DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(PERAK)

INSTALLATION OF FLOOR AND WALL FINISHES FOR BATHROOM AT APPLE 99 HOTEL

Prepared by:
SITI NOOR AIDA BINTI SAMSURI
2016458618

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

DECEMBER 2018

It is recommended that the report of this practical training provided

By

SITI NOOR AIDA BINTI SAMSURI

2016458618

entitled

INSTALLATION OF FLOOR AND WALL FINISHES FOR BATHROOM AT APPLE 99 HOTEL

Accepted in partial fulfillment of requirement has for obtaining Diploma in Building.

Report Supervisor		Miss Nor Azizah Binti Talkis
Practical Training Coordinator	:	En Muhammad Naim Bin Mahyuddin
Programme Coordinator	:	Dr. Dzulkarnaen Bin Ismail

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

DECEMBER 2018

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 Kerjaya Prospek (M) Sdn Bhd for duration of 14 weeks starting from 3 September 2018 and ended on 7 December 2018. It is submitted as one of the prerequisite requirements of DBG307 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

Name : SITI NOOR AIDA BINTI SAMSURI

UiTM ID No : 2016458618

Date : 18 DECEMBER 18

ACKNOWLEDGEMENT

Bismillahhirrahmannirrahim.

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

I would like to extend my heartfelt gratitude for the guidance, advice and help rendered throughout the period of training by the following group of amazing individuals. First and foremost, I would like to thank Mr. Kenny Low and Mr. Lim Cher Seong as a site manager from Kerjaya Prospek (M) Sdn.Bhd for the opportunity given, to conduct my training in his esteem company. His team of professionals comprising of Miss Mardiana, Miss Nurul Faeda, Pn Murni Azmera and En Muhammad Hafiz as a site engineers, have enabled me to learn and develop my understanding, knowledge and feel of real time projects, and the theory involved in analysis of structures, building and civil works. Besides, I would like to thank En. Muhammad Izzuddin as a site supervisor, because spending his time to guide and share the knowledge about construction field along the days of practical training.

I would also like to thank all the UiTM lecturers that have taught and nurtured me in becoming a better student and person. I would also like to extend my deepest appreciation to the lecturers who are directly involved during my training stint. To Miss Nor Azizah Binti Talkis, Supervising Lecturer, En Muhammad Naim Bin Mahyuddin, Practical Training Coordinator and Dr. Dzulkarnaen Bin Ismail, Programme Coordinator, I value the time, effort, encouragement and ideas that they have contributed towards the successful completion of my training, this report and the valuable knowledge that have been shared over the last few semesters.

Last but not least, my special thanks to my beloved parents for their sacrifices over the years to complete this practical training report. Thank you for being a part of my spirit booster. I would have never been as positive to finish this report if it were not from their advices and guidance.

Thank you so much.

ABSTRACT

Floor and wall finishes in construction is one of the important thing to elaborate. Therefore, this report will discuss about the requirement that client wants in wall and floor finishes for bathroom at hotel Apple 99, Melaka. The example of finishing materials in modern construction are marble, ceramic or porcelain. The objective of this project is to demonstrate the installation of floor and wall finishes that using one of the finishing material which is ceramic or porcelain. Porcelain tiles are in vogue especially in modern houses and available in various colors and combinations. Furthermore, this report also will describe the method of inspection that contractor do after the installation and identify the problem and the solution of the installation. Observing the installation process of tiles are very helpful because the problem can detect and also can monitor the requirement that client wants directly. As a conclusion, finishes used to improve and decorative qualities of building and structures, as well as to protect structural members from external factors.

CONTENTS **PAGE NO.**

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURE

LIST OF APPENDIX

CHAPTER 1.0

INTRODUCTION

1.1 Background and Scope of Study

Figure 1.1: The prototype of project Apple 99, Melaka.

Title for the project that handle by construction company,Kerjaya Prospek (M) Sdn.Bhd is "Cadangan Pembangunan Hotel dan "Service Suite" 41 Tingkat dan 1 Tingkat Aras Bawah Tanah at Lot 2005 (PT 79),KB XXI,Daerah Melaka Tengah,Melaka Bandaraya Warisan Dunia".The developer for this project is Apple 99 Development Sdn.Bhd. Cost for this project is RM412 million and the expectation of complete date is April 2019.This report were conducted the installation of floor and wall finishes for bathroom at Apple 99 Hotel.

Finishes used to improve the service and decorative qualities of building and structures, as well as to protect structural members from external factors. The example of finishing materials in modern construction are marble, ceramic and porcelain. Finishes are usually for interior or exterior finishing, but some of the materials are used for both. In Apple 99 project, they choose porcelain tiles as a finishes for hotel bathroom.

Porcelain tiles are commonly use especially in modern houses and available in various colors and combinations. It also versatile in application and can be used anywhere including walls, fire places, ceilings and floors. These tiles have a number of qualities that make them perfect for tiling almost any part of the building. Delivering thermal, chemical, and mechanical characteristics, ceramic tiles is the best choice because ceramic tiles are resistant to impact, force, stain and water absorption. It also recommended for bathrooms due to their innumerable advantages and can be used innovatively.

Porcelain tiles are ceramic tiles commonly used to cover floor and wall with a water absorption rate less than 0.5 percent. Plus, it is extremely tough and the tiles are difficult to crack. If the single tile does crack due to a severe impact, the process of replacing a tile is relatively simple. This is the main reason why tile is preferred for wet areas like bathrooms. Porcelain tiles that using for hotel bathroom Apple 99, Melaka is from Feruni Ceramic Sdn Bhd.

Figure 1.2: Packing tiles from Feruni Ceramiche Sdn. Bhd

1.2 Aim

- To investigate the requirements that client wants in wall and floor finishes for bathroom at Apple 99 Hotel.

1.3 Objectives

i. To demonstrate the installation of floor and wall finishes at bathroom Apple 99 Hotel by observation.

ii. To identify the problem and the solution of the installation by observation.

iii. To describe the method of inspection that contractor do after the installation.

1.4 Methods of Study

To conduct this study, there were several method of study that have been used to complete this task. The method that used is including discussion among the site manager, site supervisor and client representative. Moreover, site visit on the actual site construction and visual observation of the site. Lastly, using books or internet for references to make a further research about the topic

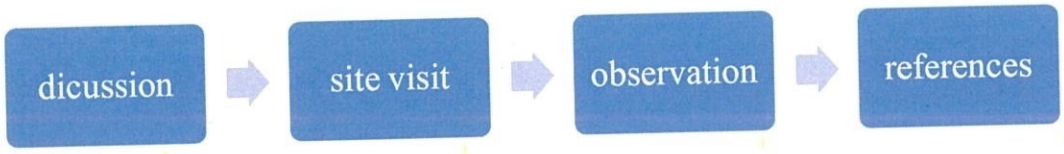


Figure 1.3: Flow chart method of study used.

Method of Study:

1. **Primary**

   i. Interview

   If anything happens at site, discussion with the manager and site supervisor is needed. During the discussion, all the information is giving directly.

Figure 1.4: Discussion with site manager, site supervisor and client representative about the problem for install bathroom tiles.

ii. Observation

Observing the installation process of tiles at bathroom hotel. Other than that, can get the information and identify the problems during the installation directly.

