



اَبُو سَابِقِي تَبْكُو لَوِي مَبَارَا
UNIVERSITI
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**DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITY TECHNOLOGY MARA
(PERAK)**

OCTOBER 2013

It is recommended that this Report Practical Training

By

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entitle

Plastering Work Using Pump

accepted as partial fulfillment as requirements in obtaining Diploma in Building.

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(PERAK)**

OCTOBER 2013

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 through practical training practical training that I went through a period of 5 months from 13 May 2013 to September 28 2013 at Majidee (Holdings) Sdn. Bhd. It is also a requirement to pass the course DBN307 and accepted in partial fulfillment of the requirements for obtaining a Diploma in Building.

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ABSTRACT

This report briefly described more about how the plastering pump is use in the project. It is the research and study based on the five months experience at the project site. This report is divided into sections and start with the company background and the background of the construction project. There are many research method as I used to get some knowledge that is related to my report. This report Plastering using pump is actually use for plastering work for building more than four storey but in this project the plastering pump is use although it is just one bungalow. So, why the plastering is used in this project? How it works on site? Therefore, this report will described everything and some suggestion which situation the plastering pump is use. As a conclusion, this report will explain in more detail about the process of plastering pump method and procedure to readers.

TABLE OF CONTENT			PAGES
Acknowledgement			iv
Abstract			v
Table of content			vi
List of tables			viii
List of figures			ix
List of photos			x
List of abbreviations			xii
List of appendices			xiii
CHAPTER	1.0	INTRODUCTION	1
	1.1	Introduction	1
	1.2	Selection of Study Title	1
	1.3	Objective	1
	1.4	Research Scope	2
	1.5	Research Method	3
CHAPTER	2.0	COMPANY BACKGROUND	5
	2.1	Introduction	5
	2.2	Company History	6
	2.3	Company Profile	6
	2.4	Company Vision and Mission	8
	2.5	Organization Chart	9
	2.6	List of Project	
		2.6.1 Completed Project	10
		2.5.2 Current Project	12

CHAPTER 3.0	CASE STUDY	13
3.1	Introduction	13
3.1.1	Plastering (in general)	13
3.1.2	The purpose of plastering	13
3.1.3	Plastering techniques	14
3.1.4	Manual technique (in general)	14
3.1.5	Pump techniques (in general)	14
3.1.6	The difference between plastering using manual and pump techniques	15
3.1.7	The benefits of plastering using pump technique	16
3.2	Plastering pump	
3.2.1	What is pump technique	16
3.2.2	The need for plastering using pump techniques	16
3.2.3	How to plaster using pump technique	17
3.2.4	Preparing surfaces before plastering	17
3.2.5	Materials used	18
3.2.6	Materials handling to maintain their quality and manage costs	19
3.2.7	How to mix plastering materials	20
3.2.8	How to clean the machine after use	22
3.2.9	Equipment used	23
3.3	Health and Safety issues for plastering work	30
3.4	Photos	31
CHAPTER 4.0	METHOD STATEMENT	33
CHAPTER 5.0	CONCLUSION AND RECOMMENDATIONS	40
	REFERENCES	41
	APPENDICES	42

LIST OF TABLES

Table 2.1:	List of completed projects by Majidee (Holdings) Sdn. Bhd.	10
Table 2.2:	List of current projects by Majidee (Holdings) Sdn. Bhd.	12
Table 3.1:	The difference between plastering using manual and pump techniques	15
Table 3.2:	Equipment used in plastering pump	23
Table 3.3:	Health and safety issues	30

LIST OF FIGURES

Figure 2.1:	Organization chart	9
Figure 3.1:	Ratio cement	18
Figure 3.2:	Process of plastering using pump	31

LIST OF PHOTOS

Photo 3.1:	Surface prepared for plastering	17
Photo 3.2:	Mixture process placing	17
Photo 3.3:	Spray to prepared surface	18
Photo 3.4:	Smooth the texture	18
Photo 3.5:	Materials used	19
Photo 3.6:	Lime	19
Photo 3.7:	Cement	19
Photo 3.8:	Sand	19
Photo 3.9:	Machine area	20
Photo 3.10:	Lime pass through the mixture	20
Photo 3.11:	Mix the ingredient together	20
Photo 3.12:	Separate any unwanted substances for plastering	21
Photo 3.13:	Plastering work started	21
Photo 3.14:	Cleaning process	22
Photo 3.15:	Cleaning process	22
Photo 3.16:	Sponge flow out	22
Photo 3.17:	Front Elevation	31
Photo 3.18:	Rear Elevation	31
Photo 3.19:	Right Elevation	31

Photo 3.20:	Left Elevation	31
Photo 3.21:	Living Room	32
Photo 3.22:	Master Bedroom	32
Photo 3.23:	Toilet	32
Photo 3.24:	Bedroom 3	32
Photo 3.25:	Kitchen	32
Photo 3.26:	Porch	32

LIST OF ABBREVIATIONS

IBS	Industrial Building System
Sdn. Bhd	Sendirian Berhad
CIDB	Construction Industry Development Board
JKR	Jabatan Kerja Raya

LIST OF APPENDICES

Appendix 1: Monthly rental for one set of plastering machine

CHAPTER 1

INTRODUCTION

1.1 Introduction

Plasterwork refers to construction that done with plaster, such as a layer of plaster on interior wall or plaster for decorative walls. The process of creating plasterwork, called plastering, has been used in building construction for centuries. Plastering work are commonly apply to cover brick, roof beam, column from be seen by resident. When the plastering are apply the surfaces of the wall will be look smooth and decorative. It is also will make the painter easier to apply paint on the wall.

