

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

**METHODS OF STORE
CONSTRUCTIONS**

**Prepared by:
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BIN MAT RADZI
2019282746**



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(PERAK)**

AUGUST 2021

It is recommended that the report of this practical training provided

By

**MUHAMMAD DANISH IMTIYAZ BIN MAT RADZI
2019282746**

entitled

Methods of Store Construction

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

Report Supervisor : En. Ezzat Fahmi Bin Ahmad

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FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
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AUGUST 2021

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 Ipoh City Council for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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Name : Muhammad Danish Imtiyaz Bin Mat Radzi

UiTM ID No : 2019282746

Date : 23/8/2021

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First, I would like to express my deepest gratitude to UiTM Seri Iskandar, Perak for providing industrial training for the students. Indirectly, it provides an opportunity for students to study while experiencing the experience of working in a company.

Besides that, I would also like to express my gratitude and appreciation for being accepted by Ipoh City Council as an industrial trainee. Working with them is very exciting because all the training and tutoring is given professionally. Therefore, it is easy for me to gain knowledge here indefinitely. Their assistance is very friendly regardless of rank or position within this organization. They are willing to share their experiences and knowledge with me while working in this company.

I would also like to thank Director of Engineering Ipoh City Council, Bahagian Kerja & Bina (K&B), Mr. Arif Bin Mohd Zainuddin, and Mrs. Nur Aifa Fariyah Binti Mad Nor (Assistant Director of Engineering (Building)), the industry training supervisor, for providing guidance throughout the industrial training at Ipoh City Council. They taught me diligently and often shared his knowledge throughout his career in engineering. I would also like to thank other staffs such as to Mr. Roslay (Senior Assistant Engineer), Mr. Anuar (Assistant Engineer), Mr. Zahid (Surveyor), Mrs. Erna (Assistant Engineer), Mrs. Diana (Assistant Engineer), Mrs. Hanim (Assistant Engineer), Mrs. Fatimah (Assistant Engineer) and all staffs for giving me a lot of guidance.

Finally, yet importantly, I would like to thank Sir Ezzat Fahmi bin Ahmad for assessing my performance here as a claim for the faculty requirement in order to complete my diploma requirement.

ABSTRACT

Industry training is a mandatory requirement for students in certain programs at all levels of higher education at the Institution of Higher Education (IPT). Ipoh City Council is the place for industrial training to be conducted from 23 August 2021 to 7 January 2022. Students have been given the opportunity to undergo industrial training in the Management section. During the training period, students were taken to the construction site to see for themselves the work being done in conjunction with strengthening existing knowledge. In addition, disclosures can also add new knowledge. The performance and level of student skills will be evaluated by the supervisor responsible for the logbook.

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CHAPTER 1.0

INTRODUCTION

1.1 Background of Study

The purpose of this research is to investigate the methods of the store buildings. This store used a pad foundation as a form that supported the load such as structural columns and others. Other than that, pad foundation is a square or rectangular concrete that is spread to the bearing of the layer of soil and rock below. My company choose pad foundation over strip foundation because pad foundation sustains concentrated loads from a single point load such as structural columns and strip is to support a line of loads such as load bearing walls. The advantages of pad foundation are the shallow pad foundation requires less excavation. My company want to less the excavation because this site is at the park, so we want to minimize the soil that needs to be excavated. Furthermore, the size and the shape too can be varied depending on site condition. The pad foundation too is economic. There are many types of store construction, however the aim of this is to discover the construction of stores that use pad foundation at a conjectured area in Malaysia.

1.2 Objectives

1. To investigate the methods of constructions store building.
2. To identify the types of machinery and equipment used in the construction of store building.

1.3 Scope of Study

This site is located at Taman Dr. Seenivasagam, Ipoh, Perak. Basically, this store building wants to build because of the lawn mower and blower at the store. Other than that, the study focused on the methods of the building and the difference of the foundation that are used.

1.4 Methods of Study

1. Observation

For the observation I need to go at the site to observe what the contractor is doing to build the store for the lawn mower and blower. From the observation too I am clearly understanding what is going through at the site and what are the reasons contractors are doing that. When we observe the site, we capture the photos or video with the smartphone because we can refer to it if we do not understand.

2. Interview

At the site, we too can have an unstructured interview with the contractor to learn and to ask if we do not understand the reason why the contractor is using those materials instead of others, by that we can learn something indirectly at the site. Other than that, we too have a discussion between Quantity Surveyor, Contractors, Electrician and others at the site to solve the problems that are happening while building the store.

