DEPARTMENT OF BUILDING

UNIVERSITI TEKNOLOGI MARA (UiTM)

PERAK

WALL FINISHES

(CEMENT PLASTERED FINISH)

Prepared by:

MUHAMMAD FIRDAUS BIN MOHD NAWAWI

2019258582

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

SEPTEMBER 2021 - FEBRUARY 2022

It is recommended that the report of this practical training provided

By

Muhammad Firdaus Bin Mohd Nawawi

2019258582

Entitled

Wall Finishes

(Cement plastered Finish)

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

Report Supervisor :_____

(Dr Ida Nianti Binti Mohd Zin)

Practical Training Coordinator :_____

(DR Nor Asma Hafizah Bt. Hadzaman)

Programme Coordinator :_____

(Dr. Dzulkarnaen Bin Ismail)

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECUTRE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

10 JANUARY 2022

STUDENT'S DECLARATION

I hereby 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 Baling Bayu Engineering (M) SDN BHD 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 accept as a patial fulfillment of the requirement for obtaining the Diploma in Building.

…….

Name: Muhammad Firdaus Bin Mohd Nawawi

UiTM ID No: 2019256582

Date: 25 September 2021

ACKNOWLEDGEMENT

Praise be to Allah SWT, the creator of all worlds, for allowing me to successfully finish five months and two weeks of industrial training at Baling Bayu Engineering (M) Sdn Bhd from August 23 to 7 January 2022. Simultaneously, completely complete this industrial training report in accordance with the guidelines in order to meet the primary requirements for the Diploma in Building.

First and foremost, I would like to express my heartfelt gratitude to my parents for their unwavering support and encouragement during my training in this industry. I like to take this occasion to thank the Industrial Relations & Training Unit of UiTM Seri Iskandar, particularly the Building Department, for their assistance with industrial training concerns. A million thanks also to the company's management, Encik Ishak Bin Mokhtar, the supervisor of the Industrial Training student recruiting section, for accepting me and providing me with the chance to complete industrial training here.

Not to mention the other employees that assisted me during my industrial training, particularly Mr. Ishak. All of the responsibilities assigned to me may be impossible to do without the full participation of the whole workforce. Thank you to everyone on staff for taking the time to advise me despite their hectic schedules. I will use all of the information and assistance that has been offered to me to create the greatest possible guidelines and advantages. May Allah bestow blessings on all wisdom. I also want to apologize for any difficulty caused by my industrial training here.

Not to mention my AP1165C buddies, who never failed to assist and collaborate with me, even while we were apart. In addition, I am also very grateful to my colleagues who also underwent Industrial training at Baling Bayu Engineering (M) Sdn Bhd who often helped me do the tasks given by the supervisor. Despite the various challenges we went through, we finally managed to undergo industrial training successfully.

Thank you so much.

ABSTRACT

A surface of the wall is one of the most significant structural parts. The plastering surface has numerous purposes in the performance of a home, and these purposes must be properly comprehended in order to design an appropriate and pleasant structure that also provides privacy and weather protection. This report will go over plastering work for the building's walls. This report was prepared for the development and completion of a surau building and accompanying infrastructure at Kolej Keda, Rimba Taqwa, Sik, 08200 Kedah. The purpose of this study is to examine the building of the plastering wall and how it was carried out. It will concentrate on the entire plastering wall construction procedure. It also investigates the equipment utilized in the ways of plastering wall construction and the time that was spent on the construction. This study will also look at the problem and solution in wall building that will satisfy the plastering wall standards.

CONTENT

1.0 INTRODUCTION

1.1 Background of Study

Wall plastering is the one of important finishes in building construction. Plastering work on brick surfaces is specialized on walls or walls that use earth bricks, sand bricks, concrete blocks, or any other form of brick that may be plastered to cover the surface. This is designed to enhance the aesthetics while also protecting the wall or the erected wall itself. (Rajkumar Subramaniam,2020). Plastering work needs to be done by highly skilled labor to obtain satisfactory work results.

Some plastering works, for example, seek to cover or conceal shoddy brick or concrete construction. (AzamanSaidin,2011). As is usual, the bricks used to construct a wall include a few minor flaws, such as mismatched size and form. There are areas of it that have an uneven arrangement of bricks when it is used to build a wall. As a result, the uneven surface may be covered with plaster, revealing a smoother wall surface. Furthermore, it protects the surface from weather action, making it more robust and resistant. (AzamanSaidin,2011). Weather conditions can also have an impact on the wall surface, particularly on the building's outside walls. When it rains, for example, the temperature drops, and if the walls are not plastered, the heat absorption resistance drops, resulting in cold interior conditions. Heat absorption will be increased if the walls are coated with plaster, making the circumstances in the built-up area more pleasant.

Next, cement plaster, lime plaster, and gypsum plaster are three forms of plaster that are commonly used in building. (Rajkumar Subramaniam,2020) Only a few types of surfaces are suitable for lime and gypsum plasters. It isn't as common as cement plaster. For example, such as lime plaster is only used for wall construction using sand lime brick. This is due to the fact that this type of plaster adheres only to a smooth surface, such as a sand lime brick surface. It is same like gypsum plaster because this type of plastering work is only done on the ceiling surface. Gypsum plaster is not resistant to the action of humid weather, so plaster is only made in enclosed/roofed spaces only. These two varieties of plaster, on the other hand, are extremely different from cement plaster. This is because cement plaster can be applied to wall surfaces that use concrete bricks, fly ash brick, engineering brick and clay burnt brick. Because it is weather resistant, this sort of plaster may be used on any portion of the wall, whether inside or out.

