



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

**PRACTICAL REPORT TITLE:
WALL CONSTRUCTION PROCESS AT
SIMFONI WEST TAMAN TUNKU INTAN SAFINAZ**

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(PERAK)

10 JANUARY 2022

It is recommended that the report of this practical training provided

By

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Entitled

WALL CONSTRUCTION PROCESS AT
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be accepted in partial fulfilment 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 BDB LAND SDN BHD for duration of 20 weeks starting from 23rd August 2021 and ended on 7th January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfilment of the requirements for obtaining the Diploma in Building.

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ABSTRACT

Wall is a structural element which divides the space (room) into two spaces (rooms) and provides safety and shelter. Generally, the walls are differentiated as two types of outer-walls and inner-walls. Outer-walls gives an enclosure to the house for shelter and inner-walls helps to partition the enclosure into the required number of rooms. Inner walls are also called as Partition walls or Interior Walls and Outer walls are also called as Exterior walls.

Walls are constructed in different forms and of various materials to serve several functions. Exterior walls protect the building interior from external environmental effects such as heat and cold, sunlight, ultraviolet radiation, rain and snow, and sound, while containing desirable interior environmental conditions. Walls are also designed to provide resistance to passage of fire for some defined period, such as a onehour wall. Walls often contain doors and windows, which provide for controlled passage of environmental factors and people through the wall line.

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CHAPTER 1.0

INTRODUCTION

1.1 Background Of Study

Based on a dictionary, wall is a continuous vertical brick or stone structure that encloses or divides an area of land. But the definition of wall based on architecture knowledge is a structure and a surface that defines an area, carries a load, provides security, shelter, soundproofing or, decorative. It is also structural element used to divide or enclose, and, in building construction, to form the periphery of a room or a building. In traditional masonry construction, walls supported the weight of floors and roofs, but modern steel and reinforced concrete frames, as well as heavy timber and other skeletal structures, require exterior walls only for shelter and sometimes dispense with them on the ground floor to permit easier access.

Throughout all semester, I have been taught about types of walls that I should know. Theoretically, there are many types of walls can be listed and describe but the common type of wall used in construction are Load bearing wall, non-load bearing wall, Cavity wall, Shear wall, Partition wall, Faced Wall, Veneered wall, Panel wall.

Every wall has its own differences between each type such as load bearing wall, It carries loads imposed on it from beams and slabs above including its own weight and transfer it to the foundation. These walls support structural members such as beams, slabs, and walls on above floors above. While Non-load bearing walls only carry their own weight and does not support any structural members such as beams and slabs. These walls are just used as partition walls or to separate rooms from outside. Cavity wall is a wall constructed in 2 leaves or skins with a space or cavity between them. A type of building wall construction consisting of an outer wall fastened to inner wall separated by an air space. Shear walls are a framed wall designed to resist lateral forces. It is a vertical element of the horizontal force resisting system. It is used to resist wind and earthquake loading on a building.

Partition wall is an interior non-load bearing wall to divide the larger space into smaller spaces. The heights of a partition wall depend on the use which may be one

storey or part of one storey. While Panel wall is generally made of wood and is an exterior non-load bearing wall in framed construction. It is used for aesthetics of the buildings both inside and outside. It remains totally supported at each storey but subjected to lateral loads. Masonry veneer walls is a single non-structural external masonry wall made of brick, stone, or manufactured stone. It has an air space behind and is called as anchored veneer. And finally, faced walls has the facing and backing of two different materials are bonded together to ensure common action under load.

Every wall has its own different purpose in building, not all type walls can be used one construction. it depends on the terrain and weather. Walls also need to meet its functional requirements in construction. There are basically 7 requirements, such as Strength, Stability, Weather and Ground Moisture Resistance, Durability Fire safety, Resistance to heat passage, Sound resistance. To be conclude, wall is an important structure of the house just for the safety of the owner. However, in this report will focus on walls which is based on the case study and the title of the report.

1.2 Objectives

- I. To study the methods using for brick laying for the wall.
- II. To investigate the period of the wall constructed.
- III. To determine the problems and solutions during brick laying.

