



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

**MAINTENANCE & SERVICES WORK
(ROOF RENOVATION)**

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(PERAK)

AUGUST 2021

It is recommended that the report of this practical training provided

By

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MAINTENANCE & SERVICES WORK

(ROOF RENOVATION)

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

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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 A.H. Ayub Enterprise 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.

.....
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ABSTRACT

Roof is is the top covering of a building and also one of the basic components includes the materials and structures required to support it on the building's walls or uprights, giving protection from rain, snow, sunlight, temperature extremes, and wind. Therefore, this report will explain the detail of method renovating roof and the problem with their solution. This report is carried out as a part of internship criteria in UITM Perak. The objective of the report is to gain knowledge and information on roof renovation method and identify the issue on the roof and the way to overcome the issue. It will focus on roof renovation process to determine the method that are use and the problems that are faced. To illustrate the method of roof renovation from setting out to the finishing work that must be follow the sequence of work as per approved in method statement. This report will also investigate the problem that might occurred in the roof renovation with the effective solution to eliminate the problem without cause any trouble that prevent future work.

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CHAPTER 1.0

1.1 Introduction

1.1.1 Background of Study

The term 'renovation' describes the process of restoring something to its original condition. Renovation is the process of improving or modernizing an old, damaged, or malfunctioning structure in the construction business. 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.

A roof is a building's top covering, which includes the materials and constructions required to support it on the building's walls or uprights, giving protection from rain, snow, sunlight, temperature extremes, and wind. The building envelope includes the roof. The top of a building's roof serves to protect it from rain, snow, sunlight, wind, and temperature extremes. Roofs have been built in a range of shapes and sizes, including flat, pitched, vaulted, domed, and combinations, depending on technical, economic, and aesthetic concerns. The first roofs built by humans were most likely thatched roofs composed of straw, leaves, branches, or reeds, and they were normally set at a slope, or pitch, to allow rainwater to drain off. Conical thatched roofs are a good example of this kind, and they are still commonly used in rural Africa and other parts of the world. Eventually, thicker branches and beams were employed to span a roof, with clay or another reasonably impervious substance pressed into the gaps between them. With these materials, gabled and flat roofs were both possible. The basic roof forms of the dome and vault developed with the advent of brick and cut stone for construction.

Flat roofs and slope roofs are the two basic types of roofing. The flat roof has long been popular in the Middle East, the American Southwest, and other parts of the world where the climate is desert and water drainage is a secondary concern. In the nineteenth century, new waterproof roofing materials, as well as the usage of structural steel and concrete, made flat roofs more viable in Europe and the Americas. Flat roofs quickly became the most popular

choice for covering warehouses, offices, and other commercial structures, as well as many residential constructions.

Sloping roofs exist in a wide range of styles. The lean-to, or shed, is the most basic, with simply one slope. A gable, or pitched, roof is one that has two slopes that create an "A" or triangle. This sort of roof has been a feature of household architecture in northern Europe and the Americas for ages, dating back to ancient Greece's temples. It is still a very common roofing material. A hip roof, also known as a hipped roof, is a gable roof with sloped ends rather than vertical ones. It was popular in Italy and other parts of southern Europe, and it is now found in many American homes. For homes with more complicated design, gable and hip roofs can be used. The gambrel roof is a sort of gable roof having two slopes on each side, one steeper than the other. The mansard roof is a two-sloped hipped gambrel roof with two slopes on each side. In Renaissance and Baroque French architecture, it was commonly employed. Both of the aforementioned roof styles can give additional attic space or other rooms without requiring the construction of a second level. They can also be quite appealing to the eye.

Why is a roof important? There are several reasons why the roof is so important which are to protect the interior of the structure from the effects of weather such as rain, wind, sun, heat, and snow. Next, the advantage of having roof is to provide insulation from the elements. Insulation boards or batt insulation are used in most current commercial/industrial roof installations. In most circumstances, the minimum R-value required within the roof assembly is determined by the International Building Code and the International Residential Code. Besides, roof also important to shed water, that is, to keep water from accumulating on the roof surface. Standing water on the roof surface adds to the living load on the roof structure, posing a safety concern. Most roofing materials deteriorate prematurely as a result of standing water. Standing water renders the warranties of some roofing manufacturers worthless.

