



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

**INSTALLATION OF PARQUET BOARD FOR TWO STOREY
HOUSE**

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(PERAK)**

FEBRUARY 2022

Its recommended that the report of this practical training provided

By

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entitled

INSTALLATION OF PARQUET BOARD FOR TWO STOREY HOUSE

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

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STUDENT 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 Kas Id Reka 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 accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

.....
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Thank you so much.

ABSTRACT

Floor is one of the important part in construction, floor can give a house a difference effect on a appearance of the house. The good quality floor improves your home's interior decor while also improving a way of life. Because floor is a permanent element of house, choosing a high-quality floor is crucial. This report will discuss and focus on the installation of the parquet board at the second floor starting with early stage until the end process of it, all of this installation process is carry out at Taman Bunga Raya, Setapak, Kuala Lumpur that are currently are on process on transforming the house from one storey house to two storey house. The objective of this report is to identify the factors that should be considered on parquet board installation, to determine the process of parquet board installation and to identify the problems occurred during parquet board installation. The main source to gain information or method of study for this report is by observation and interview. The observation method is using the camera at the site and observe the worker install the wall finishes. Furthermore by interview the site supervisor and the worker at the site it help to get the needed information to filled the report. This report will discuss the step of installation the parquet, the material of parquet, the type of parquet and the the tools that are used in installation of parquet.

CONTENTS	PAGE NO
Acknowledgement	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	2
1.3 Scope of Study	2
1.4 Methods of Study	3
CHAPTER 2.0 COMPANY BACKGROUND	
2.1 Introduction of Company	4
2.2 Company Profile	5
2.3 Organization Chart	6
2.4 List of Project	7
2.4.1 Completed Projects	7
2.4.2 Project in Progress	11
CHAPTER 3.0 CASE STUDY OF INSTALLATION OF PARQUET BOARD FOR TWO STOREY HOUSE	
3.1 Introduction to Case Study	12
3.2 The Factor That Should Be Considered in Installation of Parquet Board For Two Story House.	13
3.3 The Process of Parquet Board Installation For Two Story House	18
3.4 The Problem Occurred During Parquet Board Installation For Two Story House	23
CHAPTER 4.0 CONCLUSION	
4.1 Conclusion	24
REFERENCES	

LIST OF TABLES

Table 2.1	The organization chart of Kas ID Reka Sdn Bhd.	6
Table 2.2	List of completed project of Kas ID Reka Sdn Bhd.	10
Table 2.3	List of project in progress of Kas ID Reka Sdn Bhd.	11

LIST OF FIGURE

Figure 2.1	The worker is making new furniture to be send to customer that have placed orders.	4
Figure 3.1	Front view of the house project.	13
Figure 3.2	Plywood that are used for this project is store inside house.	14
Figure 3.3	Parquet board that are use for final installation of the floor	15
Figure 3.4	Wood adhesive that are used as a binder in this installation	15
Figure 3.5	Hammer that are used in the installation of parquet board.	16
Figure 3.6	Hand saw that are used to cut the plywood.	16
Figure 3.7	The nail that are use as binder for plywood.	17
Figure 3.8	The diagram of parquet board installation	18
Figure 3.9	Floor joist that have been install	19
Figure 3.10	Top view of floor joist	20
Figure 3.11	The concrete stair that have been install to the wall.	20
Figure 3.12	First layer of plywood floor that have been installed to floor joist	21
Figure 3.13	The parquet board after all the cleaning and polishing work is done	22

CHAPTER 1.0

INTRODUCTION

1.1 Background of study

When construct a building the important aspect of it is the design and the structure of the building to make sure the building have the solid strength, stability and practicality of it, sometime in some cases the available space to build the building is limited because of several factor as example there is already existing building that are nearby of area to construct the new building or there are some obstacles that cannot be removed at the construction site, to counter this problem through the century engineer and architect around the world have develop their own new technique of installing the upper floor on the building. A second storey house provides greater living space without the need for a larger foundation, giving more space in yard for amusement or gardening. The second storey floor system is built to mirror the layout of the main floor system by framers. The second-story floor joists will typically not only run in the same direction as the first-story joists, but will also be directly above it. The building of the second storey follows a conventional procedure. As the height of the building rises, further safety precautions must be taken to prevent falls (Taylor, 2020).

floor is one of the most crucial aspects of any building, since it influences a variety of things that will eventually determine whether or not the space is a success. Many gorgeous spaces exist, but don't work well because the floor surface is either incorrect or entirely impractical (Nemeth, 2016). It is vital to remember that, while the first visual connection with a room is important, the floor is the first tactile contact a person will have with the area. Even if it is subconscious, the finish underfoot will have a direct effect on the psyche. Walking into a beautifully designed place and having to walk extra cautiously because of a surface that isn't appropriate to formal footwear is an example of how a person engage with an interior that has an impact on the floor. In a similar vein, there's nothing more frustrating than walking into a beautifully designed reception area only to find the floor scratched and scuffed

because the design failed to account for the fact that employees from the factory and other work areas use the main reception to access the office area (Nemeth, 2016).