Mortar is the most often used plastering material in cement plaster. Different mortar mix percentages may be employed depending on the target site. It is constructed of a cement and sand mixture, as well as pure water. (KV Dato Seri Mohd Zin,2012) As usual, A mixture ratio of 1: 4 as 1 part cement and 4 parts sand is made on the walls of the building either exterior or interior with a thickness of 20mm. It is very important to know the ratio of the plaster cement mixture to obtain a satisfactory plaster work result. mixing plaster cement in the right way can facilitate the work of plaster and can save time and energy.

Plaster cement is frequently used in building, as is customary. However, the purpose of this paper is to learn more about the plastering methods adopted in building.

1.2 Objectives

This building has resulted in the development of many objectives, which are as follows:

i) Identifying the plastering wall procedure techniques.

ii) Identifying the problem and its solution in the development of wall finishes.

iii) To determine the time required for the plastering wall procedure.

1.3 Scop of Study

The study was done out at Kolej Keda, which is located in Rimba Taqwa, Perangin, 08200 Sik, Kedah Darul Aman. The project began on March 9, 2020, and will be finished in January 2022. The construction will cost two million one hundred sixty thousand and two hundred Malaysian ringgit to develop and complete a surau building and accompanying infrastructure (RM2,160 200). The project is still under progress. As a result, the study's main goal is to figure out how the plastering process is carried out on walls. As a result, the research will include not only the method of wall-plastering, but also the benefits of having a high level of plastering competence in the construction, wall finishes, and machines and tools. This research also discussed the difficulties and their solutions. Despite this, the study does not focus on the quantity of people or labour, expenses, or length issues. Observation, interview, and document reviews are the three approaches that must be used in order to complete the data. Finally, any further explanations pertaining to the preceding procedure were provided as follows.

1.4 Method of Study

1. Observation

Observation is a method of gathering information via watching. The observation is about the plastering wall building process, commencing with the cement mixing process and ending with the wall-plastering finishing. The typical time taken for this observation is roughly 1-3 hours, but just for the corner of the wall, and it varies on the length of the wall. The length of the wall determines how long it takes to complete the plastering process. The plastering procedure took two weeks in total. Meanwhile, the high level of the wall required 1 to 2 days only for one section of the wall because it demands talent and must be done carefully, particularly at the corner bead region. As a result, it took approximately 4 weeks to complete all of the finishing processes for the interior and exterior walls. All information of the wall had been documented using a smartphone.

2. Document review

Company profile, construction sketch, progress report, and other information relevant papers were reviewed to collect all of the data for the construction. The drawing design will be utilized to determine how much space needs to be plastered. In most cases, document evaluations will take 1 hour per drawing plan per week. This document is being reviewed by the Keda College contractor's office.

3. Interview

The interview method is one technique to obtain more precise and detailed information. This interview method was conducted with a number of cement plaster labours. The issue at hand concerns the process of mixing plaster cement, the steps involved in plastering, and the amount of time required.

2.0 COMPANY BACKGROUND

2.1 Introduction of Company

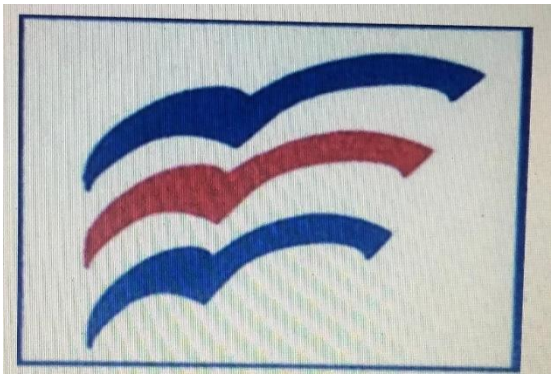
Baling Bayu Engineering (M) SDN BHD. is a company founded in 2002 with experience in the construction of buildings, drainage, homes, and even highways. The business began with an RM750,000.00 paid-up capital and a RM1,000,000.00 authorized capital. This private firm is entirely owned by Bumiputeras and has a Certificate of Registration from the Malaysian Construction Industry Development Board (CIDB) as well as a Contractor Service Center certified as a class B contractor and grade G6.

Mr. Abdul Rahim Bin Husin and Mr. Ishak Bin Mokhtar are the shareholders of Baling Bayu Engineering (M) SDN BHD. Following that, the company's manager is Mr. Abdul Rahim, who is supported by Mr. Ishak, who retains 100% of the shares. The business has considerable experience and competence in this industry, having executed a variety of projects for both the public and private sectors.

Baling Bayu Engineering (M) SDN BHD. is backed up by a team of highly experienced and competent employees ranging from management to technical to project execution. Currently, the company offers architectural services such as planning, design, accounting, contract administration, and other associated services, as well as supplying building materials for landscaping operations.

Since its start, the company has demonstrated a lot of remarkable job performance. This effectiveness is a consequence of feedback from consumers who have utilized the firm's services. The efficiency and inspection of the job, which is the primary aspect in the firm obtaining the faith and trust of consumers on the quality of work done.

2.2 Company Profile



Company's name	BALING BAYU ENGINEERING (M) SDN BHD.
Address	K-3, Bangunan MDB, Pekan Baru Baling, 09110 Baling, Kedah.
No. Tel/Fax	04-4704136/ 04-4701130
Email	balingbayu1@yahoo.my
Objective	Bringing existing experience and skills to use by providing ongoing training and consistent work effectiveness
Vision	To be a flourishing and respectable organization, company must be a trusted contractor organization.
Mission	To be a successful and trusted construction, supply, and service company, and to concentrate performance and quality of work in order to distinguish ourselves from our rivals depending on the sort of business that undertake.

2.2.1 Location of Company

Baling Bayu Engineering (M) SDN BHD is located in Pekan Baru Baling. This location is advantageous because it is in the town area which will make it easier for any party to find the company's office. Around the company also has ample parking for customers for certain hours. Dealing hours are between 9.00 am to 5.00 pm every Sunday to Thursday.

