



**DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

HOUSE RENOVATION

**Prepared by:
NUR NISA SYAFIQAH BINTI NASIR
2019289438**

**DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

NOVEMBER 2021

It is recommended that the report of this practical training provided

By

**Nur Nisa Syafiqah Binti Nasir
2019289438**

entitled

House Renovation

be accepted in partial fulfilment of requirement has for obtaining Diploma in Building.

Report Supervisor : Ts Mohd Najib Bin Abd Rashid

Practical Training Coordinator : Dr. Nor Asma Hafizah Bt. Hadzaman

Programme Coordinator : Dr. Dzulkarnaen Bin Ismail

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

**UNIVERSITI TEKNOLOGI MARA
(PERAK)**

STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Tharwa Builders for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

.....

Name : Nur Nisa Syafiqah Binti Nasir

UiTM ID No : 2019289438

Date : 10 January 2022

ACKNOWLEDGMENT

Alhamdulillah, praise to Allah, the Most Merciful, the Most Graceful.

I would like to convey my sincere appreciation to the Almighty Allah for giving me the strength and the ability to finish my practical training. Also, I want to express my heartfelt gratitude to the following group of incredible people for their guidance, counsel, and assistance throughout the training period. First and foremost, I want to express my gratitude to En. Helmi Najib for allowing me to undertake my training at her department. Mr. Ben and Ms. Marsya, two of his professionals, have helped me to have a better grasp, knowledge, and feel for real-world projects and the theory involved in them.

I would also like to thank all the UiTM lecturers that have taught and nurtured me in becoming a better student and person. I would like to express my gratitude to all of the lecturers who were actively involved in my training. To Miss Nor Azizah Binti Talkis, Practical Training Coordinator (Placement), Ts Mohamad Najib Bin Abd Rashid, Supervising Lecturer, Sir Muhammad Naim Bin Mahyuddin, Practical Training Coordinator (Supervision) and Dr. Dzulkarnaean Bin Ismail, Programmed Coordinator, I appreciate their time, effort, support, and suggestions in helping me complete my training, this report, and the vital knowledge that they have shared throughout the last several semesters.

Last but not least, my special thanks to my beloved parents for their sacrifices over the years.

Thank you so much.

ABSTRACT

House renovation is to return something to a good state of repair or upgrading to something new. It is typically done for either commercial or residential. In this case, it was done at residential house. The aim of this study is to discover the construction for house renovation for a residential building. The main objective of this report is to identify the methods of house renovation process, to determine the time of house renovation process and to identify the problems and solution in house renovation process. Methodology for the case study technique has been used is by three methods which are observation, interviews, and document review. During the construction for this project, all data was recorded with explanations from supervisor, contractor. As a result, it was determined that contractors must prioritise housing renovations. Lastly, the writer hopes that this report has achieved the objectives related to the house renovation process that is discussed.

CONTENTS	PAGE NO
Acknowledgements	i
Abstract	ii
Contents	iii
List of Tables	iv
List of Figures	v
CHAPTER 1.0 INTRODUCTION	
1.1 Background of Study	1
1.2 Objectives	3
1.3 Scope of Study	4
1.4 Methods of Study	5
CHAPTER 2.0 COMPANY BACKGROUND	
2.1 Introduction of Company	6
2.2 Company Profile	7
2.3 Organization Chart	8
2.4 List of Project	9
2.4.1 Completed Projects	9
2.4.2 Project in Progress	10
CHAPTER 3.0 INSTALLATION OF ROOF TRUSSES	
3.1 Introduction to case study	11
3.2 Method of house renovation process	13
3.3 Time of renovation process	17
3.4 Problems and solution in house renovation	18
CHAPTER 4.0 CONCLUSION	
4.1 Conclusion	20
 REFERENCES	 21

LIST OF TABLES

Table 1: Completed Projects	9
Table 2: Project in Progress	10

LIST OF FIGURES

Figure 1: Location of the company based on satellite map.....	7
Figure 2: Organiational Chart for Tharwa Builders	8
Figure 3: Location of site based on the satellite map	11
Figure 4: Front view of the house.....	12
Figure 5: Layout plan of the house	12
Figure 6: Demolition work.....	13
Figure 7: Plastering work at the kitchen	16
Figure 8: Plastering work at the toilet.....	16

CHAPTER 1.0

INTRODUCTION

1.1 Background of study

The term 'renovation' describes the process of restoring something to its excellent shape (*Renovation*, n.d.). Renovation is the process of improving or modernising an old, damaged, or malfunctioning structure in the construction business (*Renovation*, n.d.). This differs from 'retrofitting,' which involves adding a component or feature that was not initially included, or 'refurbishment,' which is a cleaning, decorating, or re-equipment procedure (*Renovation*, n.d.). People frequently buy run-down properties, such as houses, then renovate them in order to increase their worth (*Renovation*, n.d.). Renovation work is usually classified as either 'cosmetic' or 'structural' (*Renovation*, n.d.).