Furthermore, plastering is the flexible design which allows for the curves and arches surface of the wall. Plaster also will give a durability for the surface to be hard, strong surface provides excellent abrasion resistance resulting in minimum maintenance. Even in high-traffic areas. Plaster also eliminates irritating looks such as board joints and nails.
<http://www.restorationplastering.com/faq.html>

1.2 Selection of Study Title

As to accomplish the practical training, I as the student of course in building are ask to submit a report of the topic that have been choose. There are three topic that have shown to the lecturer, entitled plastering work for traditional and machine method, construction of Bungalow from substructure

to superstructure and construction for floor slab. I have been choose plastering work for traditional and machine method as the report title.

1.3 Objectives

The main objective of the research is to understand and to know more detail about plastering work which is the title of the research report that have been choosing.

1. To know the right method for plastering work.
2. To identify the tools and materials that use in plastering work.
3. To compare the effectiveness of plastering work by traditional method and plastering machine.
4. To find ways to solve the problem in plastering works.

1.4 Research Scope

In recent years, the construction industry in Malaysia is active and many buildings are built to be completed on an urgent timing. Therefore, the use of modern technology capable of overcoming this problem. One of these is the construction of bungalow that use plastering machine which is pump for plastering work. The uses of the plastering pump in this project gaining because the project need to be complete according the period of time given, high durability and easy to handle compared with the traditional method of plastering.

This study are started within five month. This project are started around November and need to be done immediately. The focus of the study in this project are the comparison method of plastering work by hand with using

machine, the tools and materials for plastering purpose and health and safety issues in plastering work.

In addition, the main problems that appear around the study also have been focus on the problems that often arise in plastering work before, during and after the plastering work done. Every problem that arise in the plastering work has an effective solution.

1.5 Research Methods

Study method was used in this practical report. This method is used to obtain information more quickly, effectively and fast.

1.5.1 Observation

This method is the first method that need to be used because observation is the most effective steps in providing this report as indirectly. Any work done can be seen clearly, directly understand the ways and methods used for the plastering work.

1.5.2 Experience

This method are important because it will give some briefing on how the plastering work done. This is because before being allowed to undergo practical training, the students are first exposed to learning theory with the lecture. So, it will help a little knowledge on how the plastering work occur. As a saying goes, "Experience is the best teacher".

1.5.3 Interviews

The knowledge that obtain by observing will be difficult to know deeply on the study work. So, interview method is used to know more

deeply on how the plastering work occur. Interview method are done by asking on people with expert, deep understanding and the people who are directly involved in the plastering work. So that every knowlege or note can be write down with the correct method.

1.5.4 Books

Books are used to obtain accurate information for all the specifications for executing any work that include in plastering work. Books as well as a source of reference for all the information needed in further details.

1.5.5 Electronic Media

Electronic media is the most popular mechanism. This is because, all information can be accessed more quickly than with other methods. Internet plays an important role in finding the information and facts. All information available on the internet must be confirmed first before it is.

1.5.6 Printed Media

Printed media such as newspapers, magazines and drawing plan are act as a reference sources. This is because, a new technology used in the plastering work are oftenly can be seen in printed media such as magazines.

CHAPTER 2

COMPANY BACKGROUND

2.1 Introduction

Majidee (Holdings) Sdn Bhd strives to be an efficient contractor company which is effective and productive in order to achieve the quality standards and customer's satisfaction through the implementation and continual improvement of a Quality Management System.

MS ISO 9001 : 2008

Majidee (Holdings) Sdn. Bhd. expertise is in provision of designing, planning, developing and constructing services in the construction industry. This will be achieved by thorough implementation of objective quality in every function to attain the best offer to customers in terms of cost, time and quality. The quality procedures established shall be constantly monitored and periodically reviewed to determine their suitability and achievement in relation to the company's mission.

2.2 Company History

Majidee (Holdings) Sdn Bhd was incorporated in 1982 as a company specializing in Project Management, Building for Construction, Civil, Mechanical & Electrical Engineering Works.

Majidee (Holdings) Sdn Bhd is registered under Pusat Khidmat Kontraktor (Class A) and also registered under CIDB (G7), 100% wholly owned Bumiputera company in equity, the key corporate and all the management staff.

Over the years, the company has shown the strength by participating and completing government and private projects. The company has a team of dedicated, committed, determine, resolute and professional skilled and semi skilled to realize government liberalization in industrial and economic policy, to provide a more secure foundation for the country's future prosperity.