There are various type of floor material that are used in house and building, In terms of material, floor can be divide in two type, hard floor and soft floor. Hard floor is natural and synthetic materials that are rigid and do not bend when trodden on make up hard floor. They're tough, long-lasting, and scratch-resistant. Hard floor act the first layer of the floor. Example material of hard floor is Parquet, concrete, solid wooden planks, laminate floor, ceramic and natural stone tile. Soft floor is known as resilient floor, serves as a complement to any hard surface. When compared to a single ordinary hard floor, the inclusion of this highly elastic layer significantly lowers footfalls and muffles noise. Example of soft floor material is carpet, rug, glass, vinyl, rubber and cork. There are some advantages in each material floor that use for the hard floor as example, if using hardwood as floor it can enhance the look of the house, wood floor not only offer a touch of beauty, but also a sense of coziness to house. Many people feel that having hardwood floor makes a room appear larger. Whether it improves the ambiance of your house. Next by using hardwood, the material of it is strong and durable. One of the main reasons why people pick solid wood floor is because they are more durable. The endurance of this sort of floor is one of the key reasons for its ease of maintenance. (Flower, 2018).

1.2 Objectives of study

- i. To identify the factors that should be considered on parquet board installation for two story terrace house.
- ii. To determine the process of parquet board installation for two story terrace house.
- iii. To identify the problems and solutions of parquet board installation for two story terrace house.

1.3 Scope of study

The scope of study will focus on the installation parquet board and also the process installation of floor at second floor in the single storey house that are

currently are on extension process of the the house for new space and repairing the old structure of the house at Setapak, Selangor.

1.4 Method of study

There are three method that uses to obtain information for this report. The first method by using observation method, by observe the worker at the site installing the finishes. Second method is by interview the person that have the knowledge of floor installation process and the third method is by using book by surfing on the internet. Observation method and interview method is done on the spot at the construction site while the book method is using the internet to get the source from google book and article from several website.

i. Observation method

This method of observation is carried out directly, through site visits. The usage of a camera for further supports this observation. This camera is used to take images at the project site to provide more information about the project, such as a photo of the installation process of finishes and the building site's progress.

ii. Interview method

Interviews are another option for gathering material for this report. The purpose of the interview was to learn more about the project in depth. This method involves interviewing someone who is knowledgeable or involved with the project worker, site supervisors, contractors, and the project manager. The name of interviewed is Encik Shaharil Md Jais the site supervisor and Encik Bairi the head worker for this project.

iii. Literature review

The book was utilize as a third source in this assignment to learn more about `` the installation of wall finishes. There have been various literature used to gather information. All of this literature is found online.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of Company

The journey of company start on 1999 when Kas Id is established, before the company name change the company is formerly know ad KERIS Design & Advertising on 1999 until 2006. This company is Commercial design, planning, consulting, and manufacturing firm specializing in themed interior design and construction. The company is based in Semenyih, Malaysia with a client range across Peninsular Malaysia. The company includes a concept development and has vast experience in designing themed environments for residential, corporate, commercial, hospitality and government sectors. The company also are manufacturing the furniture to be offer to customer.



Figure 2.1: The worker is making new furniture to be send to customer that have placed orders.

The founder of Kas Id is Puan Norhashimah Md yasin and the ceo of company is Shaharil Md Jais. Kas Id offer the service in designing and constructing various types of interior and exterior design projects for Residential, Corporate Office, Commercial,

and Hospitality. With an in-house team of highly skilled architects and interior designers, The company bring ideas to life and produce architecture and interior design for a variety of industries.

2.2 Company profile

Kas id mission is to dedicated to providing quality interior design conceptual, technical, and management services to customers in the implementation of interior design project solutions and will work hard to establish a long-term relationship with customers based on safety, quality, and performance, as well as anticipating their needs.