Diagram 2.2.1, Location of Company

2.3 Organization Chart

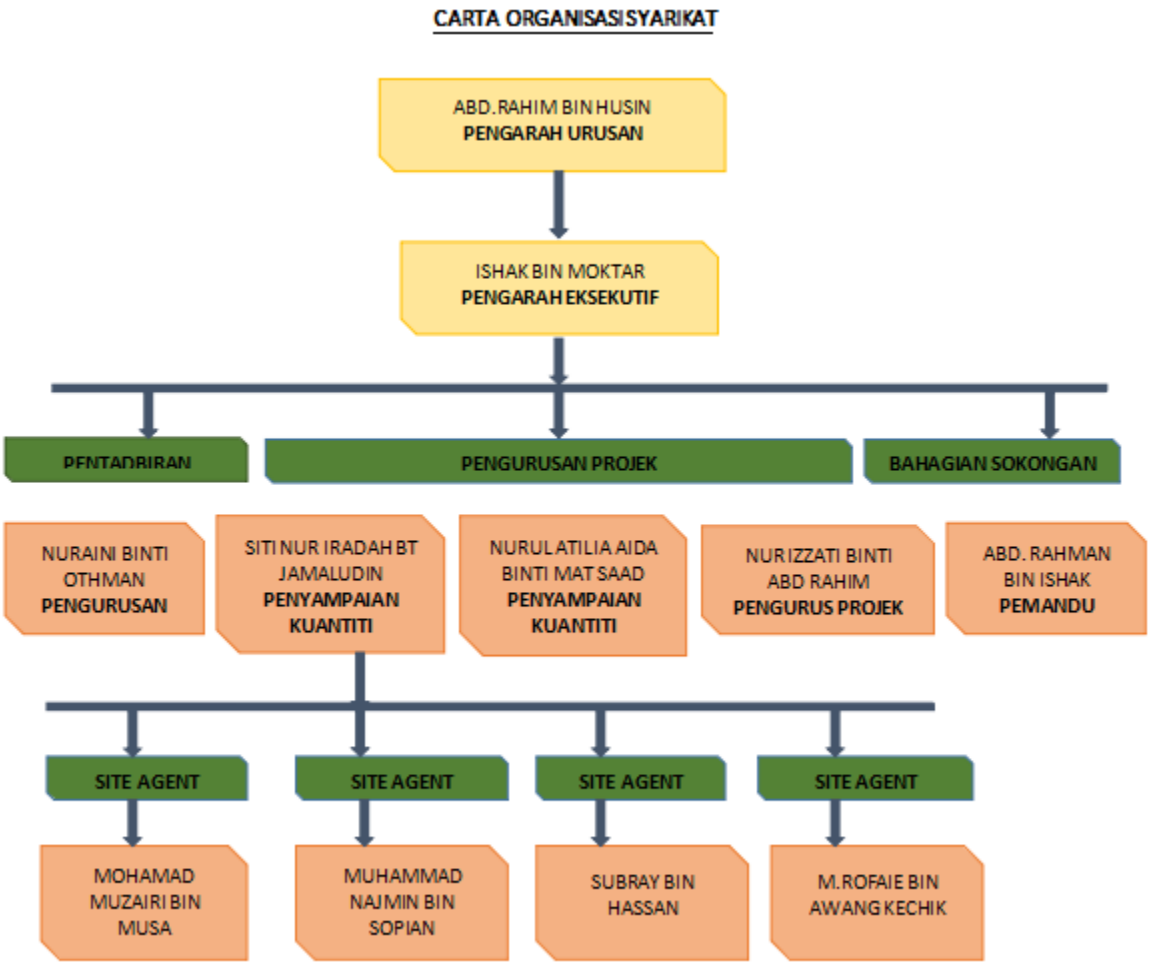


Diagram 2.3, Organization Chart

2.4 List of Projects

2.4.1 Completed Project

No	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Complete a New Qariah mosque in Kampung Ulu Legong, Baling, Kedah Darul Aman.	RM 120,450	25 February 2020	30 September 2020	7 Months	Jabatan Kerja Raya (JKR) Daerah Baling
2	Building repair work and other related work at Pokok Sena Science Secondary School, Kedah Darul Aman.	RM1,315,042	22 November 2020	10 April 2021	20 Weeks	Jabatan Kerja Raya (JKR)Negeri Kedah

2.4.2 Project in Progress

No	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Proposal to build and completed a surau building and related infrastructure at Keda Collage Kedah.	RM2,160 200	9 March 2020	January 2022 estimated to finish	11 months	Jabatan Kerja Raya (JKR) Daerah Sik

3.0 CASE STUDY

3.1 Introduction to Case Study

The case study is on wall plastering in the building industry. The project, which began building on 9 March 2020, is expected to be finished in January 2022. The building cost roughly RM2,160 200 (two million one hundred sixty thousand and two hundred Ringgit Malaysia). The project is still in the works at the moment. As a result, the research will describe not only the installation but also the machinery and tools used, the time spent on the project, and the issue and solution of the construction. The site was located in Rimba Taqwa, Perangin, 08200 Sik, Kedah. Aman, Darul Aman.

