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UNIVERSITI
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MARA

UNIVERSITI TEKNOLOGI MARA

FACULTY OF CIVIL ENGINEERING

INDUSTRIAL TRAINING REPORT

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JULY 2019

ABSTRACT

This report describe the activities that I did during my internship period at Jurutera Perunding Marak Bersekutu in Civil Engineering division for around 8 weeks, starting from 15 July 2019 until 6 September 2018. This company is a consultancy agent which mainly do infrastructure and structural drawing which is based in Bandar Tun Hussein Onn in Cheras. Its been around for more than 10 years and still going strong.

This report shows the detail about background of the company and the activities that I carried out during my 8 week's training at this company. In this report also describe the problem that we will encounter during this duration, how to solve it, and experience that I get from this internship programme.

For 8 weeks, I have been spending my time learning and struggling in this company. There is a lot of things that I learned. Be it good or bad experiences, I treasure both memories here. Not only I manage to make some connection here, I make some friends along the way too. Moreover, I also learn the most of the fundamental skill in order to work in consultancy agency since they are quite a good teachers.

Also, I found that these past 8 weeks have teach me and help me grow to be a more decent young adult and manage to attract me to aim to pursue career in designing. The supervisor who is assigned to me is a responsible man and I was grateful he is assigned to me. He do a great job leading me and one of the key to my development.

In this report, most of my work will be explained here in details. And some attachment will be added. Im grateful to be accepted to fo my internship here and forever will be indebted to this company.

ACKNOWLEDGEMENT

As a start, with full of my heart, I am most grateful to thank to Almighty Allah s.w.t for blessing me with good health and ideas for completing my first 10 weeks of industrial training and this final report. I would like to thank Allah for HIS firm hands in guiding me for completing this report. Without HIS bless, I don't think that I can finished my industrial training with such of experiences and knowledge.

I would like to show my gratitude to Jurutera Perunding Marak Bersekutu for having me as one of the intern. Thank you for giving me this opportunity for completing my industrial training at the company about 8 weeks. Started from 15th July 2019 until 6th September 2019. At the same time, I successfully completed my industrial training report as established to finish the main requirement in order to complete my study in Diploma of Civil Engineering.

Thanks to Jurutera Perunding Marak Bersekutu for giving me a chance to learn under their guidance. The supervisor who was assigned to me was a big help and played a big role in developing my experience there. Thanks to him, Mr Fairizzal Bin Abu Hassan who is Senior Coordinator Project for his guidance and teachings. Also thanks to those who work there that teach me everything to know about consultancy whether directly or indirectly. May Allah bless this company with more project.

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CHAPTER 1 :

INTRODUCTION

1.1 INTRODUCTION

JURUTERA PERUNDING MARAK BERSEKUTU SDN BHD (JPMB) is a wholly Bumiputra owned firm established in 2009. The main objective of its incorporation is to offer total solution in project management and engineering consultancy services..

1.2 COMPANY BACKGROUND

With a pool of knowledge acquisition and experience, JPMB has now become an active and established player in the marketplace. We offer a wide range of technical services, each with highest quality in project planning, conceptual and feasibility studies, basic and detailed engineering development and project management.

Typical tasks that are routinely handled are:

- Foundation Design for Earthworks, Buildings and other Structures.
- Buildings and structures including housing scheme, factories, shop houses, office buildings and commercial buildings.
- Government buildings including airport, residential quarters, school, hospitals etc.
- Site Assessment and Site Selection Studies.
- Geological Assessment
- Site Investigations – Recommendations, Executions, Administration and Interpretation.
- Database Management and Subsoil Profiling for Soil Investigations Works.
- Retaining Structure Analysis and Design.
- Failure Analysis for Slopes, Retaining Walls, Foundations & Structures and Design of Remedial Works.
- Analysis and Design of Excavations and Support Systems.

- Ground Improvement Design for Poor Ground Areas and Soft Soils.
- Slope Stability Analysis and Design of Embankments and Cuttings in Soil and Rock.
- Groundwater and Seepage Analysis and Design.
- Design and Interpretation of Geotechnical Instrumentation and Monitoring.
- Onshore, Near Shore and Off-Shore Reclamation Works including Design of Shore Protections Works and Associated Infrastructures.
- Design of Water Front Structures including Jetty, Barge Berth, Quay wall etc.

JPMB offers a flexible and cost effective service, tailored to suit your needs. Projects in the construction industry are becoming increasingly complex. Clients' demands for better value and fast turnarounds can only be achieved with early, proactive and continuous management and budget control techniques

PROJECT MANAGEMENT

The idea of Project Management to JPMB is to co-ordinate the disciplines of planning, organizing, and managing resources to bring about the successful completion of specific set project goals and objectives. The task of project management (involving contractual agreements, pre-construction planning, cost control, scheduling, accurate record keeping and organization, and contract administration through completion) is to successfully execute and determines profitability.