1.2 Scope of Study

The case study is carried out at Simfoni West Taman Tunku Intan Safinaz, Jitra, Kedah. This study is focusing on the brick laying in constructing walls of a 2-storey terrace house and the method using on the construction. the study shows that the process on built the wall took time because of some aspect that cannot be avoid. For instant, the wall should be finished by October 2021, but due to covid lockdown the due date has been delay. But even though they must rush things forward, but the supervisor and the other consultant of the project managed to make the process right on schedule. For example, the bricks came early on site, so they can start construct it on the evening. The study also shows the method that been using for brick laying for interior and exterior walls. For example, the skilled worker is in charge for the brick laying. Only 2 or 3 person that will be doing the laying and 1 person will be responsible on making the cement stays wet like shown in figure 1.0 below.



FIGURE 1.0 the process of brick laying for interior wall

They didn't used some fancy tools for the method, the tools they use are ropes, nails, hammer, trowel, shovel and bucket for cement, for safety they only wore helmets and gloves.

They use only 2 machineries, a pulley for transporting the bricks and a cement mixer like shown on figure 1.1 and 1.2 below.



FIGURE 1.1 the pulley transferring the bricks on site



FIGURE 1.2 the labour is mixing the cement for the brick laying

But some of construction work has been done by the labours, such as making a small slab for the windows, tying the rope for the brick laying and of course building the foundation of the house.

1.3 Method of Study

There are ways for collecting data needed for the report which are:

1) Observation

- The observation has been made from the beginning of the construction where they delivered the bricks from the suppliers and placed them on site. Then the observation took a few weeks for it to be done. Well of course the data collecting is done by taking some photograph of the process from beginning to the final process. Like example shown on figure 1.3.



FIGURE 1.3 the exterior wall of the house at 50%

2) Interviews

- The interview is done when every time on site. I would ask my supervisor En. Farhan about the detail I should know about the walls at the houses that are built. For instant, I ask him about the square foot of the house, he said “the outer wall is measured by 39 x 22 square foot on the first lot, and for the second lot is measured by 39 x 20 square foot”. Not only that, but I’ve also asked him about what types of brick they are using, what type of laying they used and many more. All the answer I’ve written in small notes by taking some important point given just to insert in the report.

3) Document reviews

- About the document reviews, there are architectural drawing that been given, such as site plan, floor plan of the house and the house example picture. The drawings are all at the office, by the time im at the office after lunch break, the is a room in the office where they stored all the document and drawings for the project. I’m not allowed to take the rooms picture because of the private storage room. But I do manage to have the floor plan and the site plan shown at figure 1.4 and 1.5 below.

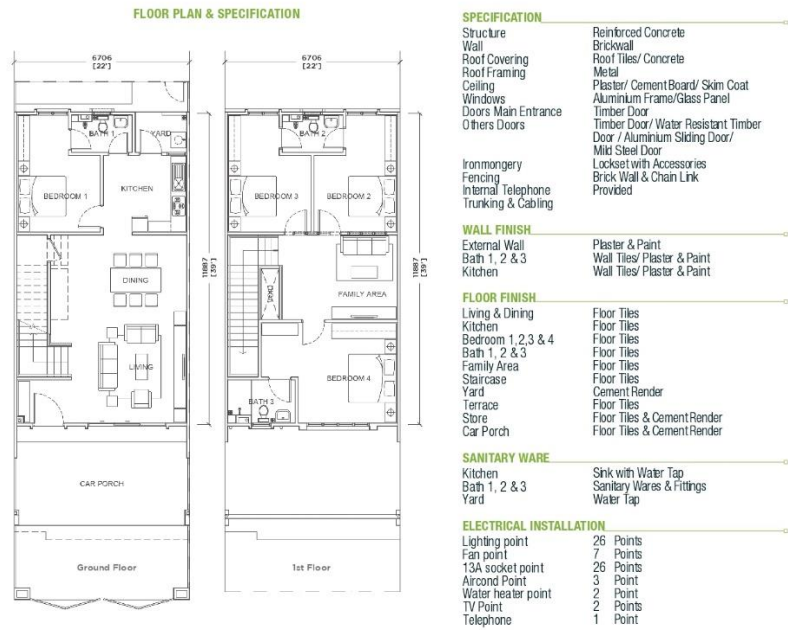


FIGURE 1.4 Floor plan



FIGURE 1.5 Site plan

CHAPTER 2.0

COMPANY BACKGROUND

2.1 INTRODUCTION OF COMPANY.

BDB Land was incorporated in 1981 to undertake the development of a new township in the District of Kubang Pasu in Kedah. The company purchased about 2,200 acres of estate land planted with rubber trees from Kundong Tanjung Pauh Company Bhd. The company is responsible for the comprehensive development of Bandar Darulaman, a new "Satellite Township" in the district of Kubang Pasu, Darulaman Utama (Kuala Ketil) and Darulaman Perdana (Sungai Petani) Kedah Darul Aman.