There are many types of roofs, however, the aim of this discover maintenance & services of renovating roof is about slope roof at Hotel Putra KL.

1.2 Objectives

- To investigate the methods of renovating roofs process.
- To identify the problem occurred and the solution taken to solve the problems of renovating roofs.

1.3 Scope of Study

The scope of study has been carried out at Hotel Putra KL and located at Lot 149 Seksyen, 8, Jalan Tun Razak, 50050 Kuala Lumpur, Wilayah Persekutuan. The project had started in 10/08/2021 and completed on 31/08/2021. The renovation is about roof renovation and repairing acoustic panels of Hotel Putra KL and cost Eighteen Thousand One Hundred Ringgit Malaysia (RM 18,100.00). The project is already finished. Therefore, the focus of the study is to determine on how the roof renovation process is undertaken. Furthermore, the problems and solutions are also included in this study. Even so, the study does not concentrate on the quantity of manpower or labours, the costs, and the duration matters. In order to fulfil the data, there were three methods that needed to be carried out which are observation, interview, and document reviews. In conclusion, all further explanations relating to the above method were explained as below.

1.4 Methods of Study

a) Observation

Observation is a method of gathering data through observation. The observation is about how the roof renovation procedure works from the beginning to the end. Because of safety issues, the average time taken for this observation was around 15-30 minutes. The observation will consist of an onsite inspection with the site supervisor and a weekly status report from the site. This method of study will observe the condition and requirement of the roof renovation with the help of site supervisor.

b) Interview

The interview is one of the methods to gathering data of maintenance and services by performing a formal or informal interview with a project's trusted person. The interview was usually conducted by the company manager, site supervisor, and skilled workers. If there is a problem or issue with the renovation roof work, the interview will take place on site or in the office. With interview, important information such as the method of renovation and defect can be secure.

c) Document Review

The documents review that have been used to collect all the data for the maintenance and services work is company profile, standard operating procedures (SOP), progress report and the pictures that taken by other workers will be reviewed to gain some information for essential of the study. During document reviews, images that belong to others are also the best reference. This document reviews were placed at the office.

CHAPTER 2.0

2.1 Company Background

2.1.1 Introduction of Company

A.H. Ayub Enterprise is a company registered under the Malaysian Construction Industry Development Board (CIDB). Plus, this company was established on April 6, 1993 and has that experience quite extensive in the construction sector especially engineering civil and electrical. This company is registered in grade G1 in category B (Building Construction) for specialization B02, B04, B07, B08, B09, B12, B13, B14, B15, B18, B24, B26, B28 and CE (Civil Engineering Construction) for CE01, CE06, CE13, CE14, CE19, CE20, CE21, CE31, CE34, CE36, CE42, CE43. Plus, this company also registered in grade G2 in category ME (Mechanical and Electrical) for specialization E03, E06, E07, E10, E11, E16, E17, M01, M15 and ME. (Mechanical and Electrical) for E04. Apart from being registered under CIDB, this company has SSM Business Registration certificate (000931542-K), Ministry of Finance Malaysia Company (K10344543902043405) and Bumiputera Company Ministry of Finance Malaysia (BP10344543902082091). This company's account bank is Maybank, Jalan Tun Razak branches. For almost 28 years, the company has dabbled in field of construction and always provide services or the best service to customers no matter in what current economic situation because this company mission is providing construction engineering service quality and best for all public and private sectors. Today, the company is one of the Class Contractor companies F/G1 & G2 selected and known in all public sectors and mostly the private sector. This company has a party very knowledgeable top management as well highly experienced and support from technical staff who are highly trained as well as dedicated to continuing to provide the best service to move forward to front.



Figure 1: The Company's Logo

2.2 Company Profile

A.H.Ayub Enterprise was established and start operating from 1993, and currently active in government project work tenders, electrical, renovation, and other related work. This company based in Kuala Lumpur and located at No. 7A, Jalan Pelangi 2, Taman Pelangi Jaya, 51100 Kuala Lumpur, Wilayah Persekutuan.