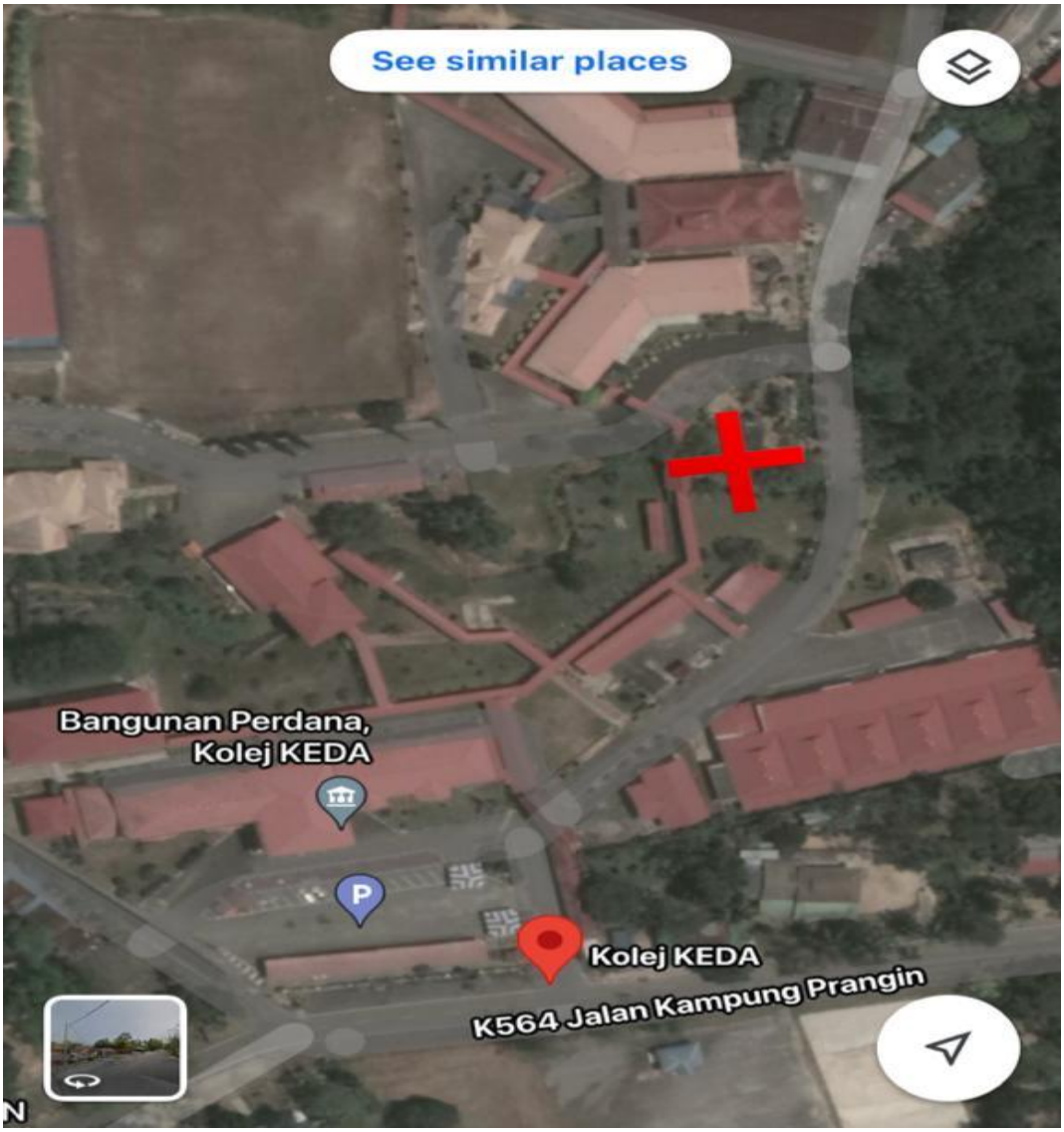


Figure 3.1: Location of site based on the satellite map Source: https://www.google.com.my/maps