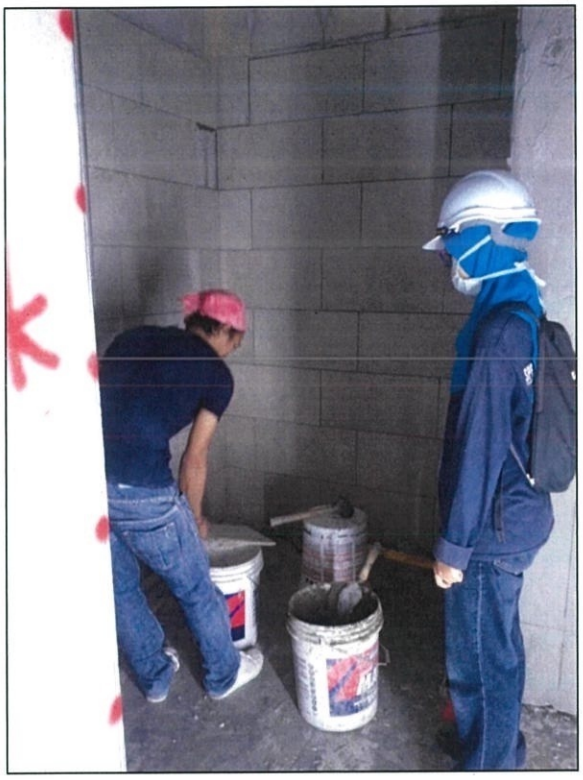


Figure 1.5 : Observing the tiling work process.

2. Secondary

i. Book

Making references based on books can get more knowledge about wall and floor finishes. The books referenced was written by writers that have a lot of experience in this field.

ii. Internet

Internet also used as a secondary source to obtain information about method of installation tiles. There are several websites that have been used to get more information about tiles in construction field.

iii. Reference

For the reference, some information is obtained through the books and some is from internet. Other than that, the information is also obtained from the drawing, requirement list, site manager, site supervisor, client representative and the subcontractor workers that install the tiles.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of Company

Kerjaya Prospek (M) Sdn Bhd builds and constructs real estate properties. The company was incorporated in 1995 and is headquartered in Kuala Lumpur, Malaysia. The Kerjaya Prospek Group Berhad formerly known as Fututech Berhad.The construction activities of Kerjaya Prospek Group Berhad are primarily undertaken by its wholly owned subsidiary, Kerjaya Prospek (M) Sdn Bhd, which is currently involved in the business of building construction, interior fit-out business and miscellaneous construction related services for the premium residential property segment.

Kerjaya Prospek (M) Sdn Bhd is a grade 7 contractor. It is registered with the Construction Industry Development Board (CIDB). With this category, it allows Kerjaya Prospek (M) Sdn Bhd to tender and manage a wide spectrum of contracts in the market with unlimited value. Kerjaya Prospek (M) Sdn Bhd has also been awarded the ISO 9001:2000 Quality Management Systems Certification by UKAS and SIRIM QAS 2008.

Acknowledging that there is on-going materials and technological advancements in the industry, Kerjaya Prospek (M) Sdn Bhd always noted engineering and value added design as a key component to their services. The team are adequately and trained to provide optimum solutions to their clients.

Last but not least, Kerjaya Prospek Group Berhad plans to further develop and expand the construction segment with capabilities in piling and reclamation projects. The management believes that, if they take this action, they will make their business going to an another level.

2.2 Company Profile

Figure 2.1: Company logo

Source : https://goo.gl/images/RJyXLu

Kerjaya Prospek Group Berhad (KPGB) was incorporated in 1995 and it is headquartered in Kuala Lumpur, Malaysia.KPGB went through a corporate exercise that has transformed it into a significant construction player in Bursa Malaysia with a market capitalization value of more than RM1.0 billion. According to leading business newspaper, Focus Malaysia, KPGB was voted as the "Top 9 fastest growing companies" with the expansion and branding exercise.

The year of 2016 has been economically challenging for Malaysia and many countries globally. Nevertheless, KPGB preserved and with strong group fundamentals intact, they have to date secured about RM1.5 billion worth of contracts for many prestigious and iconic projects from reputable clients. Their wholly-owned subsidiary which is Kerjaya Prospek (M) Sdn Bhd has entered into the new area of construction which involves dredging works at the Seri Tanjung Penang reclamation project.

KPM is a Grade 7 contractor registered with the Construction Industry Development Board (CIDB). With this category of grading, it allows KPM to tender and manage a wide spectrum of contracts in the market with unlimited value.KPM has also been awarded the ISO 9001:2000 Quality Management Systems Certification by UKAS and SIRIM WAS 2008.

Besides, KPSB has also have an experience worked with SP Setia, IOI Group, AP Land, UM Land, Malaysian Resources Corporations Bhd, Belle View Group and ECH Development Sdn Bhd.

Table 2.1: Information about the company Kerjaya Prospek Group Berhad.

Name of Company	• Kerjaya Prospek Group Berhad
Date of Incorporation	• 1995
Address of the Company	• No 1, Jalan Wangsa Permai • 3rd Floor, Bangunan One Wangsa • Taman Wangsa Permai • 52200 Kuala Lumpur.
Telephone Number	• Tel:
Fax Number	• Fax:

They also awarded the Brand Laureate Best Brands Award Corporate Branding in Construction 2015/16 and the Brandpreneurial Leadership Awards 2015/16. About the management of Kerjaya Prospek Group Berhad, an executive chairman Datuk Tee Eng Ho and his brother Mr. Tee Eng Seng, who is the group's executive director, have emerged as substantial shareholders in Eastern & Oriental Bhd (E&O). The brothers have more than 28 years of experience in the civil and building construction industry. The company has undertaken numerous high profile and premium high-rise construction project in Malaysia. They also privately own a group of companies of various successful and iconic commercial, residential and mixed development project in Malaysia.

Figure 2.2: The pictures of Datuk Tee Eng Ho and his brother Mr. Tee Eng Seng.

Source: Buletin Kerjaya Prospek (2016-2017)

2.2.1 Company Vision

- To be the trusted and preferred leader in providing products and services in the construction and property industry.

2.2.2 Company Mission

- To pursue our businesses with excellence.
- To deliver quality products and services to our customers on timely basis.
- To develop human capital and be a caring employer.
- To create value to our shareholders.
- To be a responsible corporate citizen.