Extensions, loft conversions, basement construction, floor plan remodelling, rewiring, and re-plumbing are examples of structural renovations (*Renovation*, n.d.). Painting and other types of decoration, minor repairs, flooring, replacing fixtures and fittings, and modest landscaping are examples of cosmetic renovations (*Renovation*, n.d.).

The importance and power of the planning stage has grown as a result of technological advancements in the refurbishment process ("Renovation," 2021). Free online design tools have made it easier to visualise the changes for a fraction of the cost of employing a professional interior designer ("Renovation," 2021). The purpose of the remodelling has an impact on the decision to make adjustments ("Renovation," 2021). Changes to solve a structural issue or design flow yield, or to use light and colour to make rooms appear more spacious, can result in a return on investment in the case of a "fix-and-flip" (repair and resale) purpose ("Renovation," 2021).

Many people modify their homes to give them a fresh look or to allow another person to live in them ("Renovation," 2021). Home renovations are popular among builders

because they provide a steady source of revenue (“Renovation,” 2021). Homeowners frequently modify their properties in order to boost their resale value and profit when they sell (“Renovation,” 2021). Additionally, homeowners may choose to make their home more energy efficient, environmentally friendly, or sustainable, which may necessitate some renovation work (“Renovation,” 2021). Alternatively, for aesthetic or comfort reasons, a homeowner's own preferences and demands may change over time, necessitating a makeover (“Renovation,” 2021).

Because most builders concentrate on new home construction, renovating is usually a part-time job for them (“Renovation,” 2021). Renovations necessitate certain processes and services, and once plans are approved, the process of creating a new home is pretty predictable (“Renovation,” 2021). Renovations typically necessitate all of the sub-trades required for the construction of a new structure. Renovation firms must often be flexible in order to adapt to unexpected challenges that develop throughout projects (“Renovation,” 2021). Renovation projects necessitate not only flexibility, but also a plan that has been agreed upon by various stakeholders (“Renovation,” 2021). The planning process will include input from the project's financial investors as well as the designer (“Renovation,” 2021). Part of the planning process will include gathering data for the project's completion, after which the project plan will be amended and approved before renovations can begin (“Renovation,” 2021).

1.2 Objectives

The objectives of this report are:

- i. To identify the methods of house renovation process
- ii. To determine the time of house renovation process
- iii. To identify the problems and solution in house renovation process

1.3 Scope of Study

For this practical report, the house renovation for two storey terrace house was selected. This site was located at Seksyen 13, Shah Alam, Selangor Darul Ehsan. In this project, the writer focused on the method how house renovation process. It has discussed about the initial things that need to be done for this work which are from the beginning of the process on how to operate and then how the process. Then, the writer also has made a study of the time of house renovation process and lastly the problems that occur and what solutions will be taken to solve the problems.

1.4 Method of Study

There are three methods of study were used in obtain information for this report. The methods are through observation, interviews, and document.

1. Observation

This observation method is a way of collecting data through observing. The observation is about how the renovation process of a house. The average time taken for this observation approximately around 3-4 months and it depends on the house. The bigger the house, the longer it takes to completes the renovation. Meanwhile, it takes some times for the finishing because it requires skill and need to be done carefully. The observation of the house renovation process had been recorded by some notes that lasted 20 weeks.

2. Interview

Other methods that can be used to obtain information for this project is interview. Interview was conducted to obtain more detailed information about the project. The writer had an interview with the contractor and supervisor.