3. Document reviews

With the document reviews I am completely more understanding about the project that is going through it because with the document reviews as an example drawing plan, I can see the part of the building that I can't imagine.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of Company

In general, the Ipoh City Council as the local authority, is a Corporate Body established under the Local Government Act 1976 (Act 171), being the body responsible for managing the Ipoh City area based on local interest, as well as a local planning authority under the Town and Country Planning Act 1976 (Act 172); MBI is directly tasked by Law to formulate and implement development planning policies based on centralised locality in accordance to the policies set by the Government.

Currently, the boundary of the Council covers an area of 643 square kilometers with a population of over 720,000 people. As the state capital of Perak, Ipoh serves as the centre of administration, commerce, sports, finance, politics, religion and education. Now under the leadership of the Mayor, the Ipoh City Council continues its effort to transform the city into a dynamic and distinguished city.

2.2 Company Profile

Firm	Ipoh City Council
Address	JALAN SULTAN ABDUL JALIL, GREENTOWN, 30405, IPOH, PERAK DARUL RIDZUAN.
Contact	05-2083376
Fax	05-2083553
Web	www.mbi.gov.my

Table 2.1 Company Profile

2.2.1 Company Logo



Figure 2.1: Ipoh City Council Logo

	<p>The two trees on both sides symbolise the Ipoh trees, the origin of the name of the city.</p>
	<p>Two tigers on both sides are in accordance with the Federal Regalia.</p>
	<p>The undulating yellow platform at the bottom of the logo symbolizes the limestone hills which are abundant in the Ipoh area.</p>

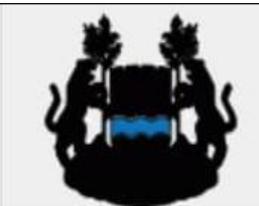
	<p>The undulating fortress at the top (middle) symbolizes the Dato Laksamana Fort, who is believed to be the first man to open up a settlement in Ipoh.</p>
	<p>The moon and star symbolize Islam as the official religion.</p>
	<p>The blue undulating horizontal stripe symbolizes the Kinta River which separates Ipoh New Town and Ipoh Old Town.</p>
	<p>The three vertical stripes at the bottom (middle) symbolize the State flag.</p>

Table 2.2: Characteristics of Ipoh City Council Logo

2.2.2 Mission

"Leading Strategic and Innovative Urban Governance Towards a Conducive and Sustainable City for the Well -Being of Urban Citizens"

2.2.3 Vision

"Ipoh Clean, Green and Progressive"

2.2.4 Function

- Development Planning and Control
- Building, Advertisements and Sign Boards Control
- City Rubbish Collection Services and Hygiene and Sanitation Control
- Businesses and Hawkers Licensing and Control
- Streets Building and Maintenance
- Traffic Management
- Provision of Public Amenities
- Improving and upgrading new/traditional/systematic villages by providing basic amenities

2.2.5 List of Department

- Community and Social Services Department
- Public Health and Urban Services Department
- Licensing and Enforcement Department
- Town Planning Department
- Public Works Department
- Building Control Department
- Landscape and Parks Department
- Management Services Department
- Treasury Department
- Valuation and Taxation Department
- Internal Audit Unit
- Legal Unit
- Corporate and Public Complaints Unit
- One Stop Centre (OSC) Unit
- Commissioner Of Buildings (COB) Unit
- Information Technology Unit
- UTC Administrative Unit
- Quantity Surveying Unit