Figure 2: Location of the company based on the satellite map

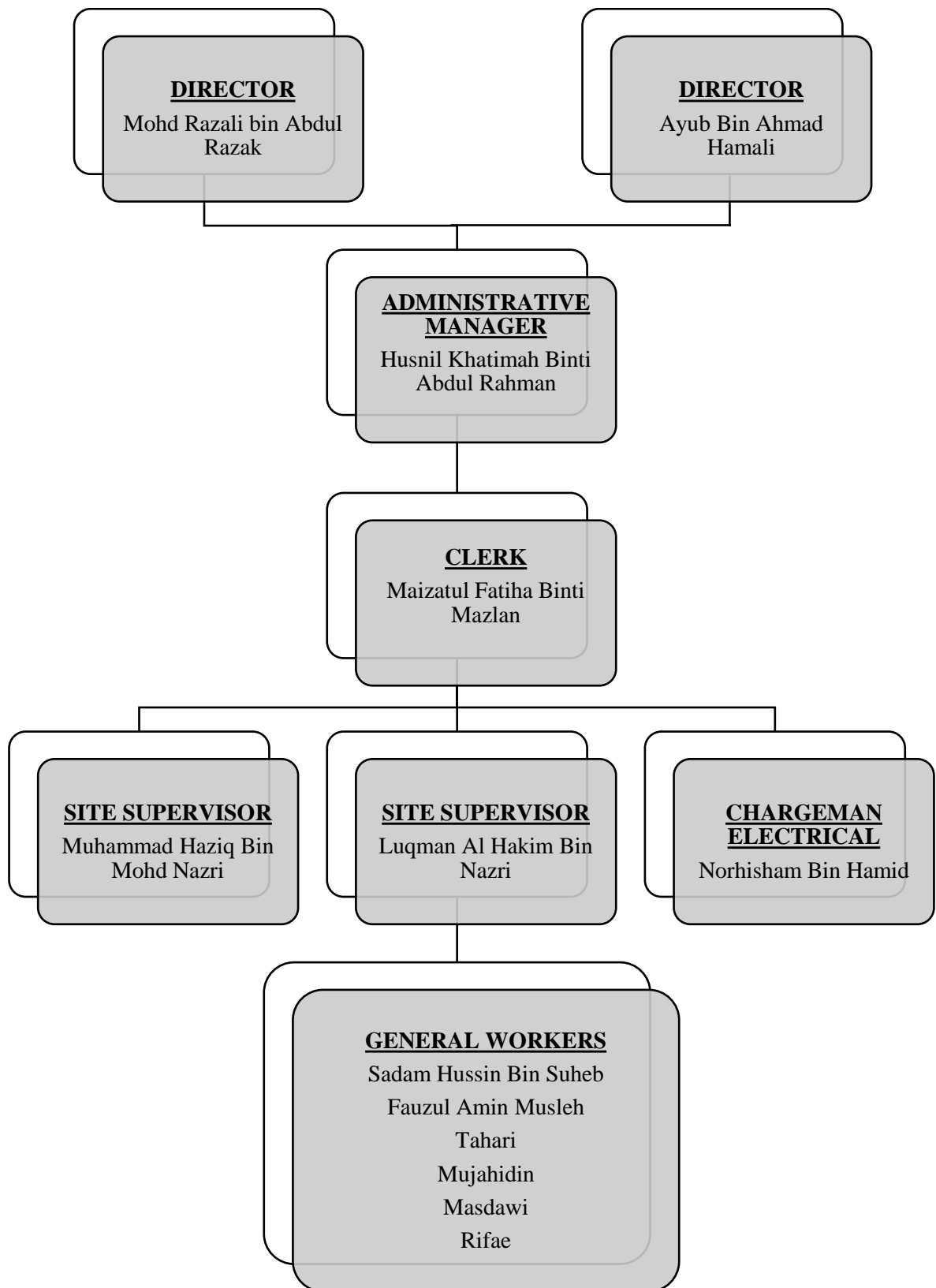
Source: <https://www.google.com.my/maps>

This company's mission is to provide construction engineering services quality and best for all public and private sectors. While the company's vision is to become an F/G1 & G2 Class Contractor Company with high standard and recognizable. The company has 4 employees which are 2 site supervisor, 1 electrical charginan and 1 clerk, and has worked with lots of construction-related companies. A.H.Ayub Enterprise can be contacted via company email at ahayubenterprise@gmail.com or also can directly contact through the company manager's number (019-283 3326).