3. Document review

The documents review that have been used to collect all the data for the construction is company profile, standard operating procedures (SOP), progress report and the pictures that taken by other workers.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of Company

Tharwa Builders was established in year 2015 as a construction company serving the private and commercial client and a registered license company with Construction Industry Development Board (CIDB) Malaysia & SPKK (0120160414-SL173309). This company registered in grade G2 in category B (building construction) for specialization B04, CE (civil engineering construction) for CE21 and ME (mechanical and electrical) for M15 specialization under CIDB. Apart from being registered under CIDB, this company has complete with SSM registration, 201603010303 (SA0366675-H).

2.2 Company Profile

Tharwa Builders was established and started operating in 2015, and currently active in professional consultation and advisory, bungalow specialist (design and built), renovation and extension, maintenance and refurbishment, IBS professional builder (certified), Electrical wiring (PW4), billboards & lightboxes, and road and signages. This company based in Selangor located at No 53-2, E-Boulevard, Jalan Elektron 16/D, Seksyen U16, 40160 Shah Alam, Selangor.



Figure 1: Location of the company based on satellite map

Source: <https://www.google.com.my/maps>

The company has few employees and has collaborated with several construction-related companies. Tharwa Builders can be contacted via company email at tharwa.builders@gmail.com, facebook (Tharwa Builders), instagram (@tharwabuilders) or directly contact through company number (012 2148541).

