	1	1.1
	36-40 years old	18	19.1
	41- 45 years old	27	28.7
	46-50 years old	22	23.4
	Above 51 years old	22	23.4
	Total	94	100
3.	Level of Education		
	Certificate	5	5.3
	Diploma	29	30.9
	Bachelor	45	47.9
	Master	14	14.9
	PhD	1	1.1
	Total	94	100
4.	Income		
	Less than RM 2,499	3	3.2
	RM 2,500 – RM 4,849	25	26.6
	RM 4,850 – RM 10,959	54	57.4
	More than RM 10,960	12	12.8
	Total	94	100.0
5.	Experience of Work		
	Less than 1 year	1	1.1
	1 year – 3 years	2	2.1
	4 years – 6 years	3	3.2
	7 years – 9 years	5	5.3
	More than 10 years	83	88.3
	Total	94	100
6.	Race		
	Malay	79	84.0

	Chinese	8	8.5
	Indian	3	3.2
	Others (Bumiputera Sabah & Bumiputera Sarawak)	4	4.3
	Total	94	100
7.	Type of House		
	Terrace house	69	73.4
	Semi-detached	16	17.0
	Bungalow	9	9.6
	Total	94	100.0

The section describes the sample characteristics of the respondents and encloses the general pattern of the responses. The Table 6 shows the summary of data analysis in Section A. The percentage of the female respondents is higher than male with a total percentage 54.30% with 51 respondents. The percentage for age group, 41 to 45 years old is highest with 27 respondents (28.7%). The respondent above 40s has much saving and less debt and commit in terms of housing. The journal mentioned that some of youth have lower income which make more prefer to rent (Ismail et al., 2021).

For the level of education, respondents with Bachelor have the highest with 45 respondents (47.9%). According Wang et al. (2022), higher educated people typically earn more money and have greater savings, which makes building wealth for home easier. This shows that people who have education have majority number in this part. The income for RM 4,850 - RM 10,959 has the highest number of respondents with 54 respondents (57.4%). The middle income has work and wages that can afford them to purchase the houses according to their preference and location of the place. The sector of work section, respondents that work in government have the majority with 56 respondents (59.6%). Majority of race for respondents is Malay with 79 respondents (84.0%). Having more experience in work can increase the income of the individual which makes the 10 years of experience have majority respondent. The type of house section, terrace house has the majority with 69 respondents (73.4%).

#### 4.2 Part B: To determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation.

Part B questions are discussing about determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation. After collecting the data, mean of analysis of determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation is shown in Table 7.

**Table 7: Mean analysis of determining the understanding of homeowners towards compliance with Building Control Regulations related to house renovation.**

Item	Statement	Mean	Level Agreement	Ranking
B1	I am aware that my place is under Majlis Bandaraya Petaling Jaya (MBPJ) which is local authority ( <i>Pihak Berkuasa Tempatan</i> - PBT).	4.68	Very High	1
B2	I understand I need to submit the new plan before renovating to the local authority	4.51	Very High	4
B3	I am aware that my back lane cannot have any obstacle	4.59	Very High	2
B4	I understand that this act is to regulated construction that streets and drainage systems are built and maintained well and to standardize the building construction	4.41	Very High	5

B5	I am aware that UBBL is guides to get lives and health of the resident	4.19	High	7
B6	I am aware to renovate; I need to apply permit approval from local authority	4.53	Very High	3
B7	I am familiar with the inspection requirements during and after the renovation process	4.21	Very High	6
B8	I am aware that I cannot exceed the setback of house (sempadan) that already stated in regulation	4.68	Very High	1
B9	I am aware that the height of column cannot high as 2 floors (if the house is 1 floor)	3.14	Average	8

Most respondents agreed that their house is under Majlis Bandaraya Petaling Jaya which is local authority (rank 1, mean = 4.68) and homeowners aware that cannot exceed the setback of house that already stated in regulation (rank 1, mean = 4.68). This is followed by homeowners aware that their back lane cannot have any obstacle (rank 2, mean = 4.59) and homeowners aware that to have renovation, homeowners need to apply permit approval from local authority (rank 3, mean = 4.53). Homeowners understand that to submit new plan before renovating to local authority (rank 4, mean = 4.51) and homeowners that this act (The Street, Drainage, & Building Act 1974 (act 133)) is to regulated construction that streets and drainage systems are built and maintained well and to standardize the building construction (rank 5, mean = 4.41). Homeowners aware that the height of column cannot high as 2 floors (if the house is 1 floor) (rank 8, mean = 3.14) is the last ranked by the respondent for the understand the compliance of building control regulation related to house renovation.