BDB Land commenced operations during the fourth quarter of 1983. With the inaugural project being the upgrading of the temporary campus of University Utara Malaysia (UUM), Malaysia's latest and sixth university at the time. BDB Land was both the developer and contractor for UUM with the first phase of construction completed by June 1984.

In 1995, BDB Land Sdn Bhd has purchased 555.3 acres and 1,100 acres land in Sungai Petani (Darulaman Perdana) and Kuala Ketil (Darulaman Utama)

2.2 COMPANY PROFILE

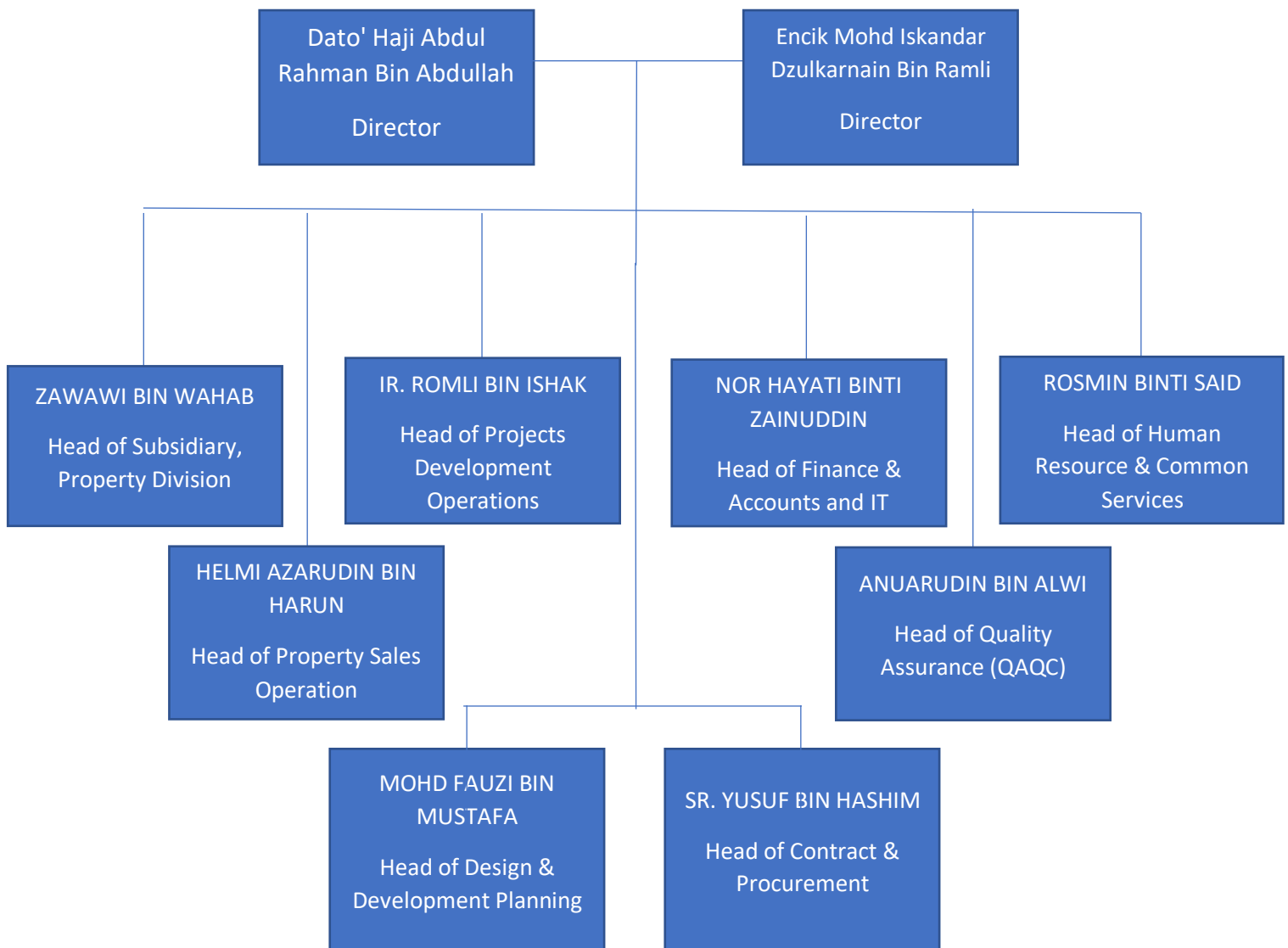
BDB LAND SDN. BHD. (BDB Land) has established itself as a reputable leader in township development in Malaysia's northern region. It was founded on April 7, 1981 and has over 30 years of experience and an impressive track record to its credit. The name BDB Land is associated with prestigious sustainable townships such as:

- Bandar Darulaman (Jitra), a self-sufficient and mature township in Alor Setar's state capital.
- Darulaman Perdana (Sungai Petani), a residential mixed development that will provide Sungai Petani residents with a high standard of living.
- Darulaman Utama (Kuala Ketil), a large-scale township development in Kuala Ketil that is expected to transform the Baling district; and the two new townships, Darulaman Saujana

(Jitra) and Darulaman Putra (Sungai Petani), are poised to continue bringing Kedah's people sustainable development and quality of life.

BDB Land also intends to make homeownership accessible to as many people as possible over the next five years by continuing to focus on building affordable homes. In the future, BDB Land will strive to introduce new products and a new way of life within its townships, as well as play an important role in Kedah's socio-economic agenda.

2.3 COMPANY ORGANISATION CHART



2.4 LIST OF PROJECTS

2.4.1 COMPLETED PROJECTS

NO.	Project Title	Project Value	Completion Date	Project Duration	Client
1.	158 Unit Kediaman Fasa 5a.	Rm45.2M	10 Jun 2020	2 Years And 6 Months	G.C Timur Sdn.Bhd
2.	15 Unit Kedai/ Pejabat 2 Tingkat.	Rm 5,330,654.20	15/10/2019	15 Months	Bdb Land Sdn.Bhd

TABLE 2.0

2.4.2 PROJECT IN PROGRESS.

NO	PROJECT TITLE	PROJECT VALUE	COMPLETION DATE	PROJECT DURATION	CLIENT
1.	Perumahan Taman Tunku Intan Safinaz Fasa 5B (Akustika)	RM 18.4M	6 March 2022	18 Month	Bdb Land Sdn. Bhd

TABLE 2.1

CHAPTER 3

CASE STUDY (HOUSE DEFECT INSPECTION).

3.1 Introduction of Case Study



FIGURE 3.0 the house design for Akustika

Based on the figure 2.0 above, this is the ongoing project that started on 7th of September 2020 which Simfoni West phase 5b (Akustika). It is a 2-storey terrace house and it's located at PT 6098, Bandar Darulaman, Daerah Kubang Pasu, Kedah Darulaman. This project commences on 7th September 2020, but due to covid lockdown in May 2021, it must stop for a few months. After a long delay the project is back on track in October 2021 and working smoothly. Yan Gap Construction Sdn. Bhd who is the paid contractor that managed the project and Bdb Land Sdn. Bhd as the company client. The contract period for this project is for 18 months, and the completion date already being given which is 6th March 2022. Also, there are executive consultant for this project, Jamil Architect who works on the architect

department, for structural & civil department is being held by Perunding Bersatu, and for the infrastructure department it been supervised by Perunding Timur (K) Sdn Bhd, Teraju Consult Sdn. Bhd oversees mechanical & electrical department and for quantity surveyor is being held by Perunding NFL Sdn, Bhd.

Based on the early report of the project, it contains 6 blocks with 75 unit of 2 storey houses on PT6024 to PT 6098 like in the site plan shown on figure 2.1. The PT is referred to house lot.