2.3 Organization Chart

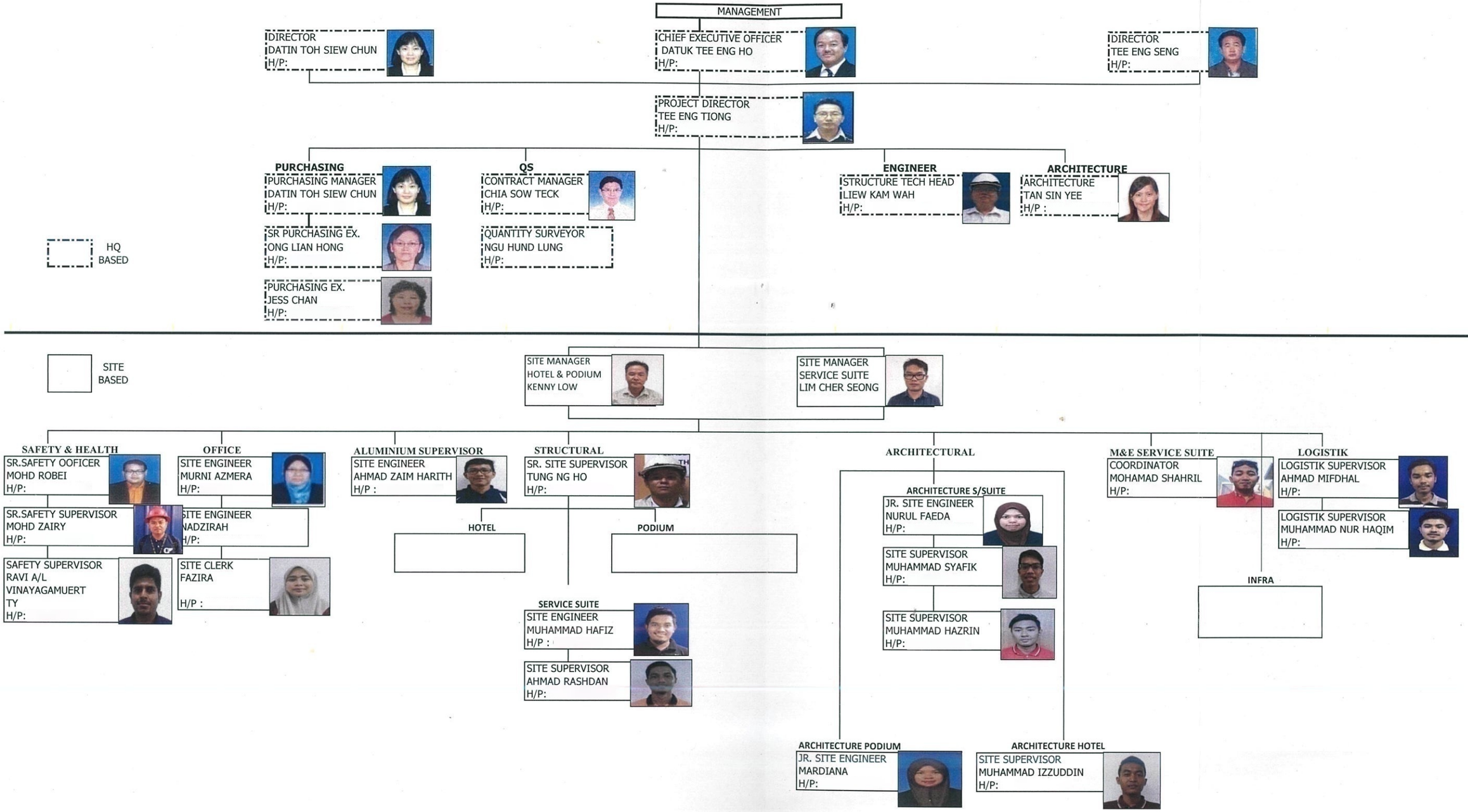


Figure 2.3 : Organization Chart

2.4 List of Project

2.4.1 Completed Projects

Table 2.3: List of completed project

Project Tittle	Client	Description	Completion Date	Contract Value
Eco Sky Shop Office	Eco Sky Dev Sdn Bhd.	• At Taman Wahyu, Kuala Lumpur • 140 units • 4 storey shop office	December 2016	RM 213 million
Residency V	Kerjaya Prospek Property Sdn Bhd.	• At Jalan Klang Lama • 412 units services apartment	December 2016	RM 312 million
The Shore	Kerjaya Hotel Sdn Bhd.	• At Melaka River • 4 towers of hotel and serviced apartment • 42 storey (Tower 1) • The tallest building in Melaka.	May 2015	RM 309 million
Quayside Seafront Resort Condominiums	E&O Property (Penang) Sdn Bhd.	• At Tanjung Penang • 698 units condominium	December 2013	RM 460 million
Andaman Condominiums	E&O Property (Penang) Sdn Bhd.	• At Sri Tanjung Penang • 698 units condominium	January 2015	RM 460 million
St. Mary Residences	Mergexel Property Dev Sdn Bhd.	• At Jalan Tengah, Kuala Lumpur • 657 units luxury condominium	May 2012	RM 412 million
Dua Residency	Edisi Utama Sdn Bhd.	• At Jalan Tun Razak, Kuala Lumpur • 288 units luxury condominium	December 2006	RM 220 million
All Seasons Park	Lembaman Development Sdn Bhd.	• At Lebuhraya Tein Tek, Penang • Mixed Development, Tower A,B,C & Block W,X & Y	April 2014	RM 415 million

Table 2.4: List of completed project

Project Tittle	Client	Description	Completion Date	Contract Value
Avira Garden Terraces Phase 1	Nuri Merdu Sdn Bhd.	• At Medini Iskandar, Johor • 218 units of double storey surperlink	July 2016	RM 250 million
My Habitat	Bandar Tasik Putri Sdn Bhd.	• At Jalan Aman Dalam, Kuala Lumpur. • 383 units serviced apartment.	October 2009	RM 376 million
Sky Peak Residences	Setia Indah Sdn.Bhd	• At Johor Bahru • 482 units serviced apartment	May 2015	RM 412 million
Sky Gardens Residences	Setia Indah Sdh Bhd.	• At Johor Bahru • 420 units serviced apartment	September 2014	RM 423 million
Lumina Kiara	ECH Development & Management	• At Mont Kiara, Kuala Lumpur • 12 unit Semi-D and 104 units condominium	May 2010	RM 200 million
Melody Homes	Lembaman Development Sdn.Bhd	• At Lebuhraya Thein Teik, Penang • 500 units low cost apartment	November 2011	RM 456 million
E&O Hotel	E&O Property (Penang) Sdn Bhd.	• At Bandaraya Georgetown, Penang. • Annexe 155 rooms	May 2010	RM 324 million

2.4.2 Project in Progress

Table 2.5: Project in progress.

Project Tittle	Client	Description	Expected Completion Date	Contract Value
The Tamarind Executive Apartments	E&O Property (Penang) Sdn Bhd	• At Tanjung Penang. • 2 towers apartment of 552 units each	September 2018	RM 430 million
Arte	Nusmetro Property Sdn Bhd	• At Mont Kiara • 1447 soho and 259 services suite	October 2019	RM 478 million
The Elysia Park Residences	BCB Heights Sdn. Bhd	• At Medini Iskandar, Johor • 981 units apartment	May 2019	RM 489 million
Sky 88-Sora & Nube	Setia City Development Sdn.Bhd	• At Johor Bahru • 588 units condominium (Phase 1)	January 2018	RM 415 million
The Apple	JV of Yong Tai Group Sdn Bhd	• At Melaka • 284 rooms Marriot Courtyard Hotel and 361 serviced suite 41 storey	April 2019	RM 412 million
Kaleidoscope Residensi	Kerjaya Prospek Property Sdn Bhd	• At Setiawangsa • 600 units serviced apartment	September 2020	RM 420 million
The Parque Residence	Eco Sanctuary Sdn Bhd	• At Kota Kemuning • 594 units apartment	July 2018	RM 425 million
Eco Terraces	Eco Terraces Dev Sdn Bhd	• At Paya Terubung, Penang • 333 units condominium	January 2018	RM400 million

CHAPTER 3.0

CASE STUDY (BASED ON TOPIC OF THE REPORT)

3.1 Introduction to Case Study

Project Cadangan Pembangunan Hotel dan "Service Suite" 41 Tingkat dan 1 Tingkat Aras Bawah Tanah at Lot 2005 (PT 79), KB XXI, Daerah Melaka Tengah, Melaka Bandaraya Warisan Dunia or project Apple 99 Melaka will be the highest building in Melaka.

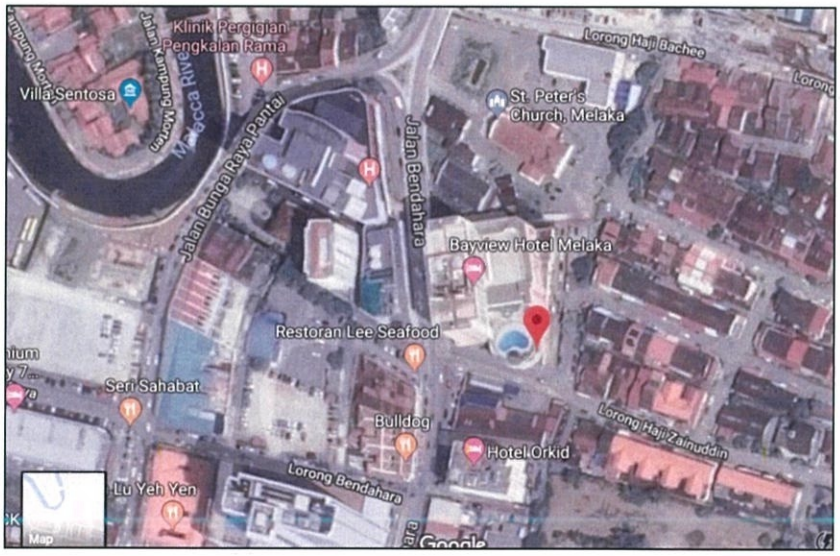


Figure 3.1: Maps of project location at Daerah Melaka Tengah.