Based on Table 7, the homeowners aware that they are under local authority of Majlis Bandaraya Petaling Jaya (MBPJ). This shows that homeowners knows that the local authority responsible in terms of organizing, planning and carrying out local development control. Homeowners aware that cannot exceed the setback of house that already stated in regulation. In regulation it stated that the setback front elevation needs to have setback 20 feet (ft), and rear elevation needs to have 5 ft from buildable area. For the corner lot, is 20 ft and setback for end lot is 5 ft. This proves that the homeowners have a strong understanding of general local authority jurisdiction and boundary limitations.

Homeowners aware that their back lane cannot have any obstacle. As mentioned in the Street, Drainage and Building Act 1974 (Act 133), back lane should be free from any obstruction. It mentioned also local authority may declare any back lane to be public street accordance with the procedure. Homeowners understand that to submit new plan before renovating to local authority. There were several steps that need to do before submitting new plan before renovating. The procedure is essential because it ensures that the building plan is legal and conforms with all relevant building laws. Homeowners understand that this act (The Street, Drainage, & Building Act 1974 (Act 133)) is to regulated construction that streets and drainage systems are built and maintained well and to standardize the building construction. These laws are intended to ensure that roadways and drainage systems are constructed and maintained properly, as well as to standardize building construction to ensure both safety and crucial legal compliance. Homeowners aware that the height of column cannot high as 2 floors (if the house is 1 floor). It can affect the structure of the house and can causes crack if there are no proper connection between the structural. Respondents show a strong awareness of general local authority and boundary regulations but exhibit lower awareness regarding specific construction rules, particularly building height restrictions.

### 4.3 Part C: To investigate the problems faced by homeowners regarding Building Control Regulations for house renovation.

Part C questions are focusing to the problems faced by homeowners regarding Building Control Regulations related to house renovation. In this section, researcher posed 10 questions which had a Likert Scale option. After collecting the data, the summary of problems faced by homeowners regarding Building Control Regulations related for house renovation is shown in Table 8.

**Table 8: Summary of analysis of the problem faced among homeowners in Building Control regulation related to house renovation.**

Item	Statement	Mean	Level Agreement	Ranking
C1	I find the process of obtaining permits for house renovation to be complex and confusing.	3.88	High	3
C2	Local authority late to approve the form that required	3.67	High	4
C3	I concerned the cost that need to pay if I had to submit the designs to the local government	4.48	Very High	1
C4	I am having hard time to follow the regulation because of my needs	4.36	Very High	2
C5	After renovation, my safety in terms of fire escape is not sufficient	2.56	Low	10
C6	My renovation give impact towards comfort of the view because to near with resident next door	3.05	Average	5
C7	I faced lack of natural lighting after renovating my house	2.70	Average	9
C8	The air circulation is not circulated due to house renovation.	2.72	Average	8
C9	I faced defect in the renovation which cause crack	2.91	Average	6
C10	I faced damage that causes by water such as leaking roof in the renovation part	2.87	Average	7

The Table 8 presents various problems faced by respondents during the house renovation process, ranked according to their severity based on mean scores. The most significant challenge, with the highest mean score of 4.48, is the concerned the cost that needed to pay to local authority (Rank 1, mean = 4.48) indicating that financial costs are a major concern for respondents. The second highest problems faced by homeowners include difficulty following regulations due to personal needs the complexity of obtaining renovation permits (Rank 2, mean = 4.36) and homeowners find the process of obtaining permits for house renovation to be complex and confusing (Rank 3, mean = 4.36). This is followed by local authority late to approve the form that required (Rank 4, mean = 3.67) and homeowners renovation give impact towards comfort of the view because it is near with resident next door (Rank 5, mean = 3.05). Insufficient safety measures for fire escape (Rank 10, mean = 2.56) is the last ranked by the respondent for the problem faced among homeowners towards Building Control Regulations related to house renovation.