2.2.1 Company Objectives

- To be a company known for quality perfect work and on time.
- Deal more efficiently and professionally against customers.
- Always be sensitive and ready for every change which happens to improve the quality of service from time to time.
- Consistent in dealing with any issues occurs at the construction site.

2.2.2 Company Chart Organization



2.3 List of Projects

2.3.1 Completed Projects

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1.	Kerja-Kerja Penyelenggaraan Bangunan Serta Kerja-Kerja Berkaitan SMK Puteri Ampang, Kuala Lumpur.	Fifty Thousand Malaysian Ringgit (RM 50,000)	04/10/2021	17/11/2021	6 Weeks	PENDIDIKAN
2.	Cadangan Kerja-Kerja Mengecat Permukaan Dinding Luar Di Blok 1 (Fasa 2), Apartment Taman Sri Murni, Selayang, Kuala Lumpur.	One Hundred Thousand Malaysian Ringgit (RM 100,000.00)	14/7/2021	28/09/2021	12 Weeks	DBKL
3.	Kerja-Kerja Pembaikan Di Bilik Moto Lift Serta Memasang Ventilator Fans Di Kompleks Profesional Baitulmal Taman Maluri Cheras Kuala Lumpur.	Twenty Thousand Malaysian Ringgit (RM 20,000)	06/10/2021	08/10/2021	3 Weeks	MAIWP

4.	<p>Kerja-Kerja Penyelarasan Pemindahan Unit Flying Skuad/Skuad Tandas Bergerak/Skuad Logistik Di Jalan 1/48G & Bawah Jambatan Duke (Jalan Sinar Sentul), Kuala Lumpur.</p>	<p>One Hundred Ninety Thousand Malaysian Ringgit Only (RM 190,000)</p>	29/12/2020	23/2/2021	8 Weeks	DBKL
5.	<p>Cadangan Kerja-Kerja Senggaraan Paip Kumbahan Dan Kerja-Kerja Berkaitan Di Bangunan JKR 852, Jabatan Arah Urusan Gaji Angkatan Tentera (UGAT) Di Kem Kementah, Jalan Padang Tembak, Kuala Lumpur.</p>	<p>One Hundred and Sixty Thousand Malaysian Ringgit (RM 160,000)</p>	7/4/2021	28/07/2021	12 Weeks	JKR

2.3.2 Project in Progress

No.	Project Title	Project Value	Start Date	Project Duration	Client
1.	Kerja-Kerja Senggaraan Di Bangunan BPS TD, Kem Kementah, Jalan Padang Tembak, Kuala Lumpur.	Eighty Thousand Malaysian Ringgit Only (RM 80,000.00)	22/10/2021	12 Weeks	JKR
2.	Kerja Senggaraan Rkat Blok JKR 1572 Bagi Pasukan Perumahan Wardieburn, WP Kuala Lumpur.	One Hundred Thirty Thousand Malaysian Ringgit (RM 130,000.00)	23/09/2021	12 Weeks	JKR
3.	Cadangan Kerja-Kerja Naik Taraf Surau Dan Lain-Lain Kerja Berkaitan Di Sekolah Rendah Agama Al-Ridhwan, Lengkungan Ikan Emas, Perumahan Sri Pulau Pinang, KM 6, Jalan Cheras, 56100 Kuala Lumpur.	Four Hundred Thousand Malaysian Ringgit (RM 400,000.00)	23/07/2021	6 Month	JAWI

CHAPTER 3.0

3.1 Case Study (Roof Renovation Method)

3.1 Introduction of the Case Study

A roof is a structure that serves as the top layer of protection for a building or other structure. Its primary function is to protect against the elements, but it can also help with safety, security, privacy, insulation, and other factors. Roofs can be made from a wide variety of materials and shapes, based on the requirements they should fulfill, the local climate, the availability of materials and skills, the span to be covered, and so on. Roof is very important especially for the protection. Wind, rain, fire, hail, ice, snow, and high heat are among natural threats that a business building must contend with. It's also the weakest point in your structure. Every day, the weather and other elements exposed to your roof add to degradation and deterioration, increasing the danger of harm to the roof and the items underneath it.