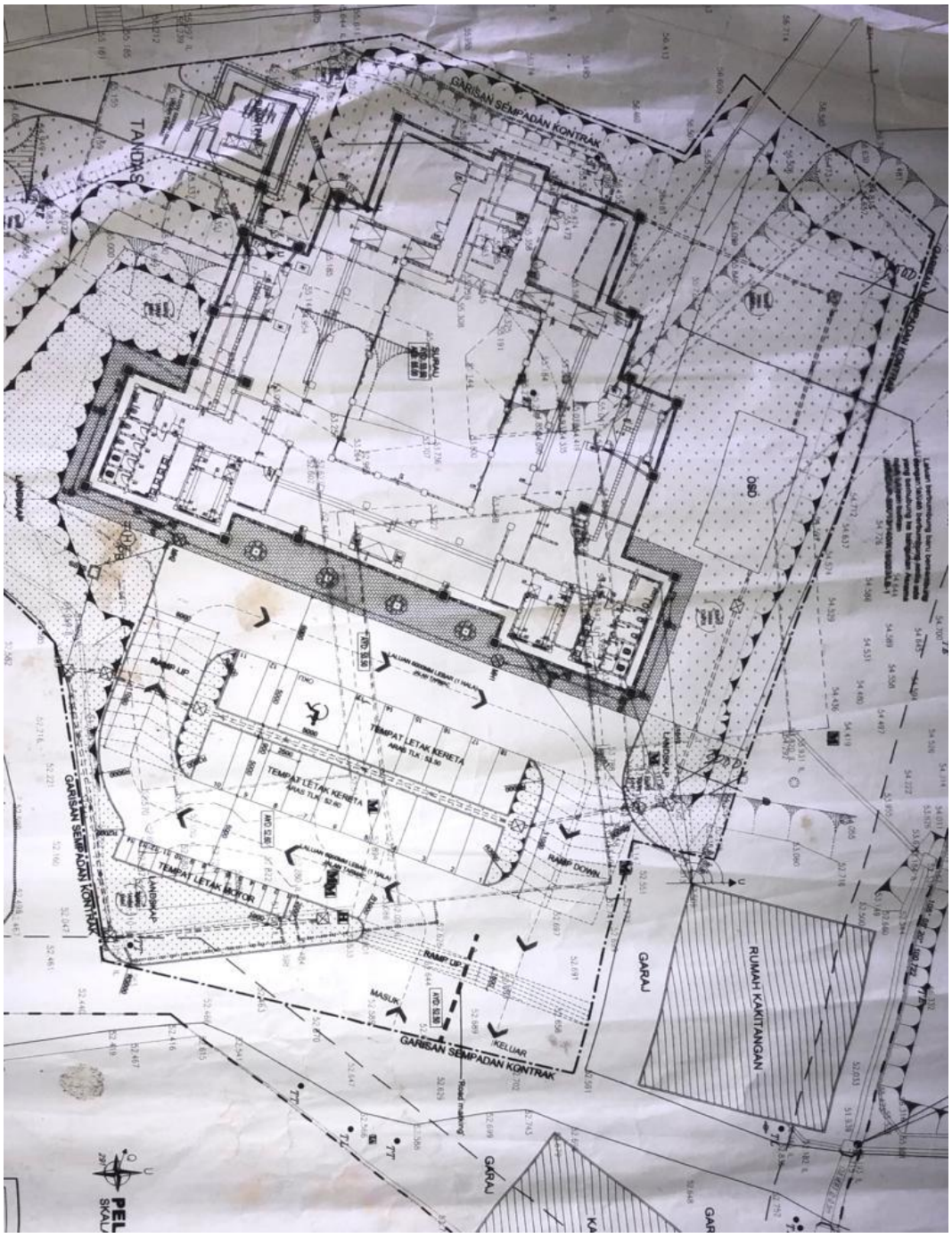


Figure 3.2: The site location

The project construction located at Rimba Taqwa, Perangin, 08200 Sik, Kedah. Aman, Darul Aman. The location is facing Rimba Taqwa PLKN Camp. Because it is still surrounded by trees, the region is relatively remote. The construction area is near with the houses of college officers. Because it is in a college neighbourhood with numerous students, this building site has pretty strict regulations. Workers, including delivery, must pass thorough security checks before entering this area. The main road to go to the construction area is K564 Jalan Kampung Perangin. This road is a shortcut that can save time to the workers who work here as well as the delivery of construction materials can be delivered without any obstacles when going through this road.

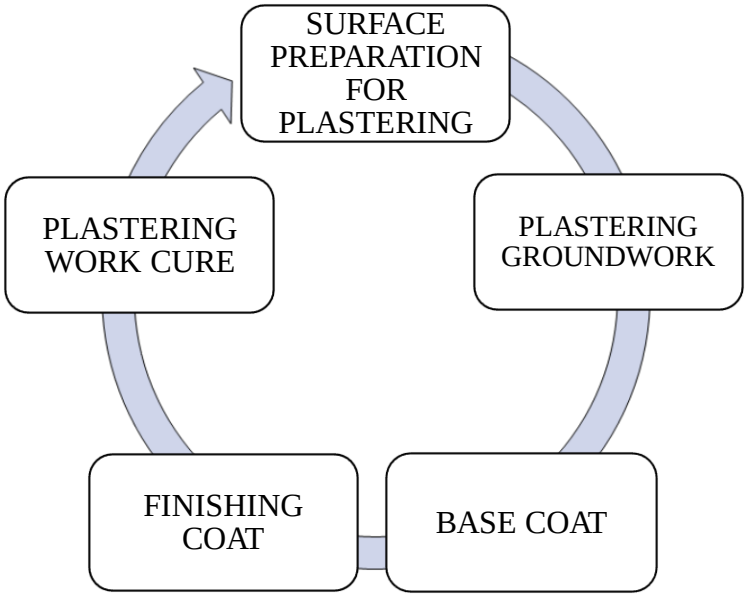
Plastering is one of the operations that have taken place on the site. This tough work must be completed by trained workers in order to provide a smooth wall surface. There are also numerous unskilled individuals who assist in mixing the cement plaster and transporting it with a bucket to the plastering area to shorten the plastering operation. Wheelbarrows, trowels, hawks, buckets, snips, and finishing trowels are among the machines and instruments used in this construction.

Next, completing work on schedule is critical to the success of a construction project. According to the building's drawing plan, the length is 44 700 mm and the width is mm. This structure has various rooms, including a men's and women's prayer room, an outdoor prayer room, a toilet, a meeting room, a priest's chamber, mehrab, a lobby, and several porch rooms. The amount of plastering required is determined on the present weather conditions. When it rains, plastering is only done on the inside of the structure. On high and tiny angled surface pieces, this plater procedure will take a lengthy time.

Finally, the plastering procedure's problem will be identified during the construction phase. After identifying the problem of the process, the solutions will be stated. This chapter will concentrate on the plastering method, the time spent on the plastering process, and the problem and solution.

3.2 To Identify the Methods of Wall-Plastering Process

The plastering work must be done according to the prescribed methods to ensure that the plastering work runs smoothly and saves time. Almost all constructions implement these methods for plastering work.



The first method for plastering work is surface preparation. All surface of the brick wall will be cleaned of dust, and excess hardened cement so that plastering can be done easily and the plaster surface will be tidy. Then, using a plumb-bob as a screed as a gauge to keep the plaster thickness consistent for plastering groundwork. The first layer of the base coat should be set but not dry before roughing it with a scratching tool to form a lock to the second layer of plaster. Then, as the final layer of plastering work, apply a finishing layer on the same surface and give it a final touch with a wooden buoy and a steel trowel. Last but not least, once the plastering work is completed, it must be kept moist for at least 7 days in order for the plastering work to cure and gain strength and hardness.

SURFACE PREPARATION FOR PLASTERING

Figure 3.2.1 Checking for corner bed

To begin, make sure all wall mortar joints are rough and hardened to establish a solid bond that will keep the plaster in place and prevent plaster surface issues. Then create a rough outline of the entire wall that will be plastered. Using a wire brush, clean any connections and wall surfaces, ensuring sure there is no oil, grease, or other residue on the wall surface, since this may cause the plaster cement to bond badly. Fill any cavities or gaps in the surface with a suitable material first. To give a better bind to the plaster, check for mortar connections that are at least 12 mm deep if the surface is slippery or the wall to be plastered is elderly.