FIGURE 3.1 site plan for akustika

Based on the current progress on 31st December 2021, their work progress on schedule is already 83%, but the actual progress is only 59% due to the delay. And based on the figure above, there are 2 plots given. The first plot are houses from block 1A, 1B, 1C, and 1D. And for second plot are the houses from block 2A, 2B, 2C, 2D, 2E and 2F. For my practical weeks, I have been assigned for the process of 2C, 2D, 2E, and 2F. And for the case study, I will be doing about wall construction process.

3.2 To study the methods using for brick laying for the wall.

For the method of wall construction, I've been observed and collecting data for a few weeks on the process since it began. They used a standard method for brick laying. But before they proceed the brick laying, they already measured the length and width, or the wall and the calculation are 39 x 20 feet. Then they used a thin rope to make string line for the brick laying just like in figure 3.2 below.



FIGURE 3.2 the ropes and door frame are installed.

From each room section a nail was pegged inside the floor slab and first floor slab. Then they tied the string from up and down, left to right. After that, they started mixing the concrete using of course the concrete mixer. They used a wet cement just a mixture of sand, cement and water. It shown at figure 3.3 below



FIGURE 3.3 the worker is mixing the mixture

For interior wall they used a standard red brick and exterior wall uses cement brick. They used stretcher bonds bricklaying method. Of course, the bricks are arranged one by one, layer by layer just like in figure 3.4 and 3.5 below



FIGURE 3.6 bricklaying the interior wall



FIGURE 3.7 bricklaying the exterior wall

During the exterior wall process, they also do the window. First, they make small slab for steel windows and 1 long slab glass panel on the process like in figure 3.5.



FIGURE 3.8 The slab for the window.

Then they installed the slab in middle of the wall and cement it. They also put a brick below the slab to make it as a temporary holder just for enough time to let the cement hardened like the figure 3.6 below.



FIGURE 3.6 the process of making window

After they finished the windows section, they began installing walls on the door section. Before they arranged the bricks, they made a long beam and left a small gap above it. The process has been recorded by photographic like shown in figure 3.7



FIGURE 3.7 the formwork of the beam

After almost a month the ground floor wall of house lot 2C,2D, and 2E has finished. Like shown in figure 3.8.



FIGURE 3.8 the ground floor walls

3.3 To investigate the period of the wall constructed.

- The investigation shows that the project commences on 7th September 2020, but due to covid lockdown in May 2021, it must stop for a few months. After a long delay the project is back on track in October 2021. There also some delay due to weather issue too. We have known that on the end of the year, there will be a monsoon season on the northern side of Malaysia. So sometimes due to heavy raining they must stop the construction working due to safety of the workers. And there also a rumour that due to heavy raining, Kedah will somehow be flooded. So, the consultant and the contractor took a precautious action.

3.4 To determine the problems and solutions during brick laying.

- there are a few problems struck during the process. For instant of course, the delay of the construction process. Due to covid, they have been delaying the project for a while. But they manage to get it back on schedule by adding more worker just to make the process faster. And they also deliver the item more early just so they can work on the project as soon as possible. And just to make the issue decreasing, every staff or worker have to scan their temperature to avoid covid from spreading. Next, the other problem is the disturbance by the animals nearby. There is a herd of cows walking near the site construction. and sometimes it leaves their excretion around the site. So, some people have problem avoid while walking around the site. The solution for this will be handle by the owner, so the cows doesn't let lose easily. Next is the heavy rain problem. Sometimes the site will be wet, some of the machineries have some difficulties on site. And, some of the rain effect on the construction process. This problem also has been solved. the heavy rain always happened in the evening, so they took advantage in the morning by making the workers came early in the morning and continuing the process. With this, they have some extra time to finished some of the part in the construction.

CHAPTER 4.0

CONCLUSION

In conclusion, throughout the process there some methods are same with the theory. Where they measure it, and the process on brick laying. There also some new knowledge that been learn throughout the process too. On how they do the window section in the middle of the walls, the process also new to me. The procedure has been carried out nicely even though there some difficulties and obstacle. Out of all, the covid problem is very hard to overcome because it involves all people that working in and out of the site construction. also, some of new knowledge have learned on how they conduct the procedure and how they inspect every process just to have a perfect outcome.

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