2.3 Company Profile

Name	: Majidee (Holdings) Sdn. Bhd.
Company No	: 79777-D
Date Of Incorporation	: 4 th January, 1982
Authorized Capital	: RM 10,000,000.00
Paid-Up Capital	: RM 7,500,000.00
Contractor Service Centre	: Class A- 0102 A 93 0323 Kementerian Kerja Raya Malaysia.
Status	: Bumiputera Civil & Building Contractor.
Ministry of Finance	: K.KEW/357-02057984
Lembaga Pembangunan	: CIDB Gred G7

Industri Pembinaan (CIDB) : No. Pendaftaran – 1960706-JH002511

Board Of Directors : 1. Dato’ Hj Dollah bin Hj.Said
(*MANAGING DIRECTOR*)
2. Datin Hjh.Hamidah bt Hj Abdul
Hamid
(*DIRECTOR*)
3. Hj.Aminuddin bin Dato’ Hj.Dollah
(*TECHNICAL DIRECTOR*)

HeadQuarters : Bangunan Majidee, No.40A, Jalan
kebudayaan 6,
Taman Universiti. 81300, Skudai,
Johor.
Tel : Fax : 07-520 8773

Company Secretary : Nuri Abid Management Services
17B-4, Jalan Suria 18, Taman Putera,
81100 Johor Bahru, Johor Darul
Takzim.
Tel : Fax: 07-3341 751

Bankers : Malayan Banking Berhad,
18 & 20, Jalan Perwira 17,
Taman Ungku Tun Aminah,
81300 Skudai, Johor Bahru

CIMB Islamic Bank Berhad,
43-01, Jalan Permas 10/2 Masai,
81750 Johor Bahru, Johor.

CIMB Islamic Bank Berhad
Taman Impian Emas Branch,
2nd Floor No.93A-C, Jalan Sri Impian
1, Taman Impian Emas,

Auditor : 81300 Skudai Johor Darul Takzim.
RHB ISLAMIC BANK BERHAD
No.1, Jalan Setia Tropika 1/30,
Taman Setia Tropika,
81200 Johor Bahru, Johor.

Lawyer : A. Rahman & Associates,
17B, Jalan Suria 18, Taman Putera,
81100 Johor Bahru, Johor Darul
Takzim.
Tel : Fax: 07-3341 751
: Lokman Hanida & Azizah
46-01, Susur Larkin Perdana 2,
Taman Larkin Perdana,
80350 Johor Bahru.

2.4 Company Vision and Missions

2.4.1 VISION

Majidee (Holdings) Sdn Bhd shall be a world-class construction company, innovative and knowledgeable global solution provider.

2.4.2 MISSION

To be a dynamic, productive and resilient enabling sector, supporting sustainable wealth creation and value creation, driven by technologically pervasive, creation and cohesive construction community.