The company vision is Interior design, construction, and manufacture are trusted for delivering safety, quality, and performance. With the company work scope is concerned with the client's wishes, the tagline of the company also represent the company work scope. R.I.M.A.U is the company tagline which mean Respect, Integrity, Move, Attitude, Unity.

Kas id divide the company into three department, the first department registered the company on manufacturing company for carpenter works, steel works and other related, this department is mainly focus on manufacturing the furniture. The second department is registered on Kas Id Design & Built Contractor Interior & Exterior Renovation Work Civil & Structure for Housing, Building Factory management, this department focus on construction work of client house. The last department is Kas ID Reka Sdn Bhd Interior & Exterior Designing company Space Planning, Layout MasterPlan Drawing 3D & 5D Real Photo Drawing Design Consultation and Costing, This department is focus on making 2D, 3D and plan drawing also designing the exterior and interior of the client house.

2.3 Company Organization Chart

Kas Id organization chart:

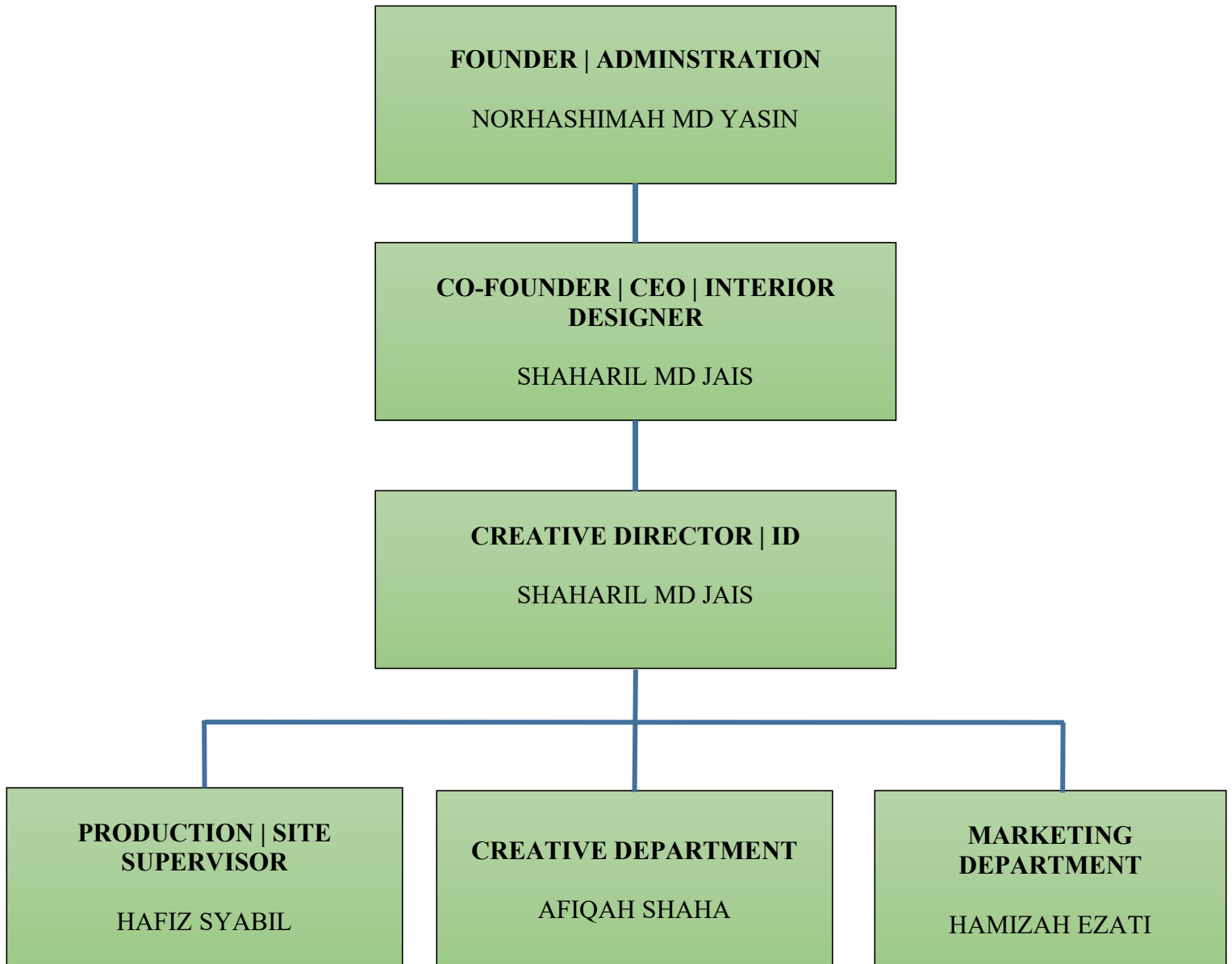


Table 2.1: The organization chart of Kas Id Sdn Bhd.