Source : https://www.google.com/maps

This project is developing by Apple 99 Development Sdn.Bhd and Berjaya Prospek (M) Sdn.Bhd as a main contractor. This site actually consists of: -

- Type of buildings : Hotel and Residential Units
- Number of Lots and Blocks : Hotel (24 Storeys,284 Units)

  Service suite (41 Storeys,361 Units)
- Building Height : 41 Storeys

Figure 3.2: Condition of site on December 2018.

The site manager for this project are Mr. Lim Cher Song and Mr. Kenny Low from Berjaya Prospek (M) Sdn Bhd.In addition, according to Mr. Kenny Low, the project amounted is RM412 million. Finally, this project is started from September 2014 and expected to complete on April 2019.

Figure 3.3: Project information board.

Lastly, client have their own target about this project. One of the target is, company Yong Tai Berhad wants Hotel Apple 99 Melaka be the best hotel in Melaka. Because of that, they have their own requirement in tiling work. Normally their requirement is equal with other project but Yong Tai Berhad are very serious to get the best result. For example, client wants the correct method of installation. Besides after the one of the finishes installation done, client representative will do the inspection first before proceed to other process.

This is the work culture that applied by Yong Tai Berhad as a client and Berjaya Prospek Group Berhad as a main contractor to ensure every aspect of work is done with good quality, time and cost.

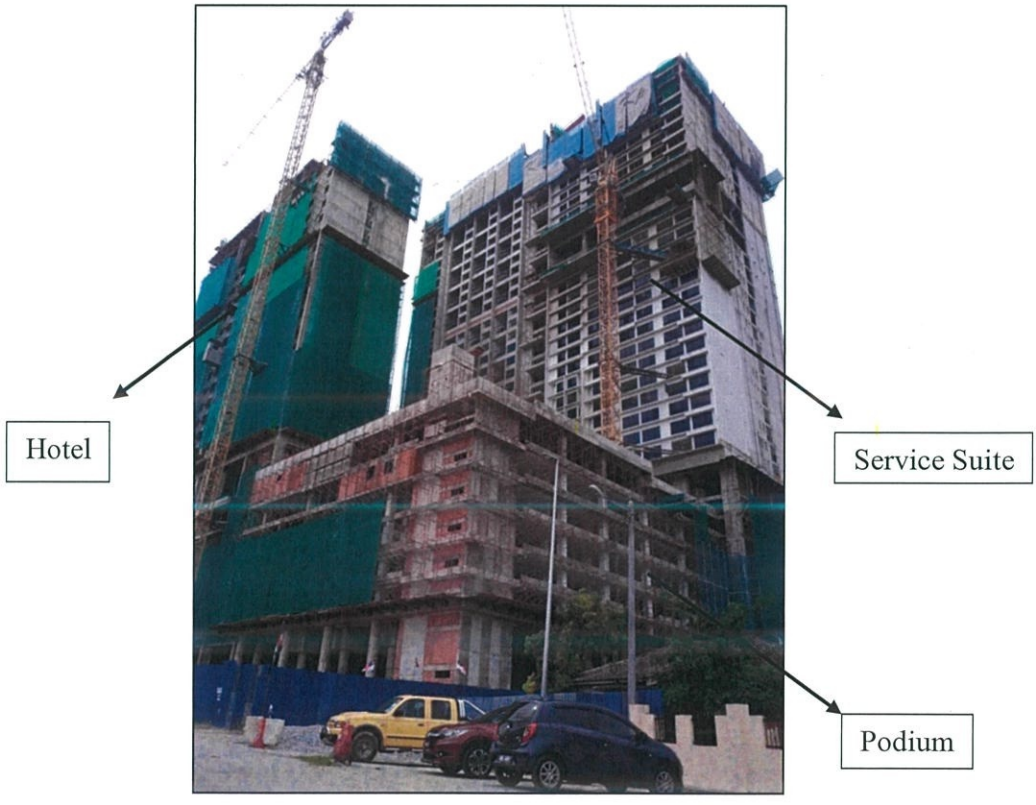


Figure 3.4: The Apple 99, Project.

Table 3.1: Information about Apple 99, Melaka project

Project Tittle :	• Cadangan Pembangunan Hotel dan "Service Suite" 41 Tingkat dan 1 Tingkat Aras Bawah Tanah at Lot 2005 (PT 79), KB XXI, Daerah Melaka Tengah, Melaka Bandaraya Warisan Dunia.
Developer :	• Apple 99 Development Sdn.Bhd
Main Contractor :	• Berjaya Prospek (M) Sdn.Bhd
Cost :	• RM412 million
Expectation Complete Date :	• April 2019

3.2 Method Statement Installation of Floor Finishes for Bathroom Hotel Apple 99, Melaka.

There are seven stages that should be considered for floor tiling for bathroom hotel Apple 99, Melaka project.

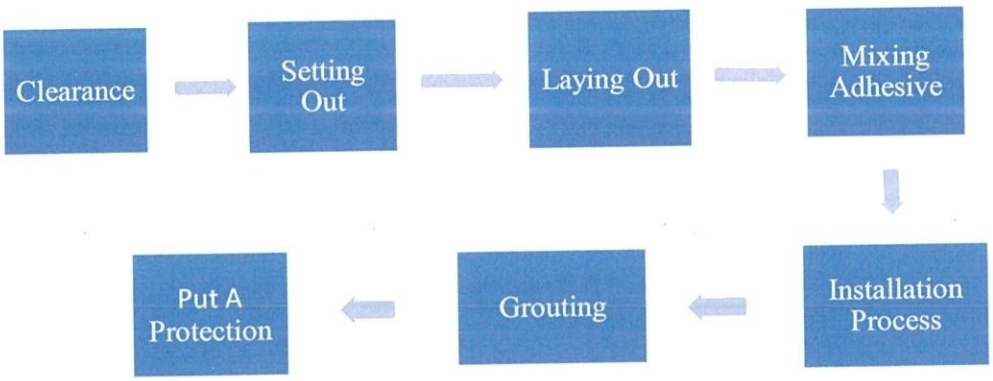


Figure 3.5: Flow chart of floor installation method.

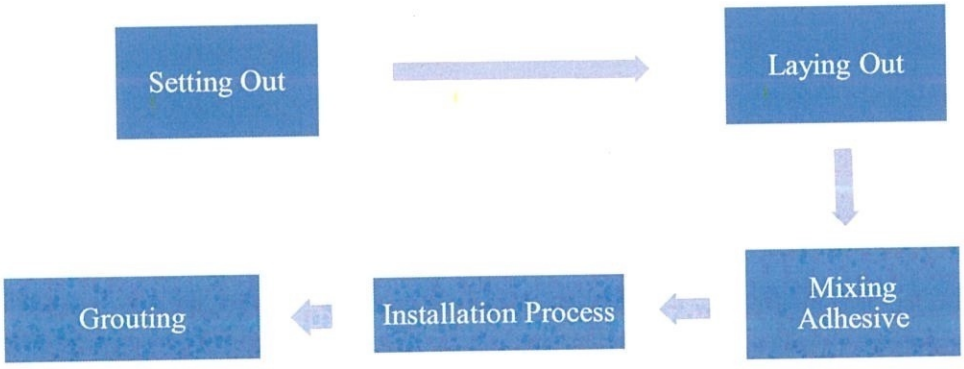


Figure 3.6: Flow chart of wall installation method.

3.2.1 Explanation of Floor Finishes Installation

1. Clean the floor from dust and debris. This is to ensure that the tiled surface will be level.

Figure 3.7: The condition of bathroom floor that clean from dust and debris.

2. Measure to find the center of the bathroom using leaser, and marking with oily thread that intersect exactly at the center of the floor.