For this case study, the focus of roof that need to be renovated is slope and zinc type. The main reason this roof needs to be renovate is because of the aged of the roof is already reach a period to be renovated. Plus, there are many cracks on the part of the roof that causes leaking. On the other hand, gutter which is installed on that roof has also been broken and perforated as well as filled with rubbish. This has an effect on ceiling and wall at the 3rd floor. The plaster ceiling already leaking that caused by leaky roof. While the walls became damp and cracked due to crack marks on the part between the mirrors. Due to that, roof renovation needs to be done to prevent anything worse from happening.

As assigned in Hotel Putra KL, there are using slope and zinc type of roofs. In this site, there are many works that involve such as concreting, putting silicone, and especially inspection. While being tasked in supervisor team, much knowledge about roof was gained. Focusing on method on roof renovating process, the case study will take investigate on how roof is being renovated, inspect and finishing. This case study also will investigate the problem while doing roof renovating such as defect, obstacle, and problem might occurred with their solution to solve the problem.



Figure 3: The picture of Hotel Putra KL

3.2 Project Background

The case study is about roof renovation (roof maintenance). The project where has started on 19th August 2021 and already done on 10th October 2021. The maintenance cost of this project is eighteen thousand one hundred Ringgit Malaysia only (RM 18,100.00). This project has already been completed about 4 weeks. Thus, the study will be explained not only regarding of the method of roof renovation process but including the maintenance of ceiling and wall and the problem and solution of the project. However, the study does not focus on cost and manpower issues. The site location has been carried out at Hotel Putra KL and located at Lot 149 Seksyen, 8, Jalan Tun Razak, 50050 Kuala Lumpur, Wilayah Persekutuan.



Figure 4: The location of site based on the satellite map

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

The activities that have been carry out on the site is roof renovating work. This uneasy work needs to be done by skilled workers because of safety issues. There are also several unskilled workers that help to lifting stuff and also repairing acoustic panels in the 3rd floor seminar room. The tools that involved in this renovation are drills, hammer, roller, and pliers. While the material that used to close the leaking area are waterproofing tape, silicone, and sealer. Plus, the equipment that need to be wear are helmet, safety harness and boots for safety purpose to prevent accident from happening such as falling of the roof.

Next, the reason of the roof renovation is due to the poor condition of the roof which has rusted and leaked because of long exposure to the unpredictable weather such as sun and heavy rain. Plus, the condition of the gutter that has been damaged and clogged with leaves or moss. On top of that, it also causes leakage to occur. Due to a clogged gutter, the flow of rainwater to the drain cannot be done properly and causes water to overflow to the ceiling. The ceiling that is exposed to water will leak and drip water causing the ceiling to rot and mold, or a more dangerous situation is that the ceiling will crack. Besides that, the space between windows also cracked and causes leakage. This affects the paint on the walls become damp and damaged. The process of this renovating process took around 3-4 weeks due to the weather and a few situations, but the workers are able to complete this work well.

Last but not least, the problems of roof renovation process will be determining throughout the renovation process. The solutions of the problems also will be state after determining the problem of the process. This chapter will be focused on the method of roof renovating, and problem while doing roof renovating such as defect, obstacle, and problem that might occurred with their solution to solve the problem.