2.4 List Of Project

2.4.1 Completed Projects

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Design and Built Warehouse Storage for Chemical Liquid Waste and Oil for the use of Tenaga Nasional Berhad (TNB) at TNB Bukit Rangin Station, Kuantan, Pahang.	RM365,000.00	March 2015	September 2015	7 month	Tenaga Nasional Berhad (TNB)
2	Design and Built 2 Unit Prefab Home Stay Modern Structure Concept.	RM56,000.00	September 2015	January 2016	5 month	Encik Shuhairi
3	Supply and Installation of Security Fence for the use of Kuala Kubu Welfare Home under the Ministry of Women Development 1359 meters.	RM285,000.00	January 2016	March 2016	3 month	Ministry of Women Development
4	Installation Work of Futsal Court at HUKM Kuala Lumpur Staff Quarters.	RM45,000.00	January 2016	March 2016	3 month	HUKM Kuala Lumpur
5	Design and Built Roof Structure for the use of Teacher Stage at Sekolah Menengah	RM65,000.00	April 2016	May 2016	2 month	Parent Teacher Association of Sekolah Menengah

	Kebangsaan Jalan Reko, Kajang, Selangor.					Kebangsaan Jalan Reko, Kajang, Selangor
6	Supply and Installation of Security Fence for the use of Alam Sari 2, 980 Meters Wire Mesh.	RM185,000.00	April 2016	May 2016	2 month	Resident Association of Alam Sari 2
7	Welding Work of Security Window for 78 units of 3 Storey Terrace House at Bangi Avenue 3, 4300, Kajang, Selangor.	RM355,200.00	May 2016	December 2017	8 month	Encik Azmi (Property Agent)
8	Design and Built Interior and Exterior for Bangi Avenue 3.	RM56,000.00	September 2016	January 2017	5 month	Puan Rubaiyah
9	Design and Built Kitchenette, Design Divider, Multipurpose Storage Under Staircase.	RM28,000.00	January 2017	February 2017	2 month	Encik Hazran
10	Design and Built Kitchenette, Design Divider, Multipurpose Storage Under Staircase.	RM36,000.00	March 2017	May 2017	3 month	Tuan Syed Nawaz
11	Design and Built Kitchenette, Design Divider, Multipurpose Storage Under Staircase.	RM85,000.00	May 2017	August 2017	4 month	Tuan Syed Nawaz

12	Design and Built Kitchenette, Design Divider, Multipurpose Wardrobe, Ceiling, Interior Renovation.	RM65,000.00	May 2017	August 2017	4 month	Encik Putra
13	Design and Built Interior Renovation Masreca Apartment Cyberjaya.	RM68,000.00	September 2017	December 2017	4 month	Tuan Ahya and Puan Sara
14	Design and Built Interior Renovation	RM185,500.00	February 2018	September 2018	8 month	Encik Saifullah
15	Design and Built Interior Renovation Kitchenette, Wardrobe, Executives Suite Room, Ballroom Design Panel, Operable Door, Interior Design.	RM980,650.00	September 2018	October 2019	2 month	Datin Noorlin
16	Design and Built Bungalow Unit Interior and Exterior Works.	RM289,000.00	November 2018	May 2019	7 month	Encik Mohd Helmi
17	Design and Built Interior Renovation, Kitchenette, Wardrobe, Interior Design Service Hotel Room (Sample Unit Type C).	RM58,000.00	May 2019	October 2019	6 month	Datin Noorlin
18	Design and Built Interior and Exterior including Kitchen Cabinet, Installation Work of Wardrobe and Television Cabinet	RM128,000.00	December 2019	March 2020	4 month	Encik Shamsudin and Puan Norhayati

	for Low Cost Single Storey House.					
19	Design and Built Nyatoh Kitchen Cabinet with Storage Cabinet.	RM20,000.00	December 2019	March 2020	4 month	Tuan Wan
20	Design and Built Interior Design Work of Modern English Wainscoting Concept.	RM57,000.00	January 2020	April 2020	4 month	Encik Rosli
21	Design and Built Modern English Wainscoting Kitchen Cabinet	RM27,500.00	January 2020	April 2020	4 month	Encik Shahreeen dan Puan Maimunah
22	Welding Work for the Safety of Window, Sliding Doors And Main Doors.	RM3,300.00	April 2020	April 2020	1 month	Miss May
23	Design and Built Interior and Exterior Three Storey Terrace Unit House.	RM84,000.00	August 2020	December 2020	5 month	Encik Shukri

Table 2.2: List of completed project of Kas ID Reka Sdn Bhd.