2.5 Organizational Chart

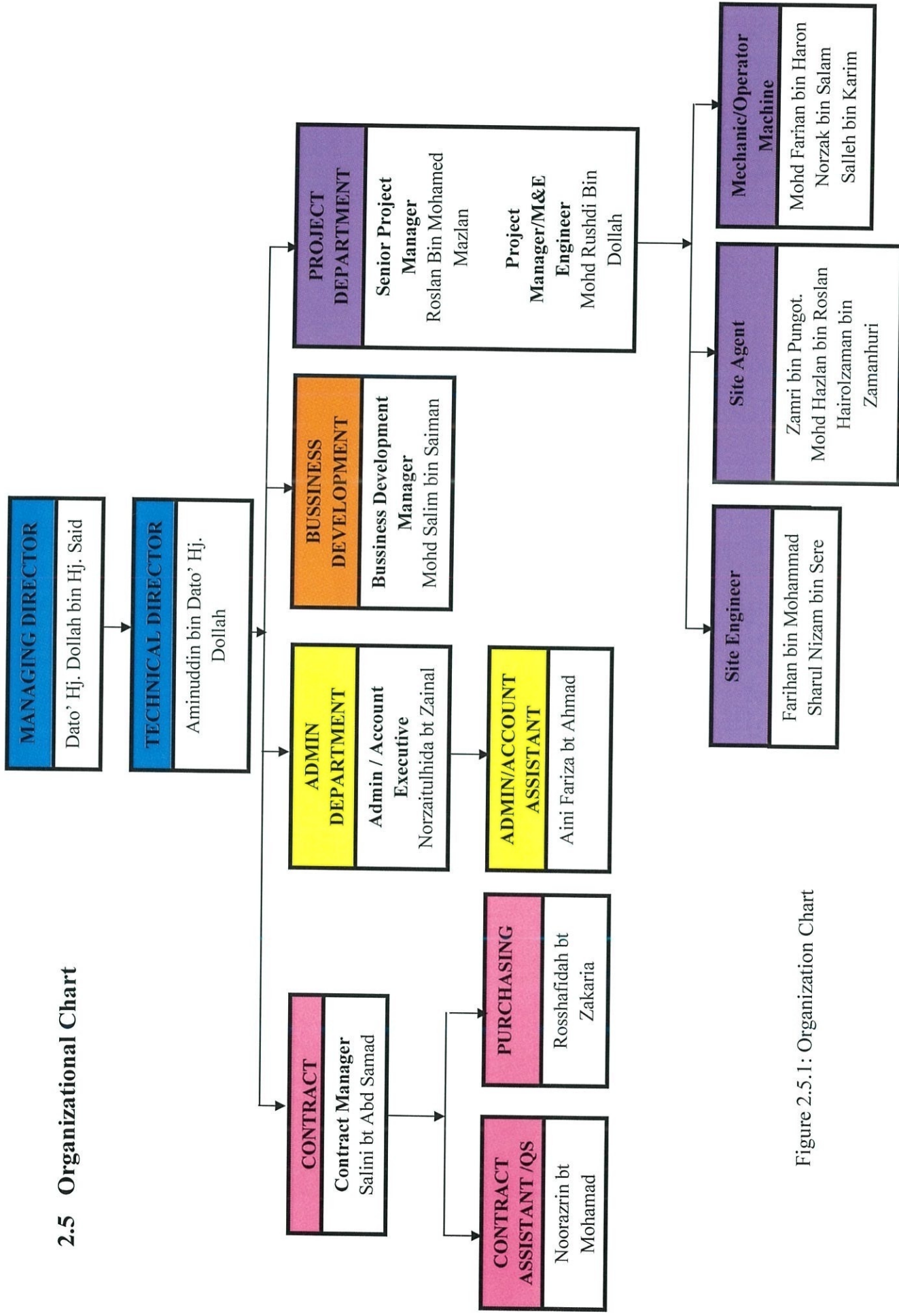


Figure 2.5.1: Organization Chart

2.6 List of Projects

2.6.1 Completed Projects

Table 2.1: List Of Completed Project

<u>NO</u>	<u>DESCRIPTION OF CONTRACT</u>	<u>CONTRACT NO.</u>	<u>NAME OF EMPLOYER</u>	<u>CONTRACT VALUE</u>	<u>DATE OF COMMENCEMENT AND COMPLETION</u>
1	Merekabentuk, membina dan menyiapkan 494 units rumah teres kos rendah dan kerja-kerja yang berkaitan dengannya di PAKR Paya Datuk iii, Alor Gajah, Melaka.	JPN/PAKR/M/2/2001	Jabatan Perumahan Negara	RM 16,855,536.88	12/9/2001 – 15/5/2006
2	Cadangan membina dan menyiapkan Kolej Komuniti Parlimen Bandar Penawar, Mukim Tanjung Surat, Daerah Kota Tinggi, Johor Darul Takzim	KP/BPB/PEM(2)KK (8)/2002	Kementerian Pendidikan Malaysia	RM 12,688,545.00	5/5/2002 – 12/11/2006
3	Pembinaan makmal sains di Sekolah Sukan Bandar Penawar, Kota Tinggi, Johor	JKR/IP/CKP/74/2008	Jabatan Kerja Raya/Dataran Simfoni Sdn Bhd	RM 2,787,835.10	5/5/2008 – 8/12/2009

4	Cadangan membina dan menyiapkan Pejabat Jabatan Pelajaran Negeri Johor, Johor Bahru, Johor Darul Takzim	KP/BP/PEM/115/ 2008	Kementerian Pelajaran Malaysia	RM 35,000,000.00	11/9/2008 – 15/7/2010
5	Cadangan ubahsuai naiktaraf Institut Perguruan Temenggong Ibrahim (IPTI), Johor Bahru, Johor	JKR/PERS/J/04/08	Jabatan Kerja Raya / Dekad Teknologi Sdn Bhd	RM 3,627,346.80	5/5/2009 – 15/3/2010
6	Cadangan pembinaan Ibu Pejabat Jabatan Bomba dan Penyelamat Malaysia Negeri Johor di Mukim Tebrau, Johor Darul Takzim	JKR/IP/CKUB/71/ 2009	Jabatan Kerja Raya	RM 19,844,683.16	17/3/2009 – 18/10/2010

2.6.2 Current Projects

Table 2.2: List Of Current Project

<u>NO</u>	<u>DESCRIPTION OF CONTRACT</u>	<u>CONTRACT NO.</u>	<u>NAME OF EMPLOYER</u>	<u>CONTRACT VALUE</u>	<u>DATE OF COMMENCEMENT AND COMPLETION</u>
1	Cadangan pembangunan untuk penempatan semula penduduk pengerang di lot ptd 4589 dan 4590, mukim pantai timur, Pengerang, Kota Tinggi, Johor Darul Takzim -Package 3 : 33 unit type A, 27 unit type B, 9 unit type C & 27 unit type D	JKR/IP/CPUB/28/ 2012	Tebrau Bay Construction Sdn. Bhd.	RM 5,055,877.20	26/12/2012 – Now
2	Cadangan pembangunan untuk penempatan semula penduduk pengerang di lot ptd 4589 dan 4590, mukim pantai timur, Pengerang, Kota Tinggi, Johor Darul Takzim -Construction of drainage system RCP 600mm, 750mm, 1050mm, 1200mm, 1500mm & UD 600mm, 750mm, 1200mm, 1500mm.	JKR/IP/CPUB/32/ 2013	Tebrau Bay Construction Sdn. Bhd.	RM 7,055,653.45	2/9/2013 – Now

CHAPTER 3

CASE STUDY

3.1 Introduction

As discovered in this studies, plaster is normally applied to cover the brick and any nails layer as internal wall. There are two methods of plastering work which is traditional and pump method.

3.1.1 Plastering in general

Plastering are act as the interior wall or plaster for decorative moldings on ceiling or wall. Plaster provides a solid, seamless surface, retrived June 25, 2013 from <http://www.restorationplastering.com/faq.html>. It may be applied over wire lath, as found in many older homes, as well as over sheetrock. Spackle, or joint compound, is used to cover the taped seams of sheetrocked walls.

3.1.2 The purpose of plastering

- Plastering is design for flexibility which allows for curves and arches.
- Plastering provide durability which is hard and strong surface to provides excellent abrasion resistance resulting in minimum maintenance, even in high-traffic areas. Plaster will not disintegrate if exposed to a small leak, as is the case with spackle or joint compound.
- Plaster eliminates irregularities such as board joints and protruding nails at the brickwall.