2.3 Company Organization Chart

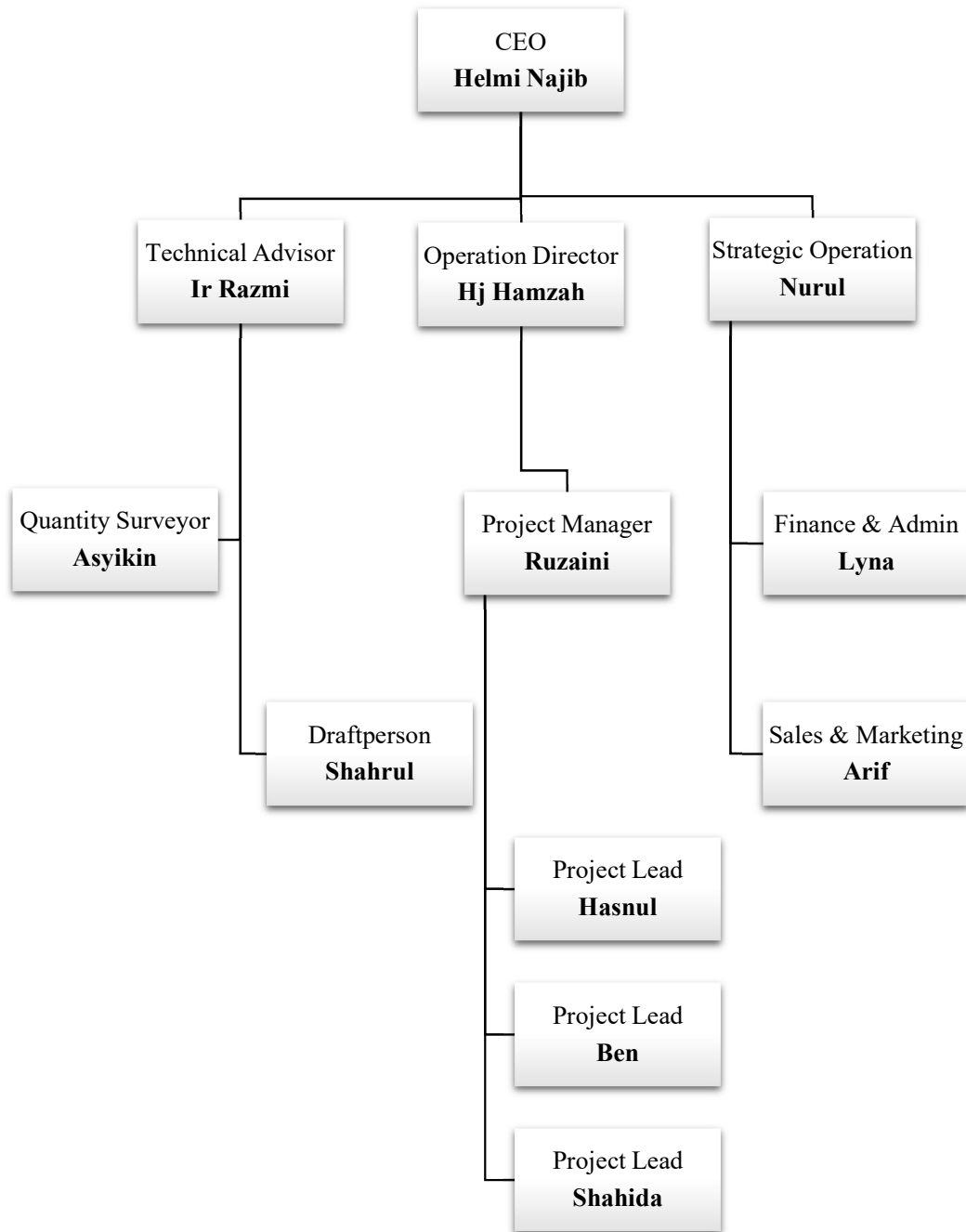


Figure 2: Organizational Chart for Tharwa Builders

2.4 List of Project

2.4.1 Completed Projects

Table 1: Completed Projects

No.	Project Location	Date	Owner/Company
1.	Hulu Langat	May 2018	Encik Rani
2.	Shah Alam, Sek 10	Jun 2018	Encik Farhan
3.	Jalan Kuching	Jun 2018	Quattro House
4.	Q Sentral	July 2018	Q Sentral
5.	Bandar Sunway	August 2018	Encik Arif
6.	Kota Seriemas	September 2018	Encik Azwan
7.	Villa Puteri	October 2018	Dato' Sri Wan

2.4.2 Project in Progress

Table 2: Project in Progress

No.	Project Location	Date	Owner/Company
1.	Seksyen 10, 40000 Shah Alam, Selangor Darul Ehsan	August 2021	Encik Muhammad Izzudin dan Puan Nur Diana Solehah
2.	Seksyen 13, 40100 Shah Alam, Selangor Darul Ehsan	August 2021	Puan Baiduri dan Encik Herman

CHAPTER 3.0

CASE STUDY

3.1 Introduction to Case Study

For this practical report, the renovation process for two storey terrace house was selected. The house has two levels. The site was located at Seksyen 13, Shah Alam, Selangor Darul Ehsan. This project was adjacent to Tharwa Builders. It took about 3-4 months to finish the project.

Among the activities that has been carried out at site were, demolition, RC structure work, behind the wall, install new flooring, install countertops and fixtures, and finishes work. In this project, the writer focused on the method house renovation, the time of house renovation process and lastly the problems and solutions taken to solve the problems.

The process of improving a broken, damaged, or old structure is known as house renovation. Commercial and residential renovations are the most common types of renovations. Renovation can also relate to creating something new or bringing something back to life, and it can be used in social situations. A community, for example, can be renovated if it is fortified and revitalised.