2.4.2 Project in Progress

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Design and Built Interior and Exterior and Upgrade One Storey House to Two Storey House	RM254,000.00	May 2021	January 2022	9 month	-
2	Design and Built Interior and Exterior for 2 storey Terrace House, Hijayu 2, Sendayan, Negeri Sembilan.	RM248,000.00	June 2021	December 2021	7 month	-
3	Design and Built Interior and Exterior for One Storey Bungalow at Bukit Beringin, Melaka.	RM210,000.00	July 2021	-	-	-
4	Design and Built Interior for 3 Storey House at Bang Avenue 3 including Kitchen Cabinet and Television Cabinet.	RM54,000.00	June 2021	-	-	-
5	Design and Built Kitchen and Television Cabinet	RM27,000.00	July 2021	-	-	-

Table 2.3: List of project in progress of Kas ID Reka Sdn Bhd

CHAPTER 3.0

CASE STUDY OF INSTALLATION OF PARQUET BOARD FOR TWO STOREY HOUSE

3.1 Introduction to Case Study

The case study here will describe the whole method and installation of parquet board at first floor house and the material that are used also the tool that used for this parquet installation. This ongoing project is located at Taman Bunga Raya, Setapak. The project is involved with design and built Interior and Exterior and Upgrade One Storey House to Two Storey House. The project value is estimated about RM 254 000 for the whole house including the design and built for the interior of the house. The project begins on may 2021 and expected to complete by January 2021 but the project may be take more time to complete because of the lockdown order that have been imposed by government to cut down the infection rate of covid 19 virus on march. The location is near with mass rapid station, Kem genting Klang (PULAPOT) and VTAR institute.

There are a few problem that engineer has found behind this project. At first the client only want to extend the kitchen section of the house to get more space but the engineer find out that the wall at other section part of the room will collapse in extension work process because the wall have no structure to support the wall. Employer take the engineer advice to demolish all of the wall and make a new structure to support it, because in this case will be involves the safety of the people living inside the house, client is agreed with the employer decision to make the new wall.

This project will be very challenging to all of the team because there are so much defect that have been detected. The client house is build back in the 90's and the house project has changed contractors three times that make the house have encounter many problem today. The rear wall of the house also face the potential to crack and collapse because of vibration from the Mass Rapid Transit railway that are located

near rear of the house. The structure of the house is almost gone to the wall until roof trust. The project that are started just to extension the kitchen now become rebuild back the structure of the house and the client request to extend the house to be two storey house. As the house structure of the house is weak the construction of the floor also will be minimized the weight load of it by using lightweight material.



Figure 3.1: Front view of the house project.

3.2 The Factors That Should Be Considered on Installation of parquet board for Two Story House

3.2.1 Type of floor material

In this project the floor that are used for the second floor construction is hard plywood. This material is chosen because according to engineer the old house structure is to poor to withstand much load of the house. the use of wood to build a second floor house has it owns advantages and disadvantages that need to be considered. The advantage of plywood floor, in term of weight the plywood is much more lighter than solid wood. As on this case study the main goal is to reducing the load that the house has to bear. Plywood also highly flexible, in term of flexibility plywood can change the shape of pieces from planks to square with ease and plywood can be overlay on the top of another plywood without losing the quality of it. Next is

plywood is easy to install, Plywood can be cut to pieces, sanded, floored, nailed or glued, and finished to own choices. Plywood is the easiest way for all types of floors. For the disadvantage of plywood is first, plywood is not a very durable material Plywood itself is a weak material that cannot stand on its own. It becomes stronger on the floor, but still does not reach the strength of hard wood and bamboo, for example, due to its soft nature, it is highly susceptible to scratches and other damage. Next using plywood for floor may pose issues when selling the house, due to plywood low durability issue, house with plywood floors tend to be less valuable than houses with traditional hardwood floors.