Then, to ensure proper adhesion, wash the mortar joint and the entire wall to be plastered and let it wet for at least 6 hours before applying the cement plaster. Finally, make sure the corner beds are securely fixed to all four corners of the wall so that the corner areas may be plastered swiftly and neatly.

PLASTERING GROUNDWORK

Figure 3.2.2 Checking for the thickness of plastering by looking to plumb-bob

Second, mark a spot on the wall to ensure that the plaster thickness is similar over the whole surface. The dots are glued to the wall at a distance of about 2 meters, first horizontally, then vertically, covering the whole wall surface. After that, use a plumb-bob to measure the stability of the points, one on top of the other, because loosening will result in an uneven plaster surface. As it continues to put the points, a vertical strip of plaster known as a screed will be built between them. This screed is used as a gauge to ensure that the plaster thickness is uniform. As a consequence, the plaster thickness homogeneity will be maintained, and the plastering process will be accelerated.

BASE COAT

Figure 3.2.3 A trowel is using to put the first layer of plaster

The thickness of the first layer is usually estimated to be around 12 mm. Following that, in the first layer plaster, the cement-to-sand ratio varies between 1: 3 and 1: 6. Then, in the spaces created by the screed, apply the first layer of plaster to the wall surface. This is done with a trowel. The flat wooden buoy and straight wood edges will next be used to level the surface. Allow the first coat to set but not dry completely before roughing it up with a scratching tool to form a lock with the second layer.

FINISHING COAT

Figure 3.2.4 Put finishing coat to the top of surface

In order to ensure proper surface alignment, the thickness of the second layer or finishing coat may vary between 2 and 3 mm, depending on the thickness of the first layer. Wet the first layer evenly before applying the second layer to ensure that the following layer may be adjusted equally. Apply a finishing layer to the same surface with a wooden buoy and a steel trowel, and give it a last touch. To erase graft marks and make the coating appear smooth, a finishing coat should be applied from the top down and finished in one operation if necessary.

PLASTERING WORK CURE

Figure 3.2.5 The surface always kept wet

Finally, once the plastering is finished, it must be kept damp for at least 7 days in order to gain strength and hardness. Furthermore, burlap sacks or other materials are required for outdoor labour to ensure that the plastering work is completed in damp conditions. In this circumstance, improper curing could lead to the formation of cracks or expansion in the plaster work, as well as surface faults like cracks.

3.3 To Determine the Time of Wall-Plastering Process

Time is an element in construction that must be considered and analyzed in all aspects of the process. Every aspect of a construction project should be thoroughly planned in order to ensure that the project operates properly. It is typical in construction, however, when a portion of a project cannot be finished on time. This is most likely due to a combination of issues such as weather, a lack of labour, and so on.

Plastering work in this project was intended to take around 5 weeks, however it took closer to 5 - 7 weeks in total. Throughout the construction, there are several natural borders like as rainy days and the Covid-19 epidemic that restrict the construction movement. These difficulties were the cause of the work's delay.

The plastering work on Kolej Keda's surau building, which is located in Rimba Taqwa, Perangin, 08200 Sik, Kedah Darul Aman, began on September 27 and will be completed on November 5. The time of the plastering work process was documented by observation and photographs taken with a smartphone.