3.3 Roof Renovation Method

3.3.1 Site Preparation

The first method before doing roof renovation is site preparation. Demolition, clearing, and removal of a few structures are all part of the site preparation process to make way for the new renovations. Site preparation is an important step in the renovation process, and it's generally the first thing you notice on the worksite. Depending on the types of your project, it can be all done within a couple of days. And it can sometimes take much longer, and it can be a labor-intensive procedure in which trades prepare your home for the next step of renovation. Site preparation could be done after doing site visit by the workers. For this case study, this work is started on the roof section first to prevent further leaking so that the ceiling will not leak due to water exposure. Garbage cleaning work will be done on the roof so that the work is easier to do due to the roof area which is full of garbage such as old iron that has rusted, sand and even leaves. The gutter was also cleaned by the workers. This work should be done by wearing a safety harness to prevent accidents such as workers falling while doing their work. After that, there will be inspection by the site supervisor or company manager to see the progress so that the next work can be done. Inspections are necessary so that minor concerns can be identified before it's become major fixes. After the inspection and given permission by the company manager or site supervisor, the workers will begin the maintenance work. The air conditioner outdoor unit and flushing roof will be opened by the workers to make sure the maintenance work easier to do. Plus, the flushing roof was already damaged and rusty and should be changed. The flushing roof and is opened by using a drill. Besides that, ceilings and walls damaged as a result of leaking also need to be fixed.



Figure 5: Flushing roof that already rusted



Figure 6: The gutter that full of garbage and the roof that has damaged



Figure 7: The workers are removing the air conditioner outdoor unit and flushing roof



Figure 8: The flushing roof that had been removed



Figure 9: The wall that have damaged due to leakage



Figure 10: The damaged ceiling due to leakage

3.3.2 Installation Work

After the site preparation is done, the process of roof maintenance is proceeded with installation work. The term "installation" refers to placing or installing equipment or materials in a permanent position, as well as making them ready to use or operate. While in general, installation is the process of placing something in a permanent, semi-permanent, or temporary location. It can also refer to a perfectly functioning system that has been installed. Next, subsequent work was continued by pasting waterproofing tape on the damaged and leaking parts of the roof. The waterproofing tape is applied to each part of the roof that are badly damaged, holed, leaking and even crack. Mostly on large crack parts. After attaching the waterproofing tape, the roofing silicone will be applied on the top surface of the waterproofing tape. Silicone is commonly used in the roofing sector since it is a dependable substance that has been proved to withstand the weather for a long time. Next, for gutters that have been cleaned, the workers will paste waterproofing tape on the inside of the gutter after placing the aluminum sheets as there are parts that have cracked and caused a leakage. Then, roofing silicone will be placed around the waterproofing tape that has been pasted on the roof for the double secured. This process is to prevent further leaks on the roof and to avoid the ceiling from being damaged. For the roof flushing part, its condition has damaged and rusted due to unexpected weather in the country such as heavy rain and sun as well as its longevity. Therefore, the flushing roof section will be replaced with a new one. The workers will install roof flushing using drills and roof screws, silicone is also been placed on the surrounding part of the roof flushing to ensure that no more leaks occur.



Figure 11: Damaged roof that was attached with waterproofing tape and silicone



Figure 12: The workers are attaching waterproofing tape and silicone to the damaged roof



Figure 13: The gutter that has been cleaned and workers attached the waterproofing tape and silicone



Figure 14: The gutter that has been attached with waterproofing tape and silicone



Figure 15: Flushing roof that has been installed



Figure 16: The flushing roof that has been installed and putted silicone to prevent leakage

3.3.3 Finishing Work

Then, the next step of roof renovation is finishing work. Finishing work is the final step of construction because of the total quality of a building or structure that is put into operation is often determined by the quality of its execution. Facing, plastering, flooring (including parquetry), painting, wallpapering, and glazing are the most common types of finishing work. Finishes are applied to the final surface of an element during the construction or manufacturing process. It can provide protection from impact, water, frost, corrosion, abrasion, and other factors, as well as be decorative. Finishes are most frequently associated with interior surfaces, but they can also be used on outside parts. It can be used both wet and dry. Finishing includes the application of multiple layers, some of which will constitute the final exposed surface, but all of which are called finishes. Before applying the final paint to a wall, for example, an undercoat or primer may be applied. So, finishing work for this case study is painting. Some parts of the ceiling that leaked due to dripping water were covered with sealer as well as repainted with white paint as finishing. Sealers are placed to prevent further leakage and prevent cracks on the ceiling. Plus, the paint on the damaged part of the wall was also repainted to look more beautiful. Furthermore, wall finishes are very important to conceal building components such as wires, pipes, insulation, and ductwork with such a decorative skin.