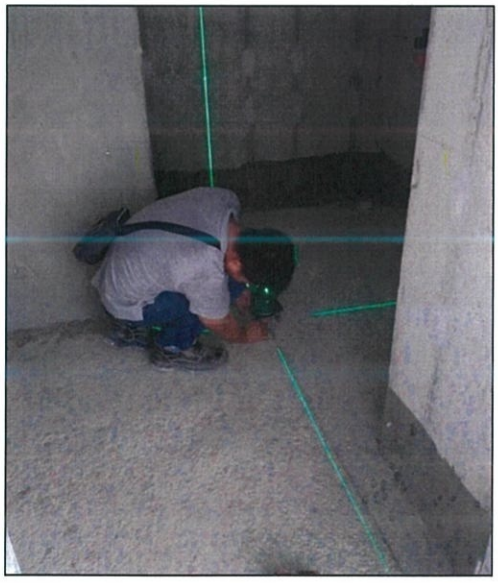


Figure 3.8: The tile layer making using laser.

3. Before starting the installation, start with a dry run which is laying out the tiles and spacers. This is to determine where to start the process and determine the width of the grout lines.

Figure 3.9: The tile layer laying out the tiles before start the installation process.

4. Pour just about an entire bag of Kerabond T cement into a container. Add an enough water to get the dry mixture wet, and start mixing using the mixer.

Figure 3.10: Preparation for mixing Kerabond T cement that use as adhesive for floor tiles.

5. When the mortar is ready, begin working on one section of the floor. Spread the mixture and use a notched trowel to obtain an even layer of mortar. Work in small sections to keep the mortar from drying before the tile is in position.
6. Put the tiles at their place. Once the tiles have been laid, put a spirit level on top of the tiles. This is to make sure the verticality of the tiles. Floor tiles cannot be an equal verticality because in bathroom, we need to make sure the water is flowing not the floor trap directly.

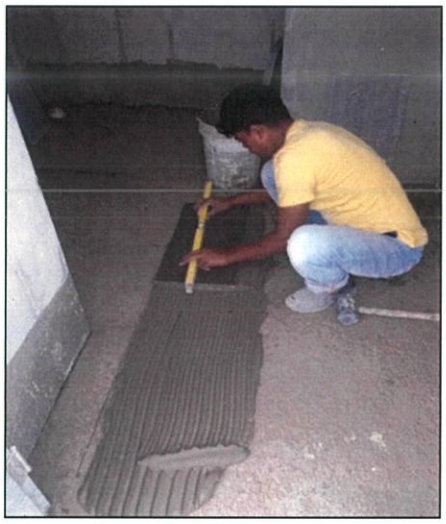


Figure 3.11: The tile layer use spirit level to make sure the verticality of the tiles.

7. When getting to a wall where a standard tile will not fit, mark and make cuts with a standard tile cutter. If do not use the tile cutter, mark and have a tile supplier to cut them prior to installation.
8. Continue the process with using the oily line as a guide and placing spacers between each tile to ensure uniform distance between the tiles. The spacer is about 2mm or 3mm.When all the tiling work is complete, allow the tiles to dry in the place for several days before grouting process.

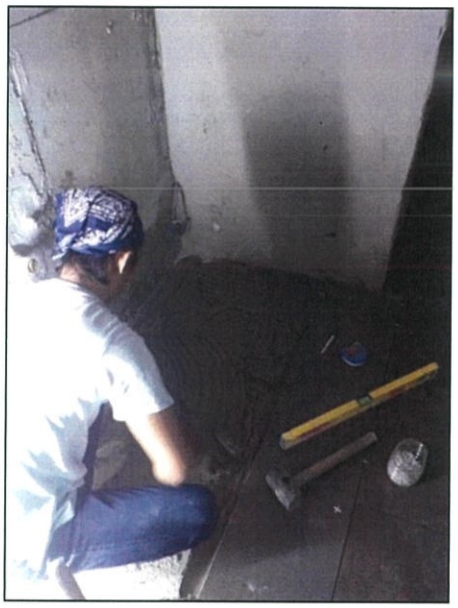


Figure 3.12: The tile layer continues install the floor tiles and put the 2mm spacer between it.

9. For the grouting process, Kerjaya Prospek (M) Sdn Bhd using Grouting 140 cement. Grout is available in a variety of textures and colors. Pick a color that matching with the tiles. Use a sponge trowel to spread the grout across the tiles at an angle to be certain to get it between each tile. Before that, remove all the spacers before the grouting process start.

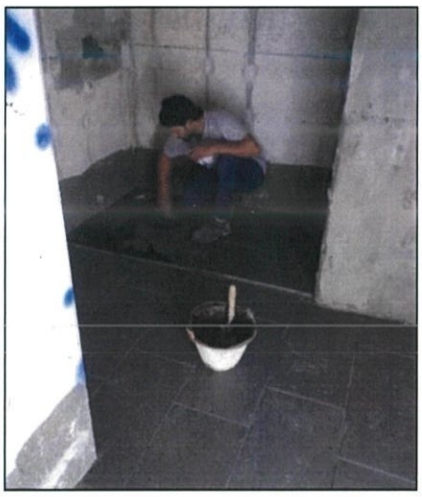


Figure 3.13: The tile layer grouting the floor tiles.

10. When the grout is in the place, wipe away the excess with a damp sponge. After a few hours, do a water flow inspection and then put the protection carpet to cover the floor during installation of wall.

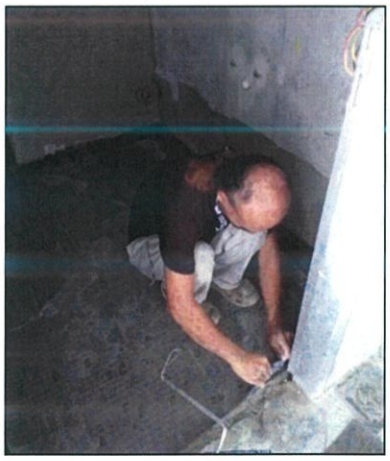


Figure 3.14: The tile layer covers the floor tiles for protection during tiling wall.

3.2.2 Explanation of Wall Finishes Installation

1. Measuring to find the center of the bathroom using leaser, and marking with oily thread that intersect exactly at the center of the wall.
2. Before starting the installation, start with a dry run which is laying out the tiles and spacers. This is to determine where to start the process and determine the width of the grout lines.

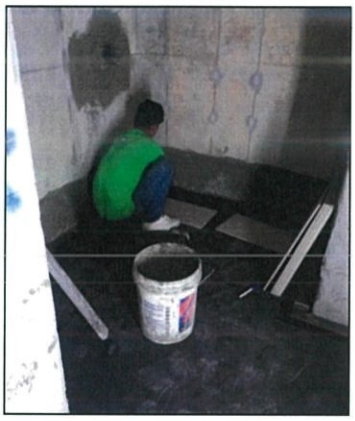


Figure 3.15: The tile layer prepares for install the wall tiles.

3. Pour just about an entire bag of Adesillex P9 cement into a container. Add an enough water to get the dry mixture wet, and start mixing using the mixer.

Figure 3.16: The tile layer preparing the Adesillex P9 cement for the adhesive of the wall

4. When the mortar is ready, begin working on one section of the floor. Spread the mixture and use a notched trowel to obtain an even layer of mortar. Work in small sections to keep the mortar from drying before the tile is in position.
5. Put the tiles at their place. Once the first row of tiles has been laid, put a spirit level on top to check that they are horizontal. This is where the wedges are helpful. If any of the tiles need adjusting, simply shift the position of the wedges to lift or drop the tiles so they line up correctly.

Figure 3.17 : The tile layer use spirit level to check the tiles are horizontal correctly.