2.3 Company Organization Chart

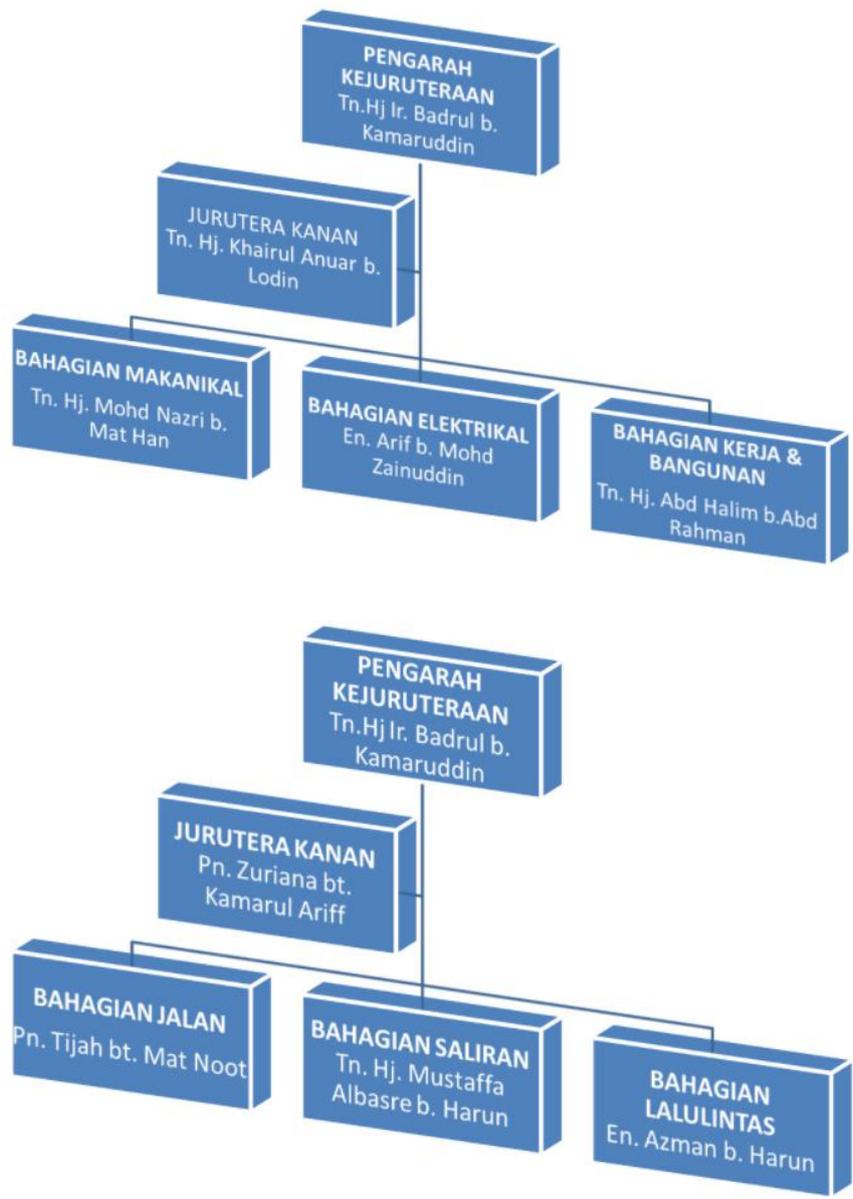


Figure 2.2: Organization Chart of Engineering Department Ipoh City Council

2.4 List of Projects

2.4.1 Completed Projects

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Cadangan Pembangunan Semula Pasar Ayam Dan Pakir Bertingkat Di Ipoh, Perak.	RM 13,194,684.30	10.02.2014	31.1.2017	24 Months	Ipoh City Council
2	Tender Reka Dan Bina (Design & Build) Untuk Kerja-Kerja Awam Pengubahsuaian Tingkat 3 & 4 Bangunan Pasar Ipoh Bagi Perlaksanaan Pusat Transformasi Bandar (UTC) Negeri Perak.	RM 19,748,567.80	22.10.2012	30.11.2012	5 Weeks	Ipoh City Council
3	Tender Reka Dan Bina (Design & Build) Untuk Kerja-Kerja Mekanikal & Elektrikal Pengubahsuaian Tingkat 3 & 4 Bangunan Pasar Ipoh Bagi Perlaksanaan Pusat Transformasi Bandar (UTC) Negeri Perak.	RM 17,889,128.00	29.10.2012	7.12.2012	5 Weeks	Ipoh City Council
4	Cadangan Pembangunan Semula Pasar Tanjung Rambutan, Ipoh.	RM 7,270,278.08	01.7.2011	27.12.2012	78 Weeks	Ipoh City Council

Table 2.3 Completed Projects

2.4.2 Project in Progress

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1	Cadangan Menaiktaraf Laluan Pejalan Kaki Berbumbung, Parkir Bas dan Kaunter Bayaran Di Majlis Bandaraya Ipoh.	RM 550,000.00	1.9.2021	19.1.2022	20 Weeks	Ipoh City Council
2	Cadangan Kerja Mengecat Bangunan Rumah Pangsa Bercham, Ipoh, Perak.	RM 200,000.00	4.8.2021	29.9.2021	8 Weeks	Ipoh City Council
3	Cadangan Membina Tandas Awam dan Gerai di Pasar Falim, Ipoh.	RM 192,635.00	28.7.2021	15.12.2021	20 Weeks	Ipoh City Council

Table 2.4 Project in Progress

CHAPTER 3.0

CASE STUDY (STORE CONSTRUCTIONS METHOD)

2.1 Introduction to Case Study

The project for the case study I did was a project of building a store to keep and wash a lawn mower and blower equipment that are used to clean the garden and park areas. This project value is RM 186,645.00 and the estimated completion date for this project is on 24.11.2021. Other than that, this store is located at the left side back at the park. The building next to this store is a management building for Taman Dr. Seenivasagam. Behind this store there was a parking lot and there was a Child Care Center Wallercourt. For this store it is one floor storey and next to the store will be built a place to wash the lawn mower. This project was just started last September. Now the project is still in progress and on the last site visit that I went to, the floor for the store and washing place is done and for the store column has been established.