3.2.2 Material used for parquet board installation

i. Plywood

The main material of this project is plywood to be install for floor at second floor of the house. The reason plywood is choose for material of floor is to reduce the load of the house can bear, as plywood is lightweight material it suitable for this project to be .install at the second floor of the house. The uses of the plywood also will make the second floor appearance looks like attic in the house as plywood floor is commonly uses in building the attic of the house, the difference between attic and this second floor project will be the space. Attic is limited in space and height while this floor will be more space and height.



Figure 3.2: Plywood that are used for this project is store inside house.

ii. Parquet Board

Parquet board is a wooden floor made from a collection of pieces of wood pressed to form a piece or board that can be placed on a concrete floor and plywood floor. Parquet is made of 100% original wood such as teak and can also be parquet. It is also sometimes called wood-based material or laminate. Parquet board is easy to clean and sturdy suitable to be install for this project.



Figure 3.3: Parquet board that are use for final installation of the floor

iii. Wood Adhesive

In this project wood adhesive will be used and act as binder for parquet board. The uses of wood adhesive will help the parquet board stick to the plywood floor more strongly and effectively and will make the floor not be uprooted.



Figure 3.4: Wood adhesive that are used as a binder in this installation

3.2.3 Tool Used In The Parquet Board Installation

i. Claw Hammer

Claw hammer is used in this installation of floor. The claw hammer is used to knocking the nail into the plywood board to make sure the board is stick firmly to the floor joist that are made from solid wood. the selection of the claw hammer is intended to make it easier for the nail to be easily removed if the nail is nailed incorrectly. Forked claws on the back that make it easier to grab the head of the nail. The head and handle of the claw hammer is made of metal while the grip is wrap with rubber to give the user strong grip while using the hammer.



Figure 3.5: Hammer that are used in the installation of floor.

ii. Hand saw

Hand saw is frequently uses in this floor installation. Hand saw uses for cutting the plywood into more small size to be fit on the floor joist. The uses of hand saw will ease the work of cutting the plywood to the required size as the second floor will have small gape to be covered on. the blade of the hand saw is made of steel and the grip is made from hard plastic.



Figure 3.6: Hand saw that are used to cut the plywood.

iii. Nail

The nail is important in this installation process, the nail is use with the plywood and act as binder to the plywood and floor joist. The nail is choose as binder to the plywood because it will hold plywood stronger as plywood is one of the wood type, using nail as binder for wood is a good choice than screw because it will not split the wood.



Figure 3.7: The nail that are use as binder for plywood.

3.3 The Process Of Parquet Board Installation For Two Storey House



Figure 3.8: The diagram of parquet board installation

i. Installation of floor joist

Before the plywood can be install, the first step of parquet board installation process is installation of floor joist. because the walls of this house use bricks, rims joist are not installed on the entire perimeter of the first floor top wall plate because of the rim joist is made from the wood, it's hard to make the wood stick to the wall using only nails, instead The floor joist is install first. The floor joist is install on the top of the wall and act as frame for the the second floor.

Floor joist is making from solid wood that are lay vertically and horizontally. The floor joist first will be measure according the length of the wall to the space between the walls and than will be cut using hand saw to get the desired length. After that floor joist will be cement to the top of the wall to make it stick firmly on top of the wall, by cementing the floor joist it will be able to put the plywood on it.

