



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

PILING TEST

**Prepared by:
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2019222334**



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FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING**

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(PERAK)**

JANUARY 2021

It is recommended that the report of this practical training provided

By

MUHAMMAD ZIKRY MOHD SABRI

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entitled

PILING TEST

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

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STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at CHEONG CONSTRUCTION & CO for duration of 20 weeks starting from 6 September 2020 and ended on 7 January 2020. 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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I'd want to express my gratitude to UITM for offering me with this course so that I may have a better understanding of the real-world working environment. This hands-on training has allowed me to get a taste of what it's like to work in this section. The information I've gained from this practical training will be put to the best possible use.

Finally, I'd want to express my gratitude to everyone who has assisted me thus far, particularly my friends. There may have been times when they had to put up with my illiteracy. My friends, on the other hand, are quite helpful when I need assistance with my report, and I am grateful to have such wonderful pals.

ABSTRACT

The technique and planning, as well as the equipment and materials used in the piling test, are briefly described in this report. Engineers, site supervisors, and skilled labourers are all involved in the piling test process. The types of equipment utilised during the piling operation are briefly described in this paper. Several issues arose during the procedure, and they were all identified. This study also includes some recommendations for resolving the issues that occurred.

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CHAPTER 1.0

INTRODUCTION

1.1 Background of study

Foundation are the most important element in building construction. Therefore, the building must have a strong foundation in order to prevent in from collapse. The suitable way is to put pile below the building in order to make that pile as load carrier. The pile will transfer the load of the building onto the harder layer of soil underground.

There are three types of pile foundations according to their construction styles which are driven piles, cast-in-situ piles, and driven and cast-in-situ piles. Firstly , driven pile. Driven pile foundations can be crafted from concrete, metal or timber. These piles are prefabricated earlier than setting at the development site. When driven piles are manufactured from concrete, they're precast. These piles are driven by using a pile hammer. When those piles are pushed into the granular soils, they displace the same extent of soil. This enables in compaction of soil across the aspects of piles and consequences withinside the densification of soil. The piles which compact the soil adjoining to it's also referred to as as compaction pile. This compaction of soil will increase its bearing potential. Saturated silty soils and cohesive soils have bad drainage capability. Thus those soils aren't compacted while pushed piles are drilled thru it. The water should be tired for the soil to be compacted. Thus stresses are evolved adjoining to the piles should be borne via way of means of pore water only.

Secondly, Cast-in-situ piles are concrete pile. These piles are built by penetrating gaps within the ground to the specified profundity and after that filling the gap with concrete.

Fortifications are moreover utilized within the concrete as per the necessities. These piles are of little diameter compared to the drilled piers. Cast-in-situ piles are straight bored piles or with one or more bulbs at intervals are casted. The piles with one or more bulbs are called as under-reamed piles.

Lastly, Driven and cast-in-situ piles have the points of interest of both driven and cast-in-situ piles. The method of installing a driven and cast-in-situ pile is as follows: A steel shell of breadth of pile is driven into the ground with the help of a mandrel embedded into the shell. After driving the shell, the mandrel is expelled and concrete is poured within the shell. The shell is made of layered and strengthened lean sheet steel or channels. The piles of this sort are called a shell sort piles. The shell-less sort is shaped by pulling back the shell whereas the concrete is being set. In both the sorts of heaps the foot of the shell is closed with a cone shaped tip which can be isolated from the shell. By driving the concrete out of the shell an extended bulb may be shaped in both the sorts of heaps. Franki heaps are of this sort. In a few cases the shell will be cleared out in part and the tube is concreted. This sort of heap is exceptionally much utilized while piling over the water.

However, the aim of this project is to discover the driven piles method in the construction

1.2 Objectives

There are a few objectives that needed to be fulfilled during this practical training, the objectives are as follow:

- a) To explain the pile test method
- b) To identify the equipment and machinery that a required in test pile works
- c) To determine the problem and solution of piling test

1.3 Scope of study

The practical study has been carried out at Taman Pusing Delima Fasa 2 which is located in Pusing, 13550 Pusing, Perak. The scope of study focuses on record the result of the piling test. Pile set is used to confirm pile driving requirement. When the precast concrete pile seems to have driven into a hard rock and stop driving down, pile set can be taken. In driven piles, the allowable set is 20mm/10 blows from the table. If the pile set met the requirement, then the piling work for the point can be considered done.

1.4 Methods of study

a) Observation

One of the method is observing. By using this method, the person can see in detail during the process of piling. Then after that, the person can take initiative to write down some note based what on their have seen. It also will help a person to gain more knowledge about the new experience of realistic work environment.

b) Interview

During this method, a person must ask the other person who has more experience based on the job scope. For example, the site supervisor. With their help, they will provide more detail about the job scope. The supervisor usually will give a simple task to see if that person keep in his mind or not about the topic that they have been interviewing .

c) Document reviews

Reviewing documents have been an efficient way of getting information required for the study such as piling test. The best document for this job scope is the previous piling test result. This will provide more knowledge when the person seriously study it.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of company

Cheong Construction & Co. is a construction company in Perak, Malaysia. The company is a small-sized enterprise, with number of employees fewer than 50. Cheong Construction & Co. is also a subsidiary of Kanglian Development Sdn. Bhd., a real estate developer that has been in the construction industry for 52 years. Therefore, on some occasions, Cheong Construction & Co. is known as a developer in most of Kanglian Development construction sites, other than as a building contractor. Both of the companies share the same corporate office that is located in Ipoh, Perak