6. When getting to a part where a standard tile will not fit, mark and make cuts with a standard tile cutter. If do not use the tile cutter, mark and have a tile supplier to cut them prior to installation.
7. Continue the process with using the oily line as a guide and placing spacers between each tile to ensure uniform distance between the tiles. The spacer is about 2mm or 3mm.When all the tiling work is complete, allow the tiles to dry in the place for several days before grouting process.
8. For the grouting process, Kerjaya Prospek (M) Sdn Bhd using Grouting 132 cement. Grout is available in a variety of textures and colors. Pick a color that matching with the tiles. Use a sponge trowel to spread the grout across the tiles at an angle to be certain to get it between each tile. Before that, remove all the spacers before the grouting process start.

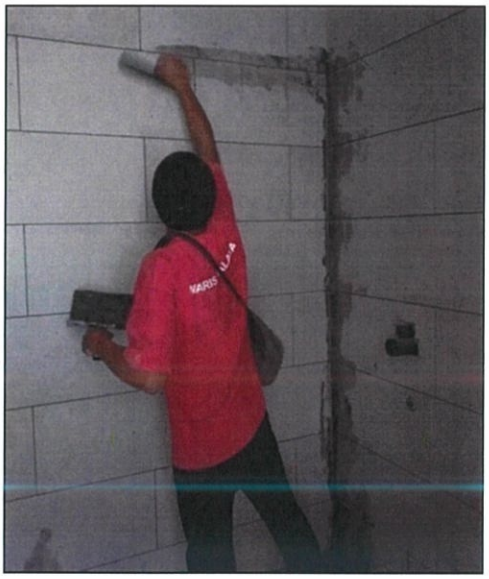


Figure 3.18: The tile layer grouts the wall tiles.

9. When the grout is in the place, wipe away the excess with a damp sponge.

3.3 Method Statement Form for Installation of Floor Finishes Bathroom Hotel Apple 99, Melaka

Table 3.2: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
1.	Clearance - Clear all the debris and rubbish that disturb the installation work of floor tiles.	 **Figure 3.19 : Ready for installation floor tiles.**		• Worker	• Broom • Wheelbarrow • Chisel • Hammer	30 minutes

Table 3.3: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

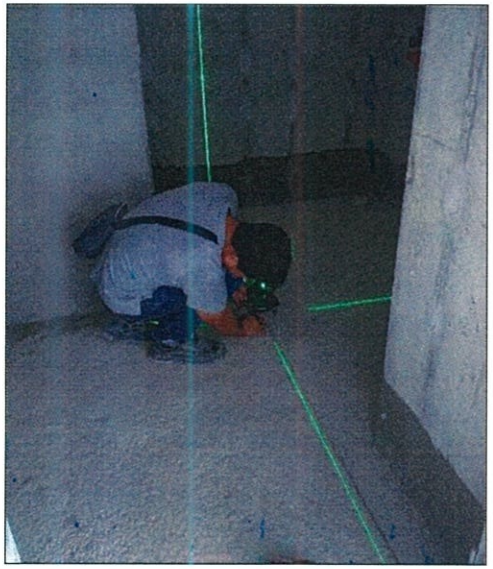
NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
2.	Setting Out - Marking to find the center of floor.	 **Figure 3.20 : Marking center of floor using setting out laser.**		• Supervisor • Skilled labor	• Setting out laser • Oily thread • Measuring tape • Permanent marker	10 minutes

Table 3.4: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
3.	Mixing Adhesive - Mixing the Kerabond T cement as an adhesive.	 **Figure 3.21: Kerabond T cement**	• Hand held mixer	• Worker	• Container bucket	15 minutes

Table 3.5: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
4.	Install the floor tiles - Installation of floor tiles based on the architecture drawing.	 **Figure 3.22: Measuring the verticality using spirit level.**		• 1 Skilled worker	• Rubber hammer • Notched trowel • Spirit level • Spacer	1 day

Table 3.6: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

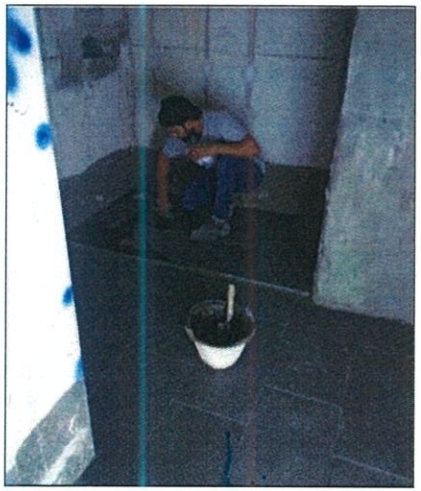
NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
5.	Grouting - Grouting process is filling the space among the tiles with the grouting cement. In this project, Kerjaya Prospek (M) Sdn Bhd using cement grout with code 141.	 **Figure 3.23: Grouting process.**		• Skilled Worker	• Sponge trowel • Small container bucket • Large sponge	30 minutes

Table 3.7: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
6.	Install the protection carpet. - This is to protect the floor tiles during installation wall tiles.	 **Figure 3.24 : Installation of protection carpet.**		• Worker	• 1 role of protection carpet • Scissor	30 minutes

3.4 Method Statement Form for Wall Tiling Work Bathroom Hotel Apple 99, Melaka

Table 3.8: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

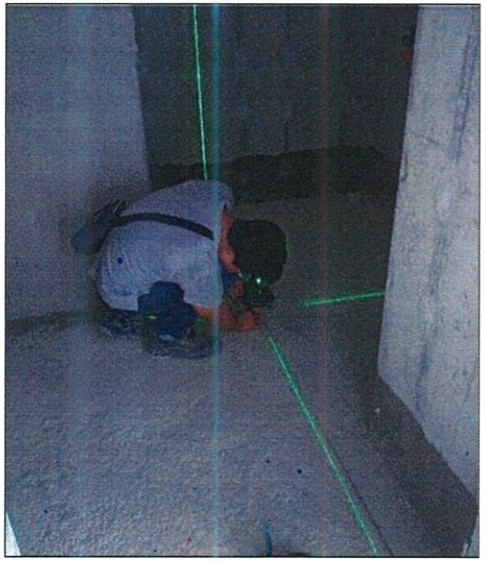
NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
1.	Setting Out - Marking to find the center of wall.	 **Figure 3.25 : Setting out using laser for find the center of wall..**		• Supervisor • Skilled labor	• Setting out laser • Oily thread • Measuring tape • Permanent marker	10 minutes

Table 3.9: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
2.	Mixing Adhesive - Mixing the Adesillex P9 cement as an adhesive.	 **Figure 3.26: Adesillex P9 cement.**	• Hand held mixer	• Worker	• Container bucket	15 minutes

Table 3.10: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
3.	Install the wall tiles - Installation of wall tiles is based on the architecture drawing.	 **Figure 3.27 : Measuring the verticality and horizontality using spirit level.**		• 1 Skilled worker	• Rubber hammer • Notched trowel • Spirit level • Spacer	2 day

Table 3.11: Method statement form for tiling work bathroom hotel Apple 99, Melaka.

NO	OPERATION	SEQUENTIAL DIAGRAM	MACHINERY AND PLANT	LABOUR	EQUIPMENT	DURATION
4.	Grouting - Grouting process is filling the space among the tiles with the grouting cement. In this project, Kerjaya Prospek (M) Sdn Bhd using cement grout with code 132.	 **Figure 3.28: Grouting process.**		• Skilled worker	• Sponge trowel • Small container bucket • Large sponge	30 minutes

3.5 The Problem and The Solution of the Installation Floor and Wall Tile at Bathroom Hotel Apple 99, Melaka.

Table 3.12: The problem and the solution during installation bathroom tiles at hotel Apple 99, Melaka.