3.1.3 Plastering techniques

3.1.4 Manual technique in general

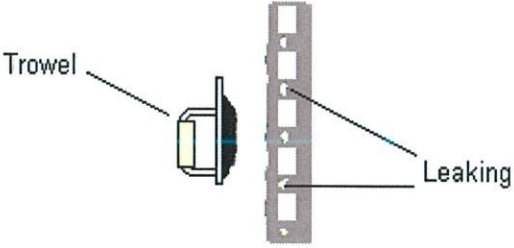
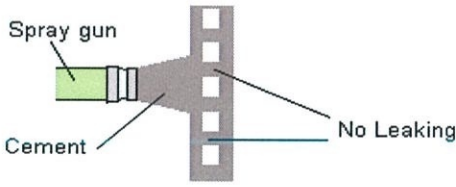
Manual technique also known as traditional technique. This method are basic technique and normally it is used at construction site. This technique use many labor about 8-10 labors Oklahoma Department of Career and Technology Education Stillwater, Oklahoma, (2007).

3.1.5 Pump techniques in general

Pump technique is one of the in situ method for faster the plastering work. This pump technique usually apply for building up to 30 storey. This technique use less labor compare to traditional method about 6 labor but to make the plastering work more faster numbers of labor can be increase Oklahoma Department of Career and Technology Education Stillwater, Oklahoma, (2007).

3.1.6 The difference between plastering using manual and pump techniques

Table 3.1.6.1 : The difference between plastering using manual and pump techniques

Manual Technique	Pump Technique
<p>Traditional manual plastering requires the continual movement of the cement, both prior to and after mixing. Normally this requires either a large number of employees or a relating small area being completed per day. Constantly changing locations also means continual movement of materials and clean-up of the previous locations. Also when manually mixing cement, the final product may not be consistent as desired. These inefficiencies eventually cost you time, money, and possibly customers good-will.</p>	<p>The Spray Plastering Machine only requires a maximum of four workers for set up and operation. This machine allows for operation at a number of locations while construction materials remain at one location. This also allows for more centralised, easier storage of materials, less movement and set up, more consistent mixture and orderly construction sites. Therefore, it saves time and substantially cuts cost by reducing manpower, and the amount of materials wasted.</p>
	
<p>Manual Plastering leads to wall cracking and leaking as this method is unable to entirely penetrate gaps and spaces in brick walls.</p>	<p>This machine is designed with sufficient power to be pumped and sprayed up to 30 stories combined with well designed spray gun that allows for smooth operation, without recoil and jerking actions, and enable cement to be applied evenly, penetrating gaps and spaces.</p>

3.1.7 The benefits of plastering using pump technique

- Better quality of the plastering which eliminates leakage, cracking and peeling off dried plaster
- Reduced on-site labors
- Reduce material wastage
- Shorten working time
- Spray and deliver mixture up to 80 meters
- Low maintenance

3.2 Plastering pump

3.2.1 What is pump technique?

Plastering using pump technique is sprays method to the surfaces of wall. It gives a better quality concrete to the wall and floor and sends concrete from one location to another location. This method normally used for plastering wall for building more than 30 storey. For example, from the ground floor to 30th floor of the building.

3.2.2 The need for plastering using pump techniques

Plaster spraying allows a plasterer to skim a drywall more than five times faster than using a hand float to apply it. The pre-mixed plaster also has the advantage that any surplus can be recycled, almost eliminating waste, and plasterers do not need to haul water and mix the plaster from powder. A drywall skimmed with pre-mixed plaster can be painted in less than 24 hours, depending on the ambient temperature and humidity Oklahoma Department of Career and Technology Education Stillwater, Oklahoma, (2007).

3.2.3 How to plaster using pump technique

3.2.4 Preparing surfaces before plastering

There are four basic steps for applying plaster :

- First, the surface must be prepared to receive the plaster.



Photo 3.1: Surface Prepared For Plastering

- Next, the plaster must be mixed.



Photo 3.2: Mixture process placing

- The third step is to apply the plaster to the prepared surface.



Photo 3.3: Spray to prepared surface

- Finally, the surface of the plaster must be finished to give the desired texture.



Photo 3.4:
Smooth The
Texture

These steps may be repeated for additional coats. This unit focuses on the tools used to prepare the surface, apply the plaster, and finish the plaster.

3.2.5 Materials used





cement	plaster sand		
			
1 bag	2½ wheelbarrows		

Figure 3.1: Ratio



Photo 3.5: Materials Used

3.2.6 Materials handling to maintain their quality and manage costs

- Cement and Lime - Cement and Lime that use for the plastering work need to cover or closed using canvas to avoid any water pass through the cement.



Photo 3.6: Lime



Photo 3.7: Cement



Photo 3.8: Sand

3.2.7 How to mix plastering materials

- 1) Preparation of surface to place the machine



Photo 3.9: Machine Set Up Area

- 2) Put lime into the mixer – To make sure the way of plaster flow through the pipe smoothly



Photo 3.10: Lime Pass Through The Mixture

- 3) Then, put cement, lime, sand and water to the ratio provided 1:2:4.



Photo 3.11: Mix The Ingredient Together

- 4) After the mixture are already mix, open the gap of the mixture to let the mixture pass through to the roundhopper.



Photo 3.12: Separate any unwanted substances for plastering.

- 5) Then, the plastering mixture are flow through the pipe 6m,12m long depend on the distance of plaster area.