Based on the Table 8, the homeowners concerned the cost that needed to pay to local authority is one of the problems that faced by homeowners. The homeowners need to consider the price during submit the drawing and others stuff depending on the local authority. One of it is the second problem is difficulty to follow the regulation. This is due to personal needs of the homeowners such as if the family's population is increase, so this can develop the needs of the family. There were also homeowners that wanted to follow the regulation however they find it difficult to do so. The reason is because the regulation and guideline are too complex in terms of terminology hard to understand. Due to this barrier, the homeowners hardly to follow the

regulation. Additionally, the homeowners faced problem by local authority late to approve the form that required. This can lead to problem to the homeowners because it can delay the construction of the house.

Homeowners also felt that the renovation give impact towards the view because it is too near neighbour. This usually happen when the renovation in the rear elevation. This can give impact towards poor lighting and air circulation of the house. After renovation, homeowner’s safety in terms of fire escape is not sufficient. The purpose of the regulation is for safety of the occupants. House renovation that not followed regulation can cause fire risk. In summary, financial constraints, bureaucratic complexity, and regulatory adherence are the most pressing problems, while structural and safety issues are of comparatively lesser concern. This analysis underscores the need for improved affordability, streamlined processes, and attention to comfort and structural quality during renovations.

**4.4 Part D: The recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation**

Part D questions are discussing about recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation. In this section, researcher posed 9 questions which had a Likert Scale option. After collecting the data, the summary of recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations related to house renovation is shown in Table 9.

**Table 9: Summary of analysis the recommendation of strategies to enhance the awareness among homeowners about Building Control regulations related to house renovation**

Item	Statement	Mean	Level Agreement	Ranking
D1	Launching public awareness campaigns through various media would increase knowledge of building control regulations.	4.45	Very High	4
D2	Organizing regular educational workshops on building control regulations would increase homeowners’ awareness.	4.32	Very High	8
D3	Providing comprehensive online resources and guides about building regulations would be beneficial.	4.40	Very High	6
D4	Developing interactive online tools (e.g., checklists) would aid in understanding compliance requirements.	4.41	Very High	5
D5	Simplifying the permit application process would help homeowners understand and comply with regulations.	4.57	Very High	1
D6	Give proper explanation during consult before renovating homeowner’s house.	4.56	Very High	2
D7	Encouraging collaboration between homeowners and contractors to ensure regulatory compliance would be effective.	4.48	Very High	3
D8	Participate the event that community make to understand more about regulation	4.30	Very High	9
D9	Have self-awareness such as read more about regulation that provided by local authority and government.	4.31	Very High	7

From the Table 9, presents recommendation of strategies to enhance homeowners the awareness towards Building Control Regulations related to house renovation, ranked according to their severity based on mean scores. The most effective strategies for enhancing homeowners' awareness of Building Control Regulations related to house renovations is focus on simplifying the permit application process (Rank 1, mean = 4.57), which homeowners believe would help them better understand and comply with regulations. Followed by providing proper explanations during consultations (Rank 2, mean = 4.56) and encouraging collaboration

between homeowners and contractors to ensure regulatory compliance would be effective (Rank 3, mean = 4.48). Other effective strategies include collaboration between homeowners and contractors (Rank 4, mean = 4.48) and developing interactive online tools (e.g., checklists) would aid in understanding compliance requirements. (Rank 5, mean = 4.41). On the other hand, homeowners encourage to participate the event that community make to understand more about regulation (Rank 9, mean = 4.30) are ranked lower, suggesting they are seen as less impactful.

Based on the Table 9, local authority should focus on simplifying the permit application process to help homeowners understand and comply with regulations. By having procedure, it eases the understanding of process the house renovation. Through the website such as MBPJ portal or PJ City helps respondents to enhance the awareness about Building Control Regulations related to house renovation. Professional in construction such as Architect or Engineer need to give proper explanation during consult before renovating homeowner's house. This can give exposure to the homeowners about Building Control Regulations in terms of regulation and law. This can influence the homeowners to follow and understand the building control regulation even better.