Figure 1 : company logo

2.2 Company profile

Among other things, home gives security, control, belonging, identity, and privacy. While playing the role as a developer on construction sites, the main objective of Cheong Construction & Co. is to enable everyone to own a house of his or her dream. The company has been in the industry for 52 years and always stayed true to its mission and delivered on its promises. Ever since its incorporation, the company has involved in many housing projects located in Perak. One of its notable projects is Taman Bunga Raya, located at Tapah Town Centre along Jalan Pahang, 1 km to Tapah Toll. Until today, the company is still active in the construction industry and there are still many ongoing housing projects located in Perak which are Taman Pusing Delima 2, Pusing, Taman Bunga Raya (Phase 11A & 11B), Tapah, Taman Bunga Raya (Phase 10B) Tapah and The Gulf Village, Botani, Ipoh.

2.3 Company organization chart

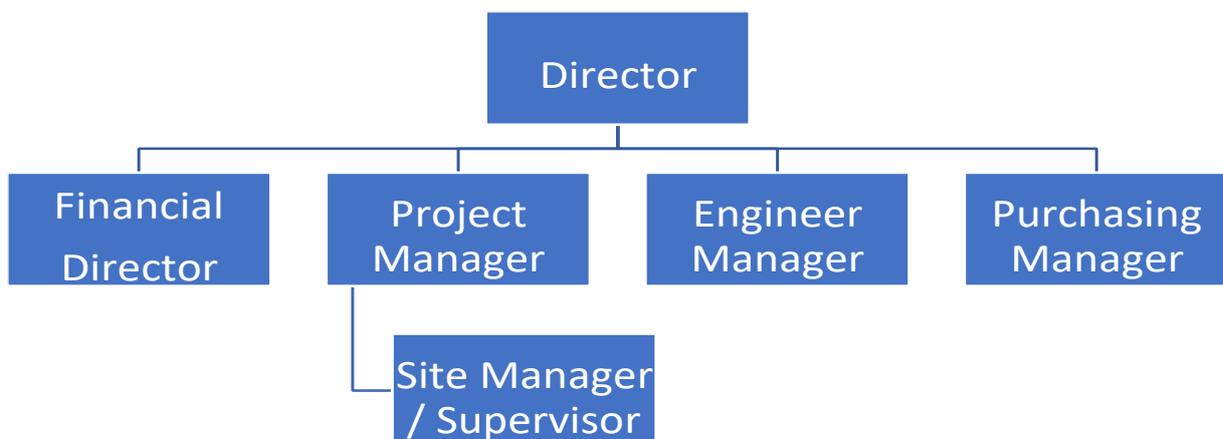


Figure 2: organization chart

2.4 List of Project

2.4.1 Completed Projects

Project title	Owner	Main contractor	Landscape consultant	Completion date
Taman Bunga Raya Tapah phases 11	-	Kanglian Development Sdn Bhd	-	2017
Taman Bunga Raya Tapah phases 10	-	Kanglian Development Sdn Bhd	-	2014

CASE STUDY

3.1 INTRODUCTION TO CASE STUDY

Establishment of a building can be categorized into two sorts, which are shallow establishment and profound establishment. At Pusing development location, as the land is filled and arranged through earthworks, subsequently the soil bearing capacity is exceptionally low and deficiently to carry the buildings stack. Hence, profound establishment is chosen for the houses to be built. As for the piling method, driven piles is utilized. Working beneath Cheong Construction & Co. This piling work begin on 5 October 2021 and ended on 10 November 2021, it take about a 35 day to complete 373 piling point.

3.2. To explain the pile test method

There are a few step need to be done to complete the pile test.

The first step to complete the pile test is by doing the site clearance. This action is necessary because there must be no obstacle on that area. The area will be clearing by using excavator and lorry. After that, the second step is to mark the point. After the clean-up, the workers must mark the point that need to be pilled.

Next, third step is marking the pile rode by using a paint. It will be marking every 2 feet. The purpose is to make it ease when reding the blow. The fourth step are start blowing the rode into the ground. Pile rode will be lift first using a chain then it will start blowing until it be penetrated deep inside the ground. Every 2 feet it goes in, the blow will be recorded.

Then, fifth step is to make a joint. When the first pile rod fully penetrates the ground, the second pile will add on top of the first one. Welding process will take place in the step. After the rod not longer be able to penetrate the ground, it will be called SET. When it already set, the data will be collected in the piling form. The information that need to be record in the piling form are included number of blow, date, time, length of pile and plot number.

3.3. To identify the equipment and machinery that a required in test pile works

1. the excavator



To remove the obstacle that will disturbing the pile test process.

2. A lorry



A lorry will be used to carry all the dirt and tree trunk to the other area. The bigger the lorry, the faster the process.

3. piling machine



A machine that been use to penetrate the pile into the ground.

3.4 To determine the problem and solution of piling test

The problem that has been occurred during this process is piles a penetrate deeper than estimated. This was cause because low resistance of soil. To much power when blowing the pile also can be the caused of the problem. The solution for this problem is checking the drive system performance and restrike capacity, using dynamic measurement.

4.0 CONCLUSION

In conclusion, the piling report on Taman Pusing Delima can provide a accurate information about the installation method. The pile used as a medium to transfer the load from building into the ground. This is because deep into the ground has a very hard layer of soil that can

endure a lot of loads. As suggestion, the driving process of piling need to choose the tool and appropriate type to ensure the piling test are done a specification set.

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