3.2 Subtopic (To investigate the methods of construction store building)

The method that is used for the store building is like a normal type of building. Initially, for preliminary work the contractor installed a metal hoarding barrier fence with a height of 1.5 m including other equipment around the construction site to ensure the safety of the public because the project site is open because it is in a recreational park. After that, the contractor makes the site cleaning and completion work after the work is completed. For store building work, the contractor makes the excavation work and receives the footing ground beam and RC column. All three must be in concrete using a grade 30 concrete mix. Furthermore, the contractor excavates the soil using a backhoe in that area that has been marked initially.



Figure 3.1 Contractor marks the area to be excavate

After that, the contractor builds a formwork using wood to build a formwork for the pad foundation. Therefore, after all the pad foundation hardens the contractor can make a slab for the store building.



Figure 3.2 The contractor has done excavated the soil

To do a slab we need to do the slump test to make sure the concrete is suitable and in the good grade and after that we put the BRC Steel before pouring the concrete to make the slab. The floor concrete we use BRC A10 with a thickness of 150mm by using grade 30 concrete mix. After that, the contractor installs the formwork for the column and builds a wall. When the contractor builds a wall for the store the contractor ties a string from a column to another column to make it the same level as when building a wall.



Figure 3.3 Column has been raised

Other than that, after the contractor has established the wall, the contractor builds a formwork for the beam and builds a roof frame.



Figure 3.4 Beam has been installed

The contractor built a roof frame using a channel metal and the roof is using a metal deck. After all of this, the electrician can enter the building to put the electric pipes and the wire for the lamp and exhaust fan for the store. Moreover, after finishing it the contractor mixes the cement with the plaster to plaster the wall. The contractor plasters the cement with the scope and after that the contractor smooths it out with a water soaked- sponge.



Figure 3.5 The contractor plaster the wall

After all, has done, the contractor installs the roller shutter and aluminum door for the store.



Figure 3.6 Roller shutter has been installed

Other than that, after the work of building the store has been completed the contractor has to do the road construction work. For road construction work the contractor paved 75mm thick layer of Asphaltic Concrete Wearing Course (ACW 14) with 8-ton rolling machine.



Figure 3.7 Contractor build the road to the store

When the road is ready, the contractor can start the work of painting the walls of the store.



Figure 3.8 Store has been painted

3.3 Subtopic (To know the equipment and machineries that are used)

The equipment and machinery are very important when doing a project. The equipment and machinery can make our progress easier and faster without using the equipment and machinery. For example, excavate the soil using a backhoe and excavate the soil using a hoe and it is faster and easier using a backhoe. For this project the equipment and machinery that we used first is backhoe. The use of the backhoe is to excavate the soil and to put and do a pad foundation. With the backhoe we excavate the eight points that the contractors have marked to do a pad foundation.



Figure 3.9 Backhoe

Other than that, we use the wood to do the formwork for the pad foundation, slab, and beam for this building. For the slab we use the BRC Steel to make the slab stronger and do not crack. It is because for this store we keep the lawn mower and blower and the item is heavy so we don't want the slab to crack. Furthermore, we use the chainsaw to cut the wood to make a formwork.



CHAPTER 4.0

CONCLUSION

It is a pleasure that the trainee got the chance to enrol for this program in Ipoh City Council for 20 weeks. The trainee learned and understood the company's role and the company's contribution to the society through the project. During the period of attachment, the trainee had conducted himself well and has been exposed to the services and maintenance related projects such as repairing handrail, replacement water tank, roof installation, roof waterproofing and others. Exposure to technical jobs by the engineers were meaningful for the trainee to prepare for a better future.

Besides, this training helps the trainee to become more confident in service and maintenance as well as infrastructure after graduation. Although the training period was short, nevertheless, the trainee got to enhance competency and competitiveness in the service and maintenance field. The problem encountered while building this store is the relatively narrow space because this store is in the garden and the landscaping party told us in order to reduce the grassy area so that the grass is not damaged. Moreover, the trainee also got to connect the experience in the workplace with the theoretical knowledge, and applied the theories, such as computing the Bill of Quantity (BQ). With all the things considered, the trainee internship was very useful as groundwork for the trainee to face real working life after graduating. Despite a few imperfections the trainee has acknowledged in the conduct of this internship program. The trainee looks forward to learning from the Ipoh City Council staff and improving in any ways possible.

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