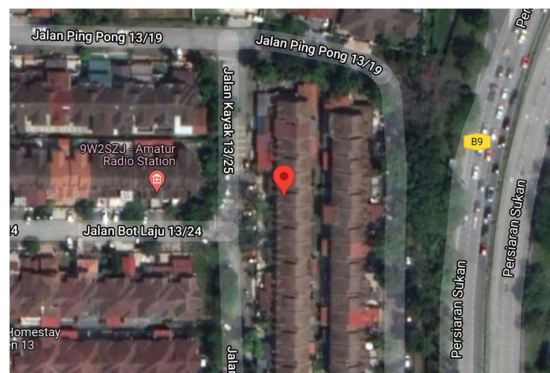


Figure 3: Location of site based on the satellite map

Source: <https://www.google.com.my/maps>

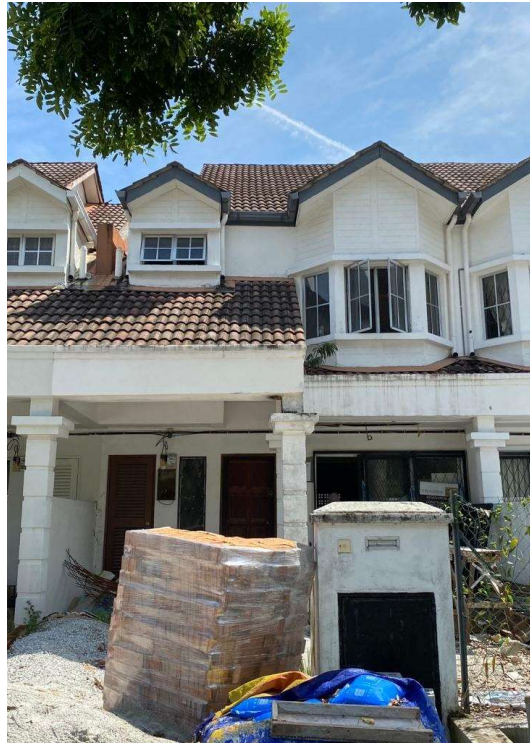


Figure 4: Front view of the house

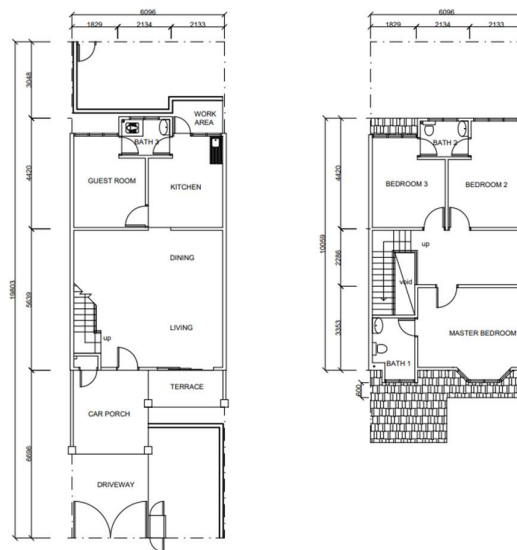


Figure 5: Layout plan of the house

3.2 To identify the Methods of House Renovation Process

DEMOLITION

Before beginning demolition work, large items were removed such as furniture, fixtures, decorations, appliances, and personal belongings. All water, electrical, and gas lines to the structure have been turned off and properly capped. For this stage, Providers were contacted to send service professionals to the building to check that all utilities were properly off.

After the room has been emptied, begin removing the doors and frames from the walls and the sub-structures behind them. Start with floor tiles after the inner rooms have been cleared away. Collect plumbing and wiring along the way and salvage any decorative fixtures, such as ceiling fans and lighting systems, after all building materials in the area have been removed.

Bathroom demolition entails a number of more difficult chores, such as the removal of sinks, bathtubs, and other fixtures. Remove the flooring materials and demolish the walls as stated above after the bathroom has been cleaned of things and the fixtures have been uninstalled.

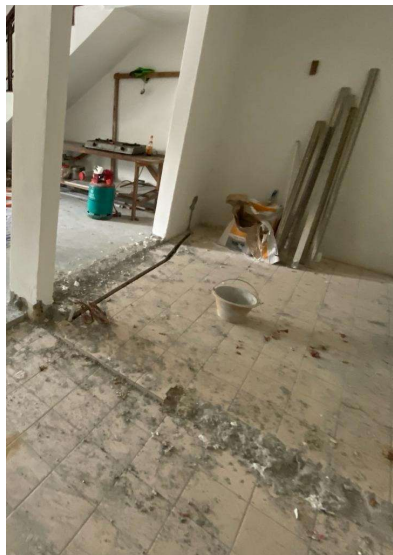


Figure 6: Demolition work

RC STRUCTURE WORK

The component of the building above the plinth level is known as the superstructure. A column and beam are the most important parts of the superstructure. The columns were raised to the level of the slab, and the frame for future construction is created.

Following the completion of the column and beam framework, masonry work with various materials such as bricks, concrete blocks, fly ash bricks, and other materials is begun in accordance with the building drawing. A cement mortar mix is used for masonry work. It is made of cement and sand. During the masonry process, gaps for doors and windows are carefully built out according to the plans.

The lintel is used to support the masonry construction above the door and window. After that, more masonry work is completed. The formwork for the slab sitting on the column and beam is then commenced. Slab reinforcement were installed over the slab formwork according to the slab detailed drawing.

By levelling the flooring and the top plate with ceiling joists, a new wall has been added. When necessary, align the bottom plate of the wall with the moisture barrier and space the studs apart. Doors were framed, and any items that required more behind-the-wall support, such as televisions or floating shelves, were examined. For electrical or utility services, holes were punched. Ceiling drops and window surrounds were framed in as decorative elements. Outside walls should be insulated, and drywall should be hung and taped.

BEHIND THE WALLS

Any modifications that are required within the walls must be completed before they are closed in. The inspectors looked for inefficient insulation, leaking or rusty pipes that could contain lead, electrical lines that did not meet current construction requirements, and heat and air conditioning systems that were not adequately sealed and obstructed.