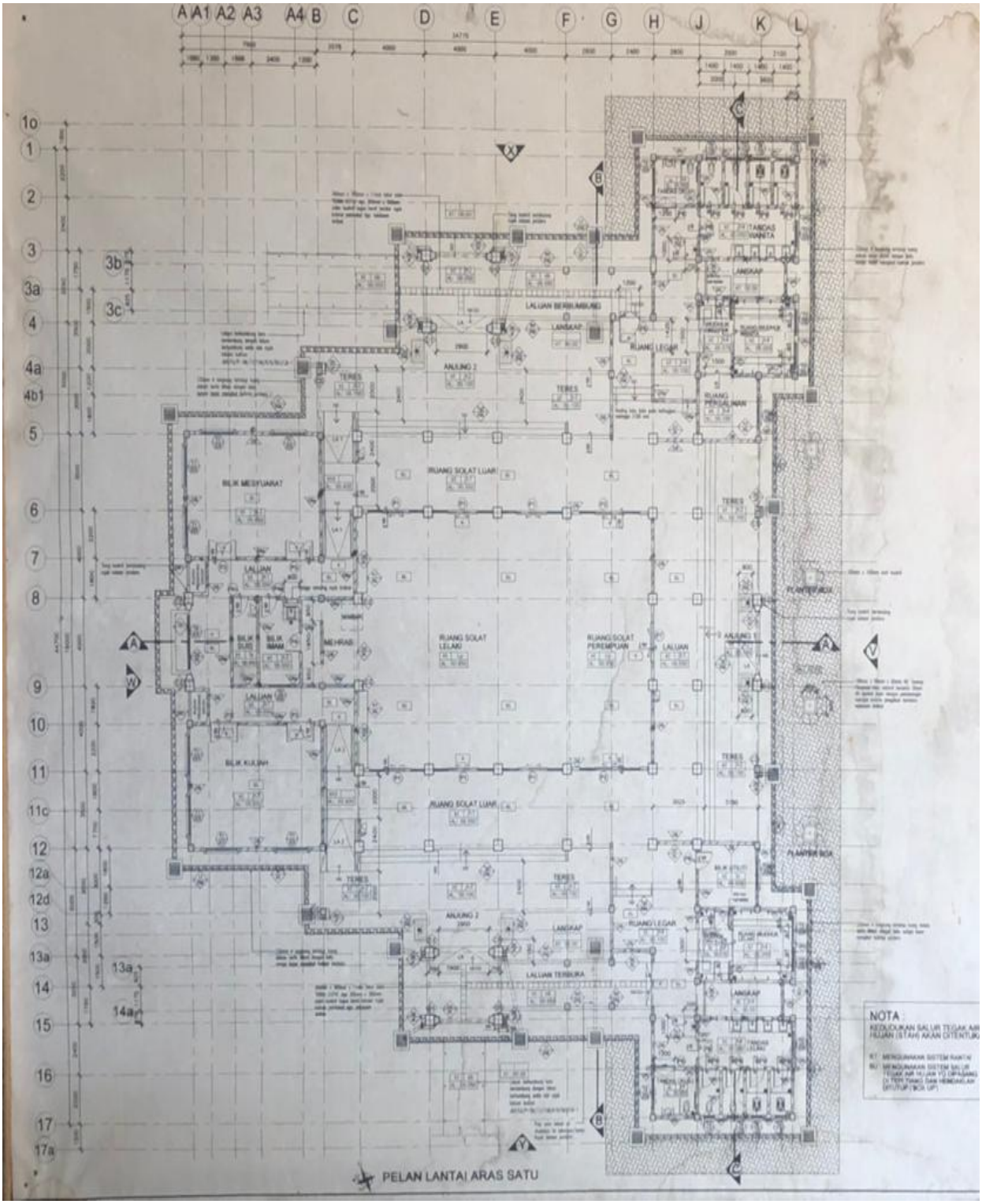


Figure 3.3.1 Floor Plan

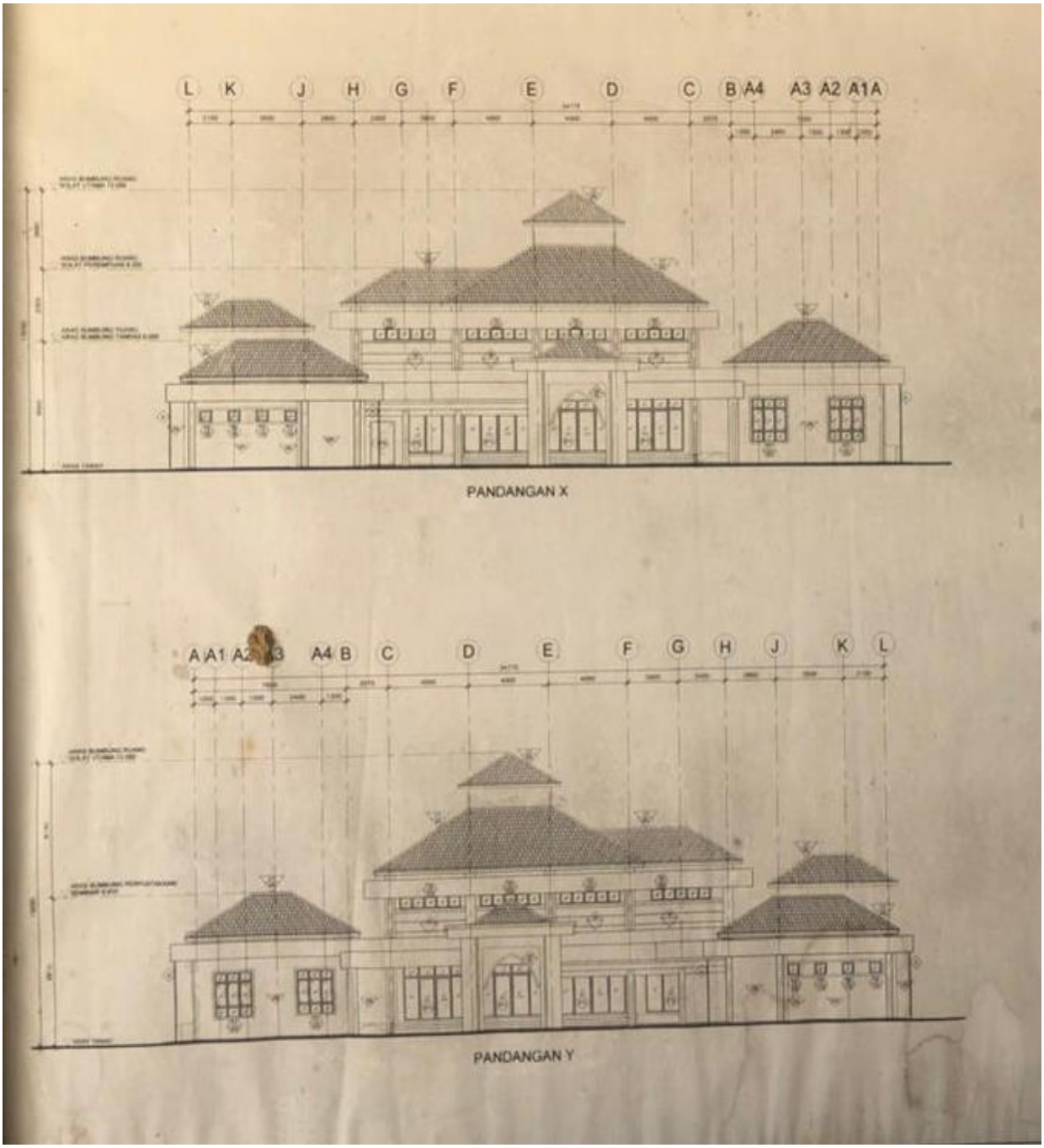


Figure 3.3.2 left and right elevation

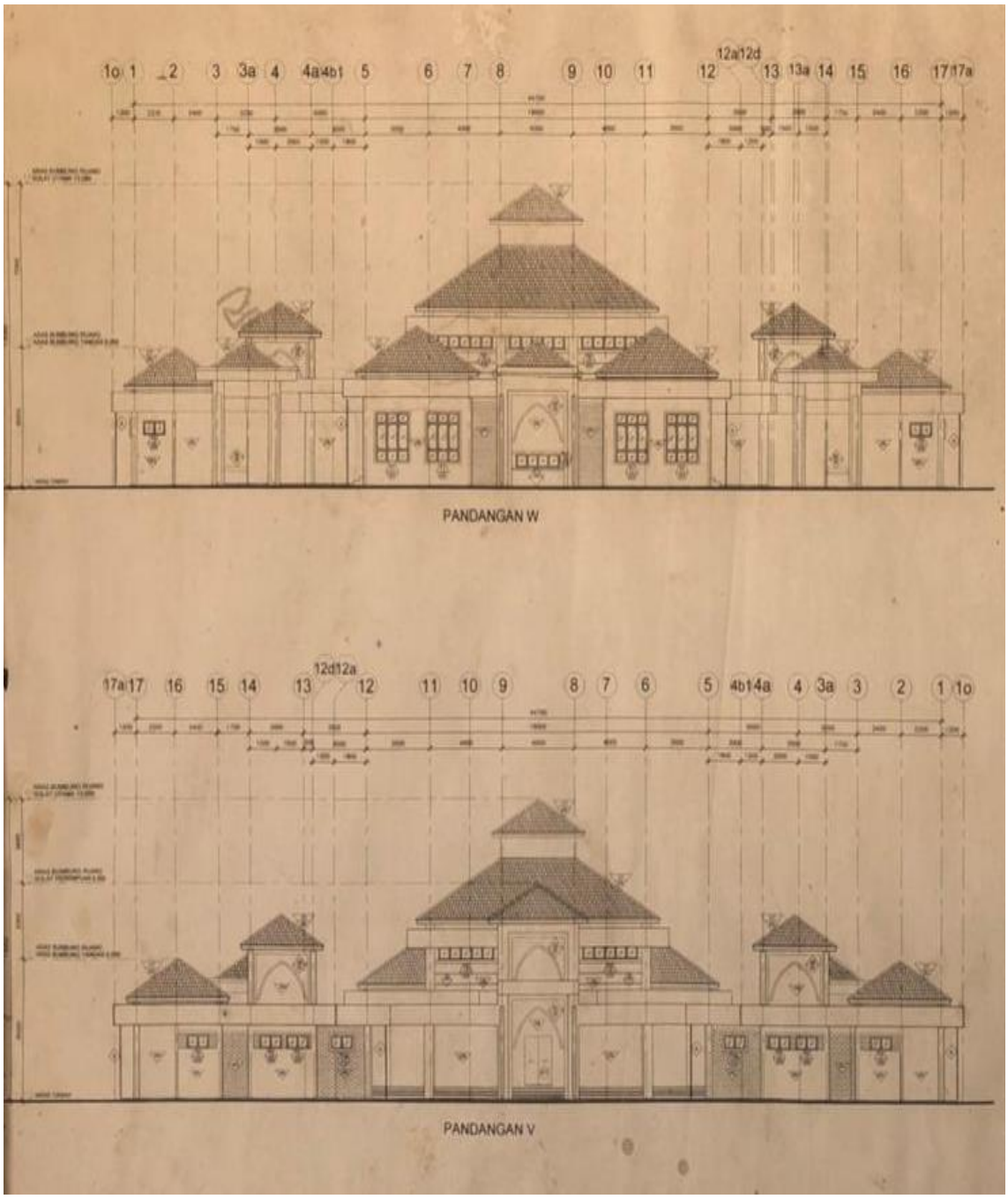


Figure 3.3.3 rear and front elevation

3.4 To Identify the Problem and Solution in Wall-Plastering

Problem: Dirty, dusty, or mouldy brick wall

After bricklaying process finished, the surface is in contact with dust and soil dust. A coating of dust will prevent the plaster cement from bonding properly. Furthermore, there is an excess of cement attaching to the wall surface, causing the wall surface to be flat.

Solution: Clean the surface with wire brush

A wire brush is used to remove dust from the surface of the brick wall as well as the residues of excess cement bonded. This will keep the brick wall surface clean and will make plastering easier.

Problem: Bad weather

During the plastering process, the weather changes on a daily basis. When it rains, plastering cannot be done in the building's exterior area. This is due to the difficulties of the personnel performing the plaster job, as well as the surface of the plaster cement not drying completely.

Solution: Cover the surface with canvas

Canvas could be used to cover the wall surface once it is ready to be plastered. When it rains, it can cover the recently plastered surface from the rain and allow it to cure properly.

4.0 CONCLUSION