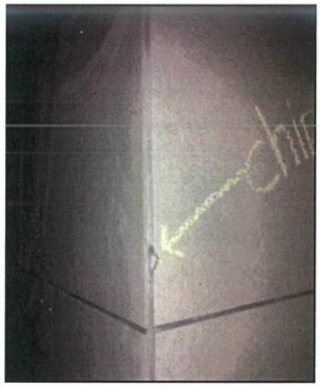
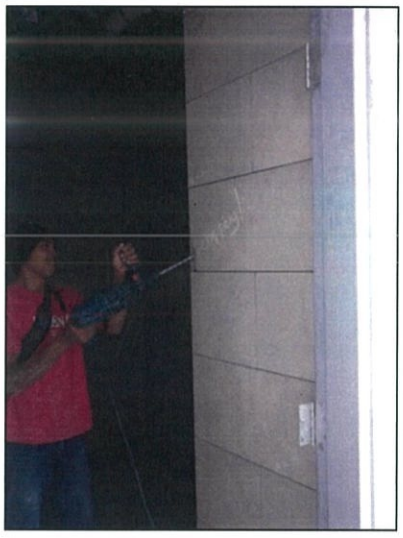
Problem	Solution
• Tiles chipping  **Photo 3.29: Tile chipping** The problem of tiles chipping is because of the shocking that apply to the tiles. Other than that, the tiles are already chipping when it produce by the suppliers.	 **Figure 3.30: Tile layer drill the chipping tile for install the new one.** According to client representative, they do not want any chipping or crack at the tiles. So as a solution, tiler from Kerjaya Prospek (M) Sdn Bhd will install the new tiles that do not have any crack or chipping.

Table 3.13: The problem and the solution during installation bathroom tiles at hotel Apple 99, Melaka.

Problem	Solution
• Wrong tiles arrangement The tile layer have to do a research and study the drawing that given by the architect before do the installation .If they do not do a research the probability to make a wrong installation is highest.	According to client representative, they do not want any false of the tiles arrangement. So as a solution, tiler from Kerjaya Prospek (M) Sdn Bhd will reinstall the tiles according to the architect drawing if any wrong arrangement happened.
• Poor grouting  **Figure 3.31: Example of poor grouting.** The tile layer maybe overlooked during the grouting process. Because of that, there are a place that do not full with grouting mortar.	The tiler layer from Kerjaya Prospek (M) Sdn Bhd have to fill the place that do not full with grouting mortar again.

Table 3.14: The problem and the solution during installation bathroom tiles at hotel Apple 99, Melaka.

Problem	Solution
• Different shading of tiles  **Figure 3.32: Tiles that have a different shading.** The different shading of the tiles also can be a problem. This is can cause the tiles look different than before.	As a solution, Kerjaya Prospek (M) Sdn Bhd will contact the supplier to see this problem with their own eyes. They have to fixed this problem such as supply the new tile with the same design as before. All the losses will not be borne by Kerjaya company.

Table 3.15: The problem and the solution during installation bathroom tiles at hotel Apple 99, Melaka.

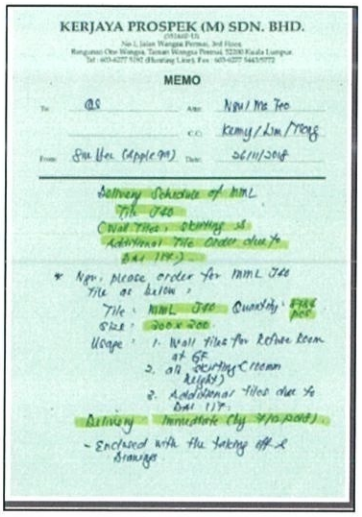
Problem	Solution
• Tiles and cement is out of stock This problem may be causes by the quantity surveyor or an architect that regardless of their calculations. Other than that, maybe the tile layer do not install the tiles carefully until the tile broke and cannot be use again.	 KERJAYA PROSPEK (M) SDN. BHD. MEMO **Figure 3.33: Memo for tiles second order from architect to the supplier.** Make a second order with the supplier. This can make the progress of tiles installation delay because they have to wait until the second order arrive to the site.

Table 3.16: The problem and the solution during installation bathroom tiles at hotel Apple 99, Melaka.

Problem	Solution
• Floor and wall having hollow  **Figure 3.34: The condition of wall that cause by improper plaster.** Based on the upper photo, Kerjaya Prospek (M) Sdn Bhd will plaster the wall because the length of the wall is decrease compare to the length that mention in architecture drawing. During the plastering work, the worker that do the job negligent and use a wrong method during plastering work. Because of that, the wall become hollow and crack.	As a solution ,they will hack the wall and plastering the wall again using the correct method and materials.

3.6 Method of Inspection After the Installation of Floor and Wall Tiles.

3.6.1 Water flow inspection before start the installation of wall tiles.

After the installation of floor tiles finish, client representative wants Kerjaya Prospek (M) Sdn Bhd do a water flow inspection. This is to ensure that there is no reservoir water in the bathroom. If the cases happened, it is causes by the incorrect during tiles installation and should be reopened. After that, installation of the new tiles is needed. The water flow inspection is required to ensure all the water that produced from the use of bathroom flows through the floor trap and it can help to prevent any accident and harm.

The method of water flow inspection is; the tile layer will pour one bucket that full of water from the door. After that, supervisor will see the water flow until the water through the floor trap. They also have to make sure, that water flow is faster and all the water are clear from the floor.

The supervisor has to take a picture during the inspection. It is as a proof and reference for the client representative. Lastly, site supervisor will tick in the water flow inspection form and shows to the client representative that the bathroom is already do the water flow inspection.

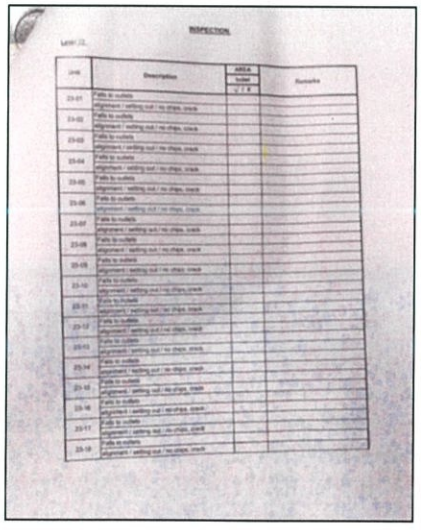


Figure 3.35: Water flow inspection form.

3.6.2 Inspection with client representative.

First and foremost, every unit have their own style, pattern, size and dimension of design. So, the client representative will ensure that the bathroom Hotel Apple 99 using the correct tiles and cement for installation and grouting. Plus, the installation of the tiles is must according to the architect instruction design.

Secondly, client representative will be using drum sound detection hammer for hollow checking. They will check both which are floor and wall tiles. The reason for hollow checking in tile is if unchecked, this can lead to the tiles crack and potentially break. Aside from the aesthetics of such a result, it could and also pose a tripping hazard. For example, when the tiles are break, it can cause a wounds on foot due to injuries or other limbs due to infringement. Those are the danger especially for children.