Photo 3.13: Plastering work started

3.2.8 How to clean the machine after use

- 1) Put the lime through the mixture to the pipe
- 2) Clean the mixture, round hopper and pipe using water



Photo 3.14: Cleaning Process



Photo 3.15: Cleaning Process



- 3) Put the sponge into the pipe to make sure no left ingredient in the pipe. Then, the sponge will out at the end of the pipe. Three sponge are use.



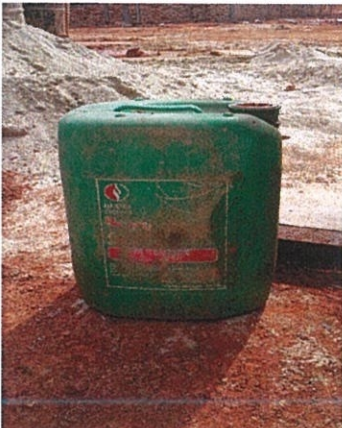





Photo 3.16: Sponge Flow Out




3.2.9 Equipment used





Table 3.2: Equipment Used In Plastering Pump


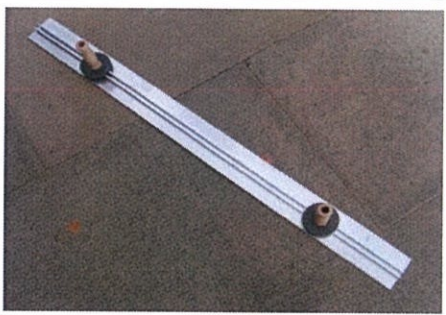


NO	EQUIPMENT	PICTURE	FUNCTION
1	Mixture		<p>Mixer is one of the main accessories of plastering machine. Mixer mixes the cement and other materials become concrete. It blends the mixture evenly and send to round hopper. Round hopper filters the mixture before sending it to plastering machine.</p>
2	Round Hopper		<p>Round Hopper is also one of the main accessories of plastering machine. As mentioned above, round hopper filters the mixture passed by mixer before sending it to plastering machine. This is to prevent any rough material being sent to plastering machine, which will spoil the machine.</p>




3	Gen-Set		To supply electrical towards motor machine.
4	Air Machine		To push the plaster mixture out from the pipe.
5	Diesel		For gen-set use.

6	10Metre Delivery Tube		As a component to deliver the plaster mixture from mixture to wall surface.
7	Pipe clip		As connection between pipe with another pipe.
8	Sponge		As a component to clean the pipe after it is used. Usually it is use when cleaning the machine.

9	Scope		For pick up the sand put into the mixture.
10	Staging set		Act as component for plaster at the higher area.
11	Nozel		The plaster mixture flow out.

12	Air nozel		<p>Air flow out to push the plaster mixture flow out with required pressure.</p>
13	Scratcher		<p>Used to score the surface of a coat of plaster before it sets so that a coat applied over the surface will bond better.</p>
14	Angle block		<p>Used to apply finishes to inside corners.</p>
15	Featheredge		<p>Used to straighten corners in a finish coat or to straighten the surface of a plaster coat.</p>

16	Rod		Used to straighten the surface of a plaster coat, especially on walls.
17	Darby		Used to straighten and flatten fresh coats of plaster.
18	Slicker		Used to flatten fresh coats of plaster can be bents lightly for working surfaces that are not flat.
19	Inside corner tool		Used to finish inside corners.

20	Outside corner tool		Used to finish outside corners.
21	Trowel		Used to apply, spread, shape, and smooth plaster and similar plastic materials.
22	Floats		Used to compress and open the surface of plaster.

3.3 Health and safety issues for plastering work using pump technique

Table 3.3: Health and Safety Issues

TAKS	HAZARD AND RISK	RISK CONTROL MEASURES
Entry to site	-Entry to unsafe areas -Movement of site personnel vehicles, plant and equipment	-Training of all employee use vehicle in site and know right way to use.
Unloading equipment	-Being stuck by equipment	-Training employee in manual handling.
	-Crush hand	-Use of PPE such as gloves.
Setting up	-Crush hand	-Use of PPE such as gloves.
	-Manual handling injuries	-Training employee in manual handling techniques.
Plaster at higher area	-Falls from staging	-Training employee to use correct procedure of staging.
	-Back shoulder injuries	-Training employee in correct manual handling.
	-Falls from platforms	-Training employee in the correct use on platform. Platform must be set up on flat surface.
	-Employee hit by falling object	-Ensure materials are stacked in clear area. Training employee to use PPE equipment such as hard hats and safety glasses.
Trowelling	-Back, shoulder and neck injuries	-Employee need to take a few minute rest and muscle stretching when required.
	-Falls from staging	-Training employee to use correct procedure of staging.
	-Falls from platforms	-Training employee in the correct use on platform. Platform must be set up on flat surface.
Plastering work	-Damaging effects of dust inhalation	-Training employee to use PPE equipment such as dust mask. -Ensure there are extraction areas for dust to flow out from building.
	-Eyes injuries	-Training employee to use safety glasses.