Figure 17: Damaged ceilings and walls



Figure 18: The work of putting sealers on the ceiling and the work of painting the walls



Figure 19: The ceilings that has been sealed and repainted



Figure 20: The walls that has been repainted

3.3.4 Final Inspection

The last process of roof renovation is final inspection of works. In an initial survey or a periodic survey for a vessel, the final or final inspection for the purpose of survey or inspection is normally carried out on safety equipment items and functional trials. One of the most important aspects of quality control is inspection. The quantity and condition of the material or item are determined by an inspection. Inspections is important to identify issues early on when they're still relatively simple and affordable to resolve. When inspection is done correctly, it aids in ensuring proper control over the quality of the materials and products. For our case study, we followed our site supervisor went to the final inspection for Hotel Putra KL. Final inspection was held with MAIWP officers and the manager of Hotel Putra KL. At the final inspection, the officers will analyze the work that done by the contractor. We also listened to the explanations given by MAIWP officials and the manager of Hotel Putra KL. Plus, contractors from other companies were also called to join this final inspection. If there are any defects or even slight damage, the officer will report to the contractor. But at the end of the final inspection, the manager of Hotel Putra was very satisfied with the work that we had prepared.



Figure 21: Final inspection with MAIWP officers and Hotel Putra KL manager



Figure 22: A little discussion with MAIWP officers and the manager of Hotel Putra KL

3.4 Problems Faced During Conducted

In roof renovation, there also problem faced by the workers and site supervisor was faced that may cause delay of the work. To avoid the delay, site supervisor needs to solve the problem with effective solution to make sure the next work can be done smoothly without any issue. Roof leaks, for example, are one of the issues that cause damage to buildings. The most typical causes are poor maintenance and extreme weather conditions. Such leaks can seep into the walls and ceiling, caused massive damage to the structure. As a result, it needs to be addressed right away with professional assistance. These leaks and roof problems can be repaired with the help of Roofing Expert Surrey services. The problem can be found through inspection, update progress and site walk.

The first problem is the weather conditions. Tough weather conditions are expected to make it very difficult for workers to do the work. Furthermore, the weather in Malaysia is unpredictable due to the equatorial climate. Sometimes the weather in our country will deal with heavy rain and sometimes scorching heat. Therefore, the work will face a delayed if there is heavy rain due to factors that will endanger the workers. So, during the rainy period, roof renovation work cannot be done. To fix this problem, the workers will come on Saturdays to do the work so that the work will be completed faster and will be monitored by the site supervisor. In addition, there are also other unavoidable reasons such as movement control orders (PKP).



Figure 23: The workers are doing their job on Saturday

Next, another problem that the workers faced is slow delivery of stuff. Due to the slow delivery of site items, the work could not be done quickly. This is because of the distance between the hardware store and the site is far. In addition, the relatively traffic jammed in the city center makes it more difficult for site supervisors to deliver site items quickly especially at peak times. To fix this, site supervisors who will go to several sites will take items to all sites that request items from hardware store at once. This can save the site supervisor some time and energy from keep repeating from the hardware store and site many times to ensure that the work on the site runs smoothly and there are no delays.