Encouraging collaboration between homeowners and contractors to ensure regulatory compliance would be effective This can improve communication helps clarify expectations and compliance requirements. It also can give impact by encourage the public to apply the correct building renovation practice.

Other effective strategies include collaboration between homeowners and contractors. It ensures not only regulatory compliance but also improves project quality, satisfaction, and efficiency. Enhance awareness by developing interactive online tools (such as checklists) would aid in understanding compliance requirements are one of the effective ways. Homeowners can follow and cross check to ensure it follows the regulation through the checklist. The interactive online tools are also included in the MBPJ portal website.

Homeowners encourage to participate the event that community make to understand more about regulation. The event such as participates in the workshop that provided by government through local authority can enhance the awareness among homeowners. The findings emphasize that homeowners value simplified, practical solutions and direct support over passive approaches such as workshops or reading resources. To improve awareness and compliance, efforts should focus on streamlining permit processes, improving consultation quality, and fostering collaboration. Overall, the findings emphasize that homeowners value simplified, practical solutions and direct support over passive approaches such as workshops or reading resources. To improve awareness and compliance, efforts should focus on streamlining permit processes, improving consultation quality, and fostering collaboration.

## **5. Conclusion**

### **5.1 Objective 1: To determine the understanding of homeowners towards compliance Building Control Regulations related to house renovation.**

Based on the data analysis that have been made, the first objective is achieved through quantitative method by questionnaire from respondents and the from literature review in this research. It is summarized that the understanding of homeowners towards compliance Building Control Regulations related to house renovation. The respondents recognize Majlis Bandaraya

Petaling Jaya as their local authority, reflecting their awareness of local governance authority plays important role in terms of renovating the house to ensure the process of the renovation are according to the law and regulation. The homeowners also know about Building Control Regulations, which is when they wanted to renovate the house, the renovation should not exceed the setback of the house that stated in regulation. The regulation of the setback is depending on the type of the house and the surrounding of it. According to Jabatan Perancangan Bandar dan Desa Negeri Selangor (2022) mentioned that, terrace house should have setback 20 feet (6.1m) from the road for the front elevation and corner lot and for the need to have 10 ft (3.05m). However, through questionnaire, the respondents are still not aware that the height of column cannot high as 2 floors if their house is 1 floor.

### **5.2 Objective 2: To investigate the problems faced by homeowners regarding Building Control Regulations for house renovation**

Based on the data analysis that have been made, the second objective is achieved through quantitative method by questionnaire from respondents and the from literature review in this research. It is summarized that investigate the problems faced by homeowners regarding Building Control Regulations for house renovation. All of respondents agreed the problems faced by homeowners is cost constraint which is concern the amount of money that needed to pay when submit the design to the local authority. The homeowners need to consider such as house renovation process bill, plan deposit bill, construction material permit bill and RoRo barrel deposit payment. The least problem that homeowners faced are the safety in terms of fire escape is not sufficient. This proves that homeowners still consider the safety although they already renovate the house.

### **5.3 Objective 3: The recommendation of strategies to enhance the awareness among homeowners about Building Control Regulations for house renovation**

Based on the data analysis that have been made, the third objective is achieved through quantitative method by questionnaire from respondents and the from literature review in this research. It is summarized recommendation of strategies to enhance the awareness among houseowner about Building Control Regulations related to house renovation. The most effective way to enhance the awareness among homeowners is by simplifying the permit application process would help homeowners understand and comply with regulation. By having the procedure, the homeowners can comply and understand process such as through MBPJ portal and PJ City.

### **Acknowledgement**

Communication of this research is made possible through monetary assistance by Universiti Tun Hussein Onn Malaysia and the UTHM Publisher's Office via Publication Fund E15216. Furthermore, we extend our gratitude to the International Virtual Go Green (iVGG) 2025 committee for providing a platform for researchers to share knowledge and network, as well as to the Asian Scholars Network for publishing this article.

### **Conflict of Interest Statement**

The authors declare that there is no conflict of interest regarding the publication of this research.

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