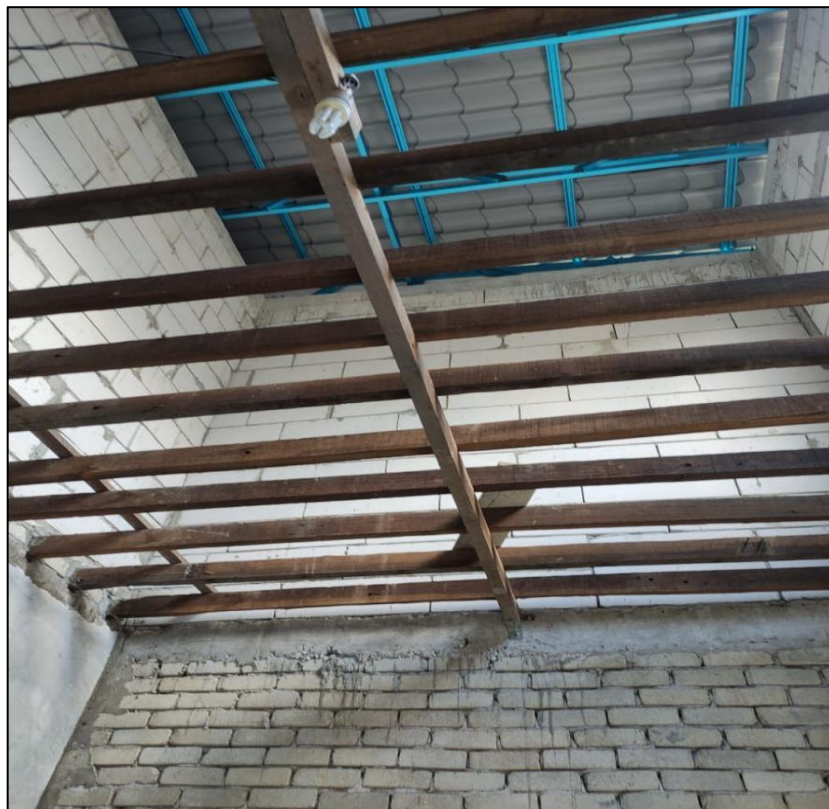


Figure 3.9: Floor joist that have been install



Figure 3.10: Top view of floor joist

ii. Installation of framing for floor opening

The next step is making framing for the floor opening, the frame opening is build for building the stair later, stairs are essential for commuting between floors. Usually the frame opening is in the center of the floor or edge of the floor, for this project the floor is install at edge of the floor and the stair is stick to the side of wall and the staircase is made from concrete.

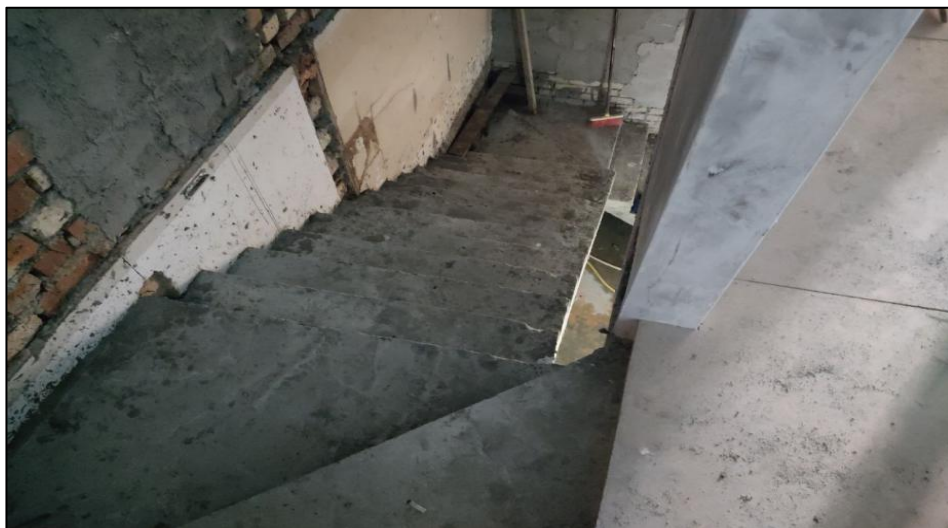


Figure 3.11: The concrete stair that have been install to the wall.

iii. Installation of sub floor

After making the opening on the floor, the next step is install the sub floor. In this installation project the material for the sub floor that are used is plywood. First plywood will be cut by using hand saw into the desired size to fit perfectly on the available space. Then this plywood will be placed on the floor joist and will be nailed so that the plywood does not come off. plywood will be nailed to each floor joist to further strengthen the plywood from detaching.

To ensure that the plywood can withstand the load, a second plywood will be placed on top of the first plywood. Plywood panel will be install fit snugly together to make sure there are no gap that are left to avoid any further problem and also to give tidiness to the floor.



Figure 3.12: First layer of plywood floor that have been installed to floor joist

iv. Installation of parquet board

The last step is installing the parquet board. For his project parquet board will be install on top of plywood. A thin layer of wood adhesive will be spread on top of plywood surface and the parquet board will be install. The use of wood adhesive is to make the parquet board adhere strongly and not easily detached, wood adhesive will act as binder to parquet board and plywood. The uses of parquet board will give a appealing appearance because of its shape and have sophisticated looks that can be adapted to any lifestyle. After the parquet board is install the floor construction is completed, floor cleaning and polish work can be done to provide a final finishes touch.