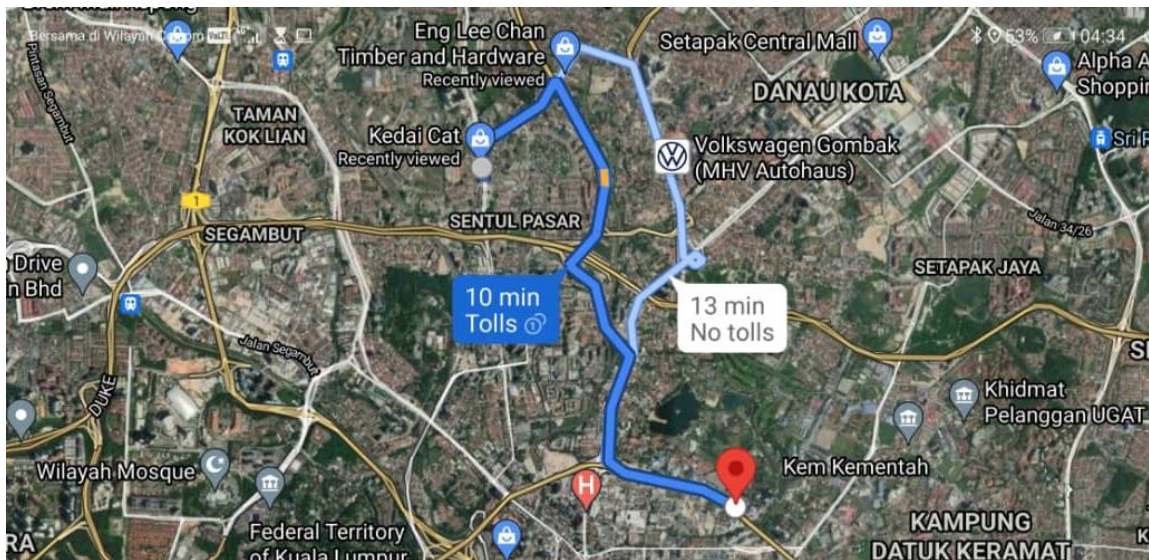


Figure 24: The distance between the hardware store and the site if not jammed based on Google Map

Lastly, problem that can be witness is the incorrect roof flashing installation issues. Roof flashing is important for preventing leaks in the most vulnerable areas of the roof. Flashing is commonly made of aluminum or steel, and it's positioned at the weak spots on the roof where it expands and compresses to keep water out. Roof flashing is one of the most time-consuming and labor-intensive elements of roof installation, which is unpleasant to say, but it is also one of the most rushed and disregarded. Temperature changes cause roof flashings to expand and contract even more, emphasizing the need of properly fitted flashings. Roof flashing can rust or get damaged, or the sealant can dry out and shatter, even in good installations. Regular inspections are necessary, as are quick repairs or replacements, to maintain your roof in good working order and your building safe. To fix this, site supervisor needs to hire a professional roofing contractor who is informed, skilled, licensed, and insured for roof flashing installation work. A professional can appropriately diagnose the issue of the flashing roof and work to resolve it fast. This can help the site supervisor to prepare for this work more quickly.



Figure 25: A roofing professional has completed the flashing roof installation work

CHAPTER 4.0

4.1 Conclusion

To summarize, the roof is very important because the top of a building's roof serves to protect it from rain, snow, sunlight, wind, and temperature extremes. Roofs have been built in a range of shapes and sizes, including flat, pitched, vaulted, domed, and combinations, depending on technical, economic, and aesthetic concerns.

The method of roof renovation that typically used is started with site preparation, installation work, finishing work and inspection. Roof maintenance is inspecting all vulnerable locations on a roof that could develop a problem on a constant schedule. Annual, biannual, or quarterly maintenance will be required depending on the type of roof, whether residential or commercial. Roof problems are frequently caused by one of two factors, firstly because of an old roof or secondly is because of the poor maintenance. Roof maintenance is very important to increase the lifespan of a span. Your roof, also like other parts of your house, is supposed to last a certain amount of time. However, regular maintenance will allow it to live to its full potential. If small problems with your roof are not addressed, your roof will need to be replaced much sooner than planned. Simple things like keeping your gutters clean can go a long way toward ensuring that your roof continues to function properly. Plus, roof maintenance can prevent future problems. Preventative measures are the most important reason for roof maintenance. A little problem that is ignored can quickly escalate into a large problem in a year or two, or even six months. The installation work, finishing work and safety must be ensured and considered to avoid any bad situation in the future. Therefore, all works of roof renovation need to be monitored and inspected before approved and hand over the works.

Furthermore, because renovation was not perfect, there will always be problems and issues to deal with. Roof renovations have their own set of issues, including as defects, wrong installation sequences, and poor workmanship. As a result, as a site supervisor, they are tasked with resolving the issue as soon as possible so that any subsequent work can proceed without delay. In any situation, a problem in renovation can be solved using a variety of methods as long as it does not interfere with or prevent other activities.

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