Plastering the walls is crucial for the building because it creates a suitable and pleasant environment while also giving a smooth surface and weather protection. The plastering wall process began with surface preparation, plastering ground work, base coat, finishing coat, and finished with plastering work cure.

Without wall painting, the procedure took around 5-7 weeks, beginning on September 27 and ending on November 5, 2021. The plastering wall construction was delayed a few days due to the weather and also the movement control order during the pandemic Covid-19. As a result, it takes longer than expected.

The plastering method in building is a standard method that is comparable to the principle. Nothing was done differently throughout the plastering wall construction. Furthermore, difficulties that develop, such as the dirt wall surface, are simply resolved.

REFERENCES

http://kejawam.blogspot.com/2012/02/kerja-kerja-lepaan-plastering-works.html

http://azamansaidin.blogspot.com/2011/06/kerja-kerja-lepaan.html

http://teknologi-pembinaan.blogspot.com/2012/10/melepa.html

http://civilhq.blogspot.com/2013/09/method-of-plastering.html

https://qaqcconstruction.com/2018/05/21/method-statement-cement-plastering-architectural-finishings-template/

https://civilengineeringtalks.com/plastering-work/

https://wecivilengineers.wordpress.com/2018/09/16/types-of-plastering-finishing-for-construction-of-home/

https://www.yourarticlelibrary.com/building-engineering/5-main-types-of-plaster-for-walls-buildings/85664

https://www.homehow.co.uk/blog/types-of-plasterhttps://mastercivilengineer.com/different-types-of-plaster-in-building-construction/