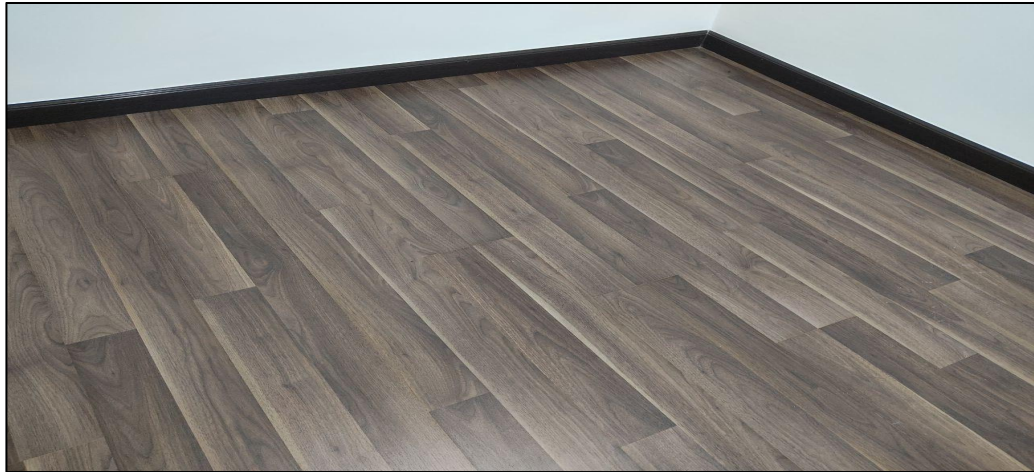


Figure 3.13: The parquet board after all the cleaning and polishing works is done

After all cleaning and polishing job is done, all installation parquet board is complete and can be put all the interior on the floor area. the project was completed despite some problems in terms of material management, which is the delay in the delivery of material to the construction site and the shortage of manpower. all these problems have slowed down the process of installing parquet board which causes the progress of work to be slow and cause the installation not be completed within the stipulated time.

3.4 The Problems and Solution of Parquet Board Installation For Two Storey House

Every structure of the house have their own and problems. No matter what material are use or the way of installation it still have advantages and disadvantage that can cost the problem to the house in the future. The wood floor can give a good appealing appearance to the house because wood have their own ecstatic value but wood also can give a problem to the owner of the house. There are three common problem that can occur during parquet installation.

First is abnormal gaps floor is easy to move. When placed correctly, the planks can stick close together in the rainy season and create gaps in the dry season. Abnormal joints are usually the result of the floor being installed being too damp. The solution for this is do not use a wood filler to repair the gap. Instead, glue a piece of wood to the edge of the board to make a patch.

Second common problem is cupping. Cupping can occur if the bottom of the board is damp than the top, edges will form. Wide plank floor is easy to cup. Cupping most often occurs when the deck is placed over a wet basement or basement. Installing a vapor retardant between the floor and the floorboard can improve condition by slowing the transfer of moisture.

Lastly the common problem is buckling. Buckling can occur If it cannot be extended, the parquet board will bend. If the floorboards are not adapted or are exposed to strong moisture, it can be pressed and fall off the floor. Hardwood floors that are too wet can crack the floor and expand to the extent that it pushes door frames and falls off wall cladding. The floor may warp if installed in a basement damp, flooded, or too dry location. In any case, moisture is always a cause of warping, and improper fastening can aggravate the condition. The nails may be the wrong size or too far apart. When installing with glue, using the wrong size trowel can reduce the adhesion between the floorboard and the floor.

CHAPTER 4.0

CONCLUSION

4.1 Conclusion

In conclusion there are three factor that need to be look out before the installation of parquet board. The first factor is type of the floor material. The material must be choose wisely as it can effect the load that the floor can bear of, it is important to contractor and engineer to observe and inspect the existing building for any kind of defect before begin the construction process as it can give a problem to project progression. For this project the defect that the house is facing is the structure of the house fragile because of the past contractor that build the house did not build the extra column and other reinforcement to make the house solid strong because of that the type of floor material that are use in this project is platform plywood to reduce the load on the house. Next factor is material that are use in the installation. As for the material for this installation the parquet is selected because to give the floor a aesthetic look for the wood and for the final finishes touch. The last factor is the tool that are use for parquet installation need to be correct and suitable for the job. The tool will help the installation work much easier and more faster. For this project, There are four process of parquet board installation, First is installation of floor joist, second is making framing for the floor opening. Third process is installing the sub floor and the last process is installing the parquet board.

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