3.4 Photos

Exterior Surface



Photo 3.17: Front Elevation



Photo 3.18: Rear Elevation



Photo 3.19: Right Elevation



Photo 3.20: Left Elevation

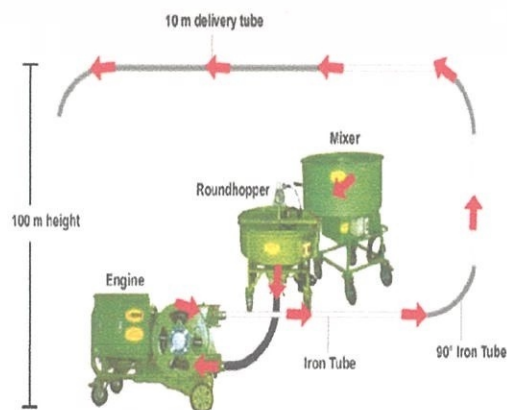


Figure 3.2:
Process Of Plastering
Using Pump

Interior Surface



Photo 3.21: Living Room



Photo 3.22: Master Bedroom



Photo 3.23: Toilet



Photo 3.24: Bedroom 3



Photo 3.25: Kitchen



Photo 3.26: Porch

CHAPTER 4

METHOD STATEMENT

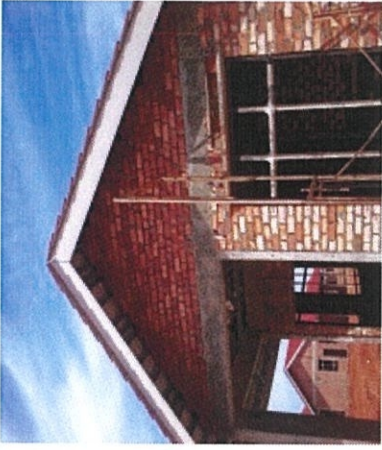
METHOD STATEMENT : PLASTERING USING PUMP METHOD

PROJECT : CADANGAN PEMBANGUNAN UNTUK
PENEMPATAN SEMULA PENDUDUK PENERANG DI
LOT PTD 4589 DAN 4590, MUKIM PANTAI TIMUR,
PENERANG, KOTA TINGGI, JOHOR DARUL TAKZIM

PREPARED BY : MUHAMMAD HAZWAN B. MIDEN

PAGE NO : 01

DATE : 22 / 9 / 2013


NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
1	Preparation of plasterer area	<ol style="list-style-type: none"> 1. Clean the plasterer area. 2. Make sure there are no barrier at the wall that can disturb the plastering work. 		- Scope	-2 semi skilled labor clean the wall area.	1 day

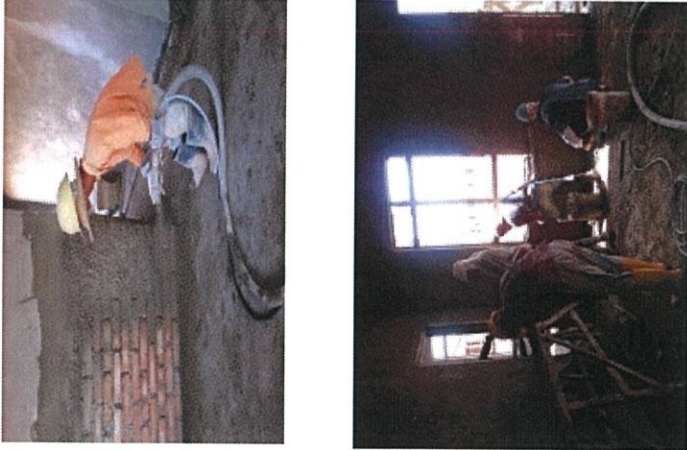
PROJECT : CADANGAN PEMBANGUNAN UNTUK
 PENEMPATAN SEMULA PENDUDUK PENERANG DI
 LOT PTD 4589 DAN 4590, MUKIM PANTAI TIMUR,
 PENERANG, KOTA TINGGI, JOHOR DARUL TAKZIM

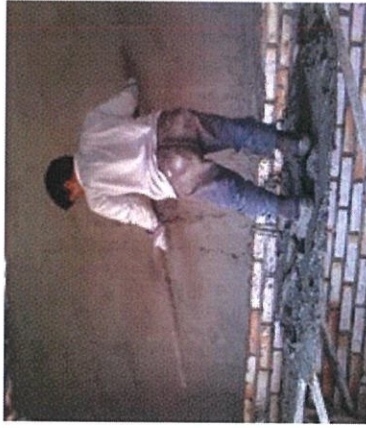

PREPARED BY : MUHAMMAD HAZWAN B. MIDEN


PAGE NO : 02

DATE : 22 / 9 / 2013

NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
2	Mix the plaster	<ol style="list-style-type: none"> 1. Mix your plaster according the instructions on the bag. 2. Always add the plaster to the water and use a clean mixing bucket. 3. A paddle accessory fitted to a corded electric drill is the best method of mixing. 		<ul style="list-style-type: none"> - Cement - Lime - Water - Sand - Scope 	<ul style="list-style-type: none"> -2 skilled labor in handling the machine 	5 minutes

NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
3	Apply The Base Coat	<ol style="list-style-type: none"> 1. Spray the plaster mixture to brickwall. Working from the bottom of the wall. Use smooth strokes to press the plaster onto the wall. 2. Work over the whole area aiming to apply a base coat 3. This coat should be around 2mm thick. 		- Spray nozel	<ul style="list-style-type: none"> -1 site supervisor -2 skilled labor -6 semi skilled labor 	1 day

NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
4	Smooth The Surface	<ol style="list-style-type: none"> 1. Clean around the edges of the wall with a wet paintbrush to remove lumps and lines of plaster that are on the ceiling or adjacent walls. 2. The next stage is to level and smooth the surface but this can only be done when the plaster has hardened slightly but is still pliable. 3. Use your trowel at a very shallow angle to the wall and work over the surface smoothing the surface. 	 	- Rod	-2 labor smooth the surface -4 semi-skilled labor	1 day