Plumbing has been added to open walls to accommodate new sinks, tubs, toilets, or showers. Electrical outlets, recessed lighting, ceiling lights, and internet and cable television hookups were also installed.

INSTALL NEW FLOORING

Built-in fixtures are added to the home once the walls are entirely framed and everything behind the walls is placed and taken care of. This stage may occur in one of two ways, depending on the finishes chosen. Most importantly, the height of cupboards and appliances has been considered prior to the installation of the flooring.

Installing tile flooring beneath the cabinets will allow you to change cabinet types as your flooring of choice wears out. It guarantees that everything is installed at the same height and protects the cabinets from nicks and scratches.

INSTALL COUNTERTOPS AND FIXTURES

The remaining fittings are then installed on top of the flooring. The toilet, shower, and vanity in the bathroom were installed after the flooring was done to allow for future changes without having to replace everything. The countertops are set and bonded in place after all of the base cabinets and vanities have been installed.

FINISHES WORK

Plastering is one of the finishing processes in the construction industry. Cement plastering was used in this example. It is made up of Portland cement, fine aggregates, and water in a homogeneous mixture. It must be assured that the water penetration test was completed satisfactorily prior to the scheduled plastering job of seven days. Prior to beginning the plastering layer, a render coat was applied. To eliminate cold joints and abrupt variations in the uniform appearance of subsequent coats, each plaster coat was applied to a full wall or ceiling panel without interruption. At naturally occurring discontinuities in the plane of the plaster, such as corner angles, rustications, apertures, and control joints, wet plaster shall abut set plaster when this is possible.



Figure 7: Plastering work at the kitchen

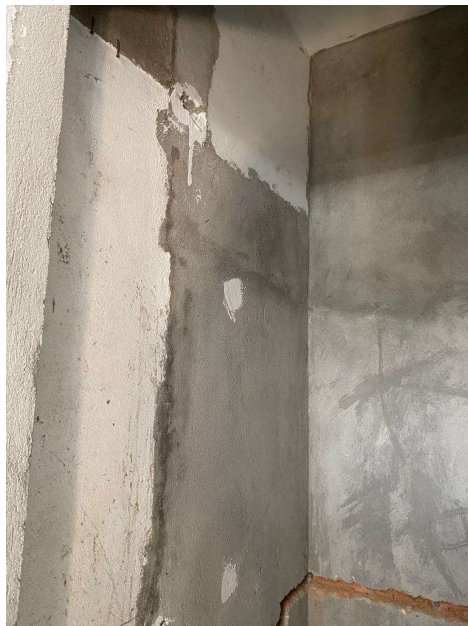


Figure 8: Plastering work at the toilet

3.3 To Determine the Time of House Renovation Process

In contracts, the concept of completion time is crucial. Failure to execute a duty under a contract within the time frame stipulated is normally considered a "material" breach of contract, and the other party may be entitled to damages. If no time constraint is specified, the default attitude is that the allowance must be appropriate, alternatively, in some instances, time is deemed "at large" and irrelevant.

The job has been delayed for a variety of reasons, and it is not necessarily the contractor's responsibility. Nature, for example, can be an unwelcome guest on a construction job, causing delays.

For the house renovation in this project, it supposed to take around 2-3 months but overall it took around 3-4 months to finish the renovation. Throughout the construction there are some natural obstacles such as rainy day and also the pandemic of Covid-19 that control the movement of construction. Those obstacles was the reasons why the work has been delayed.

3.4 To Identify the Problems and Solution in House Renovation

Problem: Water Damaged

Water damage is a significant, but all-too-common problem for homeowners. It all starts with a roof leak, which can go undetected until the water seeps into the ceiling. Faulty plumbing, such as a broken or leaky pipe, causes water damage. In certain circumstances, the leak may not be discovered until the walls are opened up for reconstruction. From decaying timber and plaster to mould, mildew, and termites, the consequences can be devastating.

Solution: Repair Structural and Roofing Issues

If water damage is discovered during remodelling, make sure all structural and roofing issues are addressed and repaired completely. Bring in a team of experts to deal with any secondary issues, such as mould removal, to ensure that the residence is safe and healthy.

Problems: Foundation Cracks and Other Issues

Cracks in the walls and flooring, gaps around the boundaries of rooms, and stuck doors and windows are all signs of a problem. Occasionally, the problem is identified when working on the site. The weight of the house and the settling of the land beneath it can exert strain on the foundation, cracking and buckling the concrete.