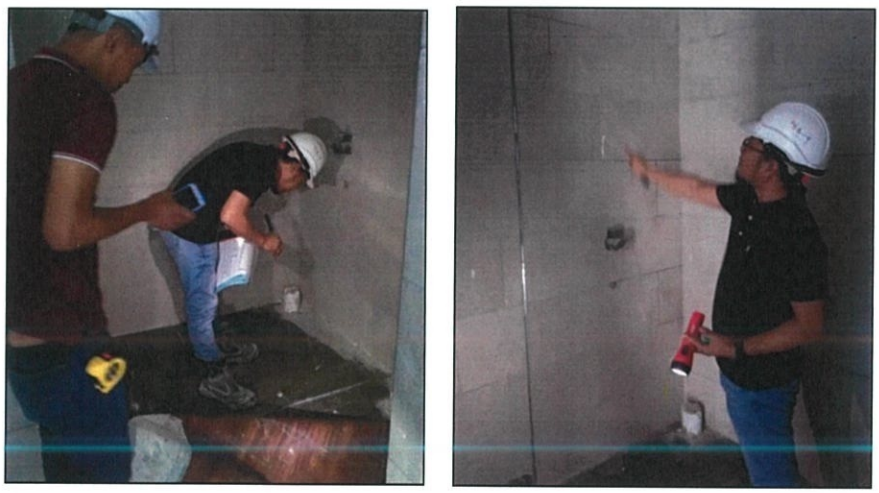
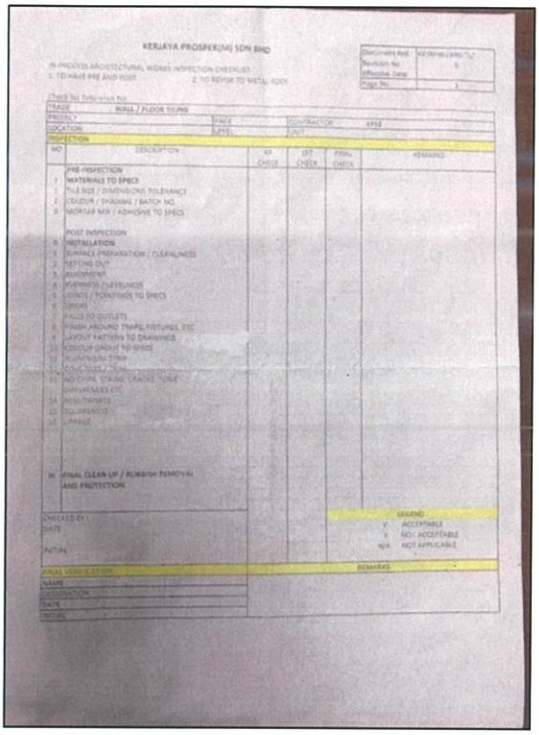


Figure 3.36 : Inspection with client representative.

At the same time, they will ensure that the grouting of the tiles is complete and the gaps between each tiles is equal. This is to maintain the aesthetic value and to avoid water or insect get into under the tiles. Theoretically, if this cases happen it will present a hollow in the future.

Finally, client representative will sign the inspection form to verify that the bathroom is ready for the next step such us installation of ceiling tee.



KERJAYA PROSPEK(M) SDN BHD

Figure 3.37: Tiling inspection form.

CHAPTER 4.0

CONCLUSION

4.1 Conclusion

In conclusion, wall and floor tiles such as porcelain or ceramic are the example of tiles that commonly use especially for bathroom. This is because ceramic or porcelain have absorption of water less than 0.5 percent. Porcelain may be the only flooring material that truly works in any room of building. It has a hard protective top layer that makes the tiles impervious to water and most stains. Plus, making them naturally resistant to the ravages of high humidity and conditions.

Furthermore, the installation of porcelain tiles is easier compare to marble. This is because porcelain tiles are light compare to others. Because of the weight of the porcelain is decrease it is also easy for maintenance. Additionally, porcelain can be one of the more affordable flooring materials. Besides, it is a commercial materials and it is easy to get the stock from the supplier. In summary, there are no biggest problem for install the porcelain tiles in bathroom Hotel Apple 99, Melaka.

In a nutshell, the requirement that client wants from Kerjaya Prospek (M) Sdn Bhd in installation of bathroom tiles is a normal requirement. Same to others construction company wants in the installation of floor and wall finishes. This is one of the steps that client takes to realize their dreams of making Hotel Apple 99, Melaka as a one of the hotel that tourist will choose when came to Melaka.

REFERENCES

Books:

Kerjaya Prospek Berhad, (2016). Buletin.Kerjaya Prospek Group Berhad, Malaysia.

Simon, (1994). Building Wealth. Rockefeller Center United States of America.

Jefferis (A), (1986). Architectural Drafting and Design.Nelson Canada, Canada.

Cassidy (C), (2005). Tiling. The Taunton Press.Inc, United States of America.

Rutkowski (M), (2014). Fundamentals of Building Counstruction.John Willy & Sons, Canada.

Johnson, (1990). Ceramic Tile. Creative Publishing International, United States of America.

S. Russle (J), (2003). Perspectives in Civil Engineering. American Society of Civil Engineering, United States of America.

Jodidio (P), (2016).100 Contemporary House.Littlehampton Book Services, Harvard.

A. Salingaros (N), (2006). A Theory of Architecture.Harald Puschel, Germany

Hill (J). (2001). Architecture's Edmunds bury Press, New York

Mark S. (2006). Art and Design.Ucas Rosehill, England

Emma Caprez (E). (2004). Art and Design. Trotman and Company Ltd, Britain

Web Site:

Spirit Level. (2018). Available from : https://uae.souq.com

Canadian Centre for Occupational Health and Safety. (2018). Available from : https://www.ccohs.ca

Construction Software. (2018). Available from : https://esub.com

Life Safety Management. (2017). Available from : https://lifesafetymanagement.com

Kerjaya Prospek (M) Sdn Bhd. (2018). Available from : https://www.jobstreet.com.my

Company Overview of Kerjaya Prospek (M) Sdn Bhd. (2018). Available from : https://www.bloomberg.com

How to Install Tile Bathroom Wall? (2017). Available from : https://www.bunnings.com.au

Purpose of Hollow Checking (2011). Available from: https://www.quora.com

How to Tile a Floor? (2017). Available from : https://www.diynetwork.com

How to Tile the Bathroom Wall? (2016). Available from : https://www.bunnings.com.au

Laying Tiles Floor. (2013). Available from : https://youtu.be/ZOczr9WCVig

How to Tile a Bathroom Wall? (2008). Available from : https://youtu.be/JYais38h5Qk

How to Build a Ceramic Tile Shower? (2013).Available from : https://youtu.be/NPPU8wNilhU

APPENDIX

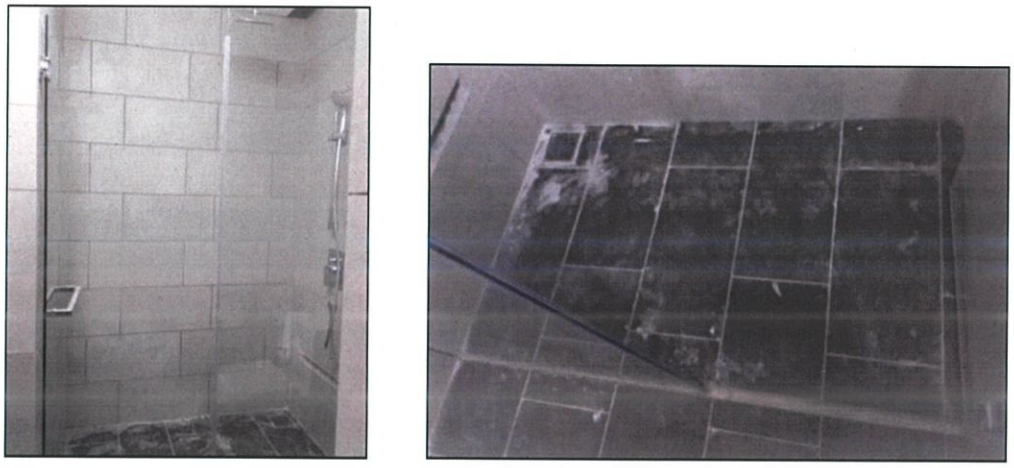


Figure 4.1: After the installation process.

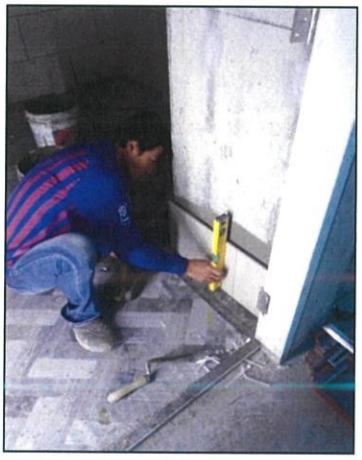


Figure 4.2: The workers make sure the verticality of tiles during installation.