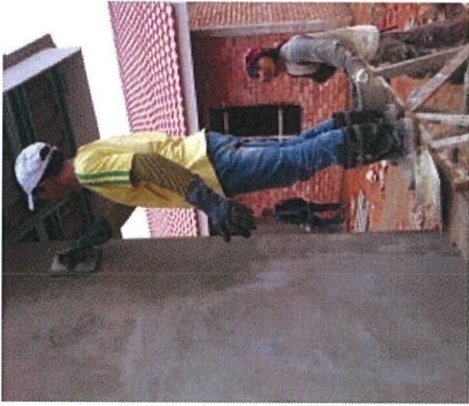
NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
5	Drying And Polishing	<ol style="list-style-type: none"> 1. Leave the plaster to dry once more 2. Plaster can be polished. Wet the face of your trowel and flick water onto the wall with a large paintbrush. 3. The idea is to provide just enough lubrication for your trowel to float over the surface and fill tiny holes and imperfections. 		<ul style="list-style-type: none"> -Trowel -Floats 	<ul style="list-style-type: none"> -1 site supervisor -2 polishing labor -4 semi-skilled labor 	1 day

PROJECT : CADANGAN PEMBANGUNAN UNTUK
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PREPARED BY : MUHAMMAD HAZWAN B. MIDEN

PAGE NO : 06

DATE : 22 / 9 / 2013

NO.	OPERATION	METHOD	SEQUENTIAL/DIAGRAM	PLANT AND EQUIPMENT	MAN POWER	DURATION
		<ol style="list-style-type: none"> 4. Work in regular sweeping strokes and finish with long continuous strokes across the wall. 5. Wash your mixing board and tools as soon as you've finished work. 6. Don't keep opened plaster bags for more than a couple of weeks. 				

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

As a conclusion, plastering work are act as a finishes of wall to cover the brickwall to make the wall look smooth. There are two method on how to do plastering work which is traditional method and pump method that use machine as a mechanism for the pump to operate. For instance, plastering using pump is one of the IBS that use in construction. This pump are use to faster the plastering process. Other than that, this method are use to reduce the wastage from plastering work compared to traditional method. It is also very economical and reduce the labor. The process are not easy to be done but the skilled labor are needed to handling and operate the pump as to make sure the plastering process handling in efficient way. All employers must be resolute in doing the commandments and the laws relating to the safety and health without taking lightly the things that can lead to accidents and lead to the deaths of its employees. Safety and health is a very important thing in everyday life, so that more perfect life with no bad accidents occur without you knowing.

5.2 Recommendation

After making a case study, I have learned a lot about the plastering using pump. In construction, there are many ways can be think on how to settle and faster the project to complete before the time to handing over the project. I have learned on how to set up a proper pump machine before plastering work are started. In my opinion, plastering using pump is very economic and efficient because it can save labor, reduce wastage and shorter the construction period. This method need to be spread its uses in construction industries.

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Technology Education Stillwater, Oklahoma.

APPENDIX

商立

商立機械維修貿易有限公司 SAN LEE ENGINEERING TRADING SDN. BHD.

(908050 - X)

No. 37, Jalan Rambutan, Taman Wangi, 83700 Yong Peng, Johor

No. 106, Jalan Bistari 1, Taman Industri Jaya, 81300 Skudai, Johor

Email Address: sanleetrading@yahoo.com

Tel:

F/P No:

Fax: 07-512 6882

TO

Majidee (Holdings) Sdn. Bhd**DELIVERY ORDER**

Rosen > farha pls semak bng pakej ✓

No. : SL 0243

PROJECT

96 Unit Banglo, Mukim Pantai Timun, Pengerang, Tohor

DATE

26/6/2013

TEL

TERMS

30 Days

ATTN

P/O NO

161/12**MONTHLY RENTAL FOR ONE SET OF PLASTERING MACHINE**Start Rental Period Date: 27/6/2013

NO	DESCRIPTION	RENTAL QTY	CHECKING	SIGNATURE	FULL REPLACEMENT VALUE (RM)
1	Main Engine 5HP	1 unit			30,000.00 / unit
2	Roundhopper With Vibrating Motor 1HP	1 unit			6,000.00 / unit
3	Mixer 3HP	1 unit			7,500.00 / unit
4	Air Compressor	1 unit			3,000.00 / unit
5	Air Tube	1 roll			300.00 / roll
6	Spray Gun	1 set			500.00 / set
7	10M Delivery Tube	1 pc			850.00 / pc
8	5M Delivery Tube	1 pc			400.00 / pc
9	3M Iron Tube	20 pcs			80.00 / pc
10	2M Iron Tube	2 pcs			60.00 / pc
11	45 Degree Iron Tube	2 pcs			80.00 / pc
12	90 Degree Iron Tube	2 pcs			80.00 / pc
13	Hopper Tube 2M	1 pc			650.00 / pc
14	Electrical Wires	1 roll			450.00 / roll
15	Electrical Box	1 unit			5,000.00 / unit
16	Retaining Ring	26 pcs			60.00 / pc
17	Rubber Jacket	26 pcs			3.00 / pc

Remarks:

< Own Collection >

for SAN LEE ENGINEERING TRADING SDN. BHD.

GOODS RECEIVED IN GOOD ORDER & CONDITION
(COMPANY'S CHOP & SIGNATURE)