Solution: Inspection

A structural engineer examines the house to determine the extent of the problem and to offer a solution. Steel bracing bolted to the house may be sufficient to stabilise the foundation in some circumstances. In some cases, helical screws or concrete piers may be required to underpin the foundation. In the worst-case scenario, a whole new foundation may be necessary.

Problems: Renovation Time

Another concern that arises frequently is the length of time it takes to renovate. It takes longer than expected, which, among other things, causes delays. While there are a variety of reasons for delays, they can include unforeseen events, as well as unfavourable weather in the area, such as rain. The time was underestimated by the contractors.

Solution: Provide Details

Provide as much detail as possible to the plans, especially early on (before any drawing). This saves a lot of time when it comes to changing the drawings. Furthermore, the majority of the delays occur during the discussion stage, if there is a disagreement between the client. Once confirmed, proceed with the job in a seamless and timely manner.

CHAPTER 4.0

CONCLUSION

The term "renovation" refers to the alteration of an existing structure or a portion of one. It's a hybrid of demolition and construction that takes place in constrained spaces and is identified by the portions of the structure that are kept. Demolition, RC structure work, behind the wall, new flooring, countertops and fixtures, and finishing work were all part of the house remodelling process. The process took around 3-4 months for the renovation construction. The house renovation process delayed a few times because of the weather and also the movement control order during the pandemic Covid-19. Therefore it takes more times than the estimated. The approach used in the construction of a house remodelling is a common method that is comparable to the theory. Nothing was done in a different way during the remodelling. Furthermore, issues such as water damage and other issues have been resolved.

REFERENCES

4 Major Problems with Renovation – Solution Inside!!! - Jomeco. (n.d.). Retrieved December 10, 2021, from <https://jomeco.design/4-major-problems-with-renovation-solution-inside/>

Common Issues When Renovating a Home and How to Prepare. (n.d.). Retrieved December 10, 2021, from <https://www.simsbuilders.com/blog/common-issues-renovating-home-prepare>

Demolition—Designing Buildings. (n.d.). Retrieved December 10, 2021, from <https://www.designingbuildings.co.uk/wiki/Demolition>

Method Statement for Cement Plastering – Architectural Finishings Concrete Work. (2018, May 21). *Greenlifeart.* <https://qaqconstruction.com/2018/05/21/method-statement-cement-plastering-architectural-finishings-template/>

plastering work procedure in malaysia—Google Search. (n.d.). Retrieved December 10, 2021, from https://www.google.com/search?q=plastering+work+procedure+in+malaysia&rlz=1C1GCEA_enMY864MY864&sxsrf=AOaemvLVjUHYgwFiQzGD0U THZOJT79SGYw%3A1639102172662&ei=3LayYbz7J4zargSZh57oBQ&ved=0ahUKEwi82YG2k9j0AhUMrYsKHZmDB10Q4dUDCA4&uact=5&oq=plastering+work+procedure+in+malaysia&gs_lcp=Cgdnd3Mtd2l6EAM6BwgAEEcQsAM6BQgAEIAEOgYIABAWEB46CAghEBYQHRAeOgcIIRAKEKABSgQIQRgASgQIRhgAUKoCWMVCYP9IaAFwAngAgAH3AYgBmRS SAQUwLjMuOZgBAKABAcgBCMABAQ&scient=gws-wiz

Renovation. (n.d.). [Definition; Guidance]. <https://www.designingbuildings.co.uk>. Retrieved December 9, 2021, from <https://www.designingbuildings.co.uk/wiki/Renovation>

Renovation. (2021). In *Wikipedia*. <https://en.wikipedia.org/w/index.php?title=Renovation&oldid=1057101386>

Renovation—An overview | *ScienceDirect Topics*. (n.d.). Retrieved December 10, 2021, from <https://www.sciencedirect.com/topics/engineering/renovation>

The importance of time in construction contracts | *Croner-i*. (n.d.). Retrieved December 10, 2021, from <https://app.croneri.co.uk/feature-articles/importance-time-construction-contracts>

UPDATED 03·24·2020, A. B. D. 8 M. H. R. 101 L. (2020, March 24). *10 Steps to Home Reno Construction*. Melanson Homes. <https://melansonhomes.com/your-guide-to-home-renovation-construction-in-10-steps/>