Construction projects necessarily involve a myriad of professionals, users, owners and contractors, each involved for profit at some phase of completion. Private owners may not have all of the technical capabilities to manage the various phases of their own projects or shortage of technical staffs to execute projects.

Here, JPMB can represent the client company to provide total project management by coordinating field and office operations to insure successful, on time progress from project inception through completion. The JPMB consultant can organize these parties as an independent representative of the client to insure that his best interests are served and that maximum profitability is achieved. As your representative we can:

- Coordinate activity undertaken by owners, design professionals and contractors.
- Schedule meetings between the aforementioned people to discuss progress.
- Issue regular progress reports.
- Perform on-site inspections.
- Coordinate testing prior to startup to insure smooth operation.

JPMB achieves this through a balance of contrasts developed through our knowledge of the planning industry and the control/monitoring techniques that are adopted. The primary challenge of project management today is to achieve all of the project goals and objectives whilst adhering to the classic project constraints of Scope, Quality, Time, And Budget.

As with all projects there is a carefully defined set of activities that utilize such resources (money, people, materials, energy, space, provisions, communication, motivation, etc.) to achieve the final project goals and objectives.

At JPMB we concentrate and enhance the importance and criticality of open communication between all participating parties to achieve a desired conclusion, the ultimate success of the project as a whole. JPMB uses proven management skills to lead projects toward completion within budget, on schedule and built to specifications. JPMB experienced leaders are able to effectively communicate with all parties, monitor and document the work, review the quality of the work and identify and resolve issues before they impact construction.

REHABILITATION OF ABANDONED PROJECT:

Abandoned housing projects are one of the housing problems in Malaysia. Even though there are laws and policies by the Malaysian government to govern the housing industry, the abandoned housing projects problem is still an unresolved issue for the Malaysian government. However, JPMB through its subsidiary Trident Project Consultant has been involved in various abandoned project rehabilitation exercise throughout Malaysia. Their technical know-how expertise was used to work along with respective liquidators to revive many abandoned housing projects until receiving Certificate of Fitness.



Figure 1.1 Logo of JPMB

1.3 ORGANIZATIONAL STRUCTURE

ORGANIZATION CHARTS

DIRECTORS

- Dr. Mohd Yusoff**
Civil Eng, UTM
- Dr. Mohd Asyraf Abdulrahman**
- B.Sc (Civil) Engineering, UTM
Dr. Nur Zahirah Mohd
- B.Sc (Civil) Eng, UTM

A. ADMIN DEPARTMENT

- Officer & Team Admin Staff
- Sr. Information Executive, UTM
- Assistant Ad. Officer
- 2 (Manufacturing, UTM)

TECHNICAL DEPARTMENT

STRUCTURE

- Dr. Roslan Shamsud**
B.Sc (Mech) Civil, UTM
- Dr. Shamsul Mohd Ali**
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM
- Dr. Ahmad Fauzan**
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM

- Dr. Mohd Asyraf Abdulrahman**
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer

- Dr. Mohd Asyraf Abdulrahman**
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM

- Dr. Mohd Yusoff**
- Civil Eng, UTM
- Sr. Assistant Lecturer
- B.Sc (Mech) Civil, UTM

1.4 PRODUCT

- CADANGAN MENAIK TARAF BILIK PERSALINAN UNTUK KAKITANGAN.
- CADANGAN MEMBINA LAPANG SASAR TERTUTUP DI ARAS 6A DAN 7, PUSAT KOMERSIAL KOMUNITI BANDAR TUN RAZAK, KUALA LUMPUR.
- CADANGAN MEMBINA 1 BLOK BANGUNAN PERDAGANGAN BERCAMPUR 118 TINGKAT DI ATAS LOT 795, 796, 797, 799, 800 DAN SEBAHAGIAN LOT 743, 746, 802, 803, REZAB JALAN & LAMAN MUKIM BANDAR KUALA LUMPUR.
- CADANGAN MENAIKTARAF PERSIMPANGAN JALAN MANIS/JALAN PERSIARAN LEMAK KUALA LUMPUR
- CADANGAN MEMPERTINGKATKAN SISTEM ALIRAN TRAFIK DI SEKITAR BULATAN KEPONG (JALAN KUCHING MENGHALA KE JALAN IPOH) KUALA LUMPUR

1.5 MARKET STRENGTH

This company's market strength is solely based on its design and also the project always finishes on time. Not to mention it mainly targets infrastructure design since the senior coordinator for the company specializes in infrastructural drawing.

1.6 CONCLUSION

As a conclusion, the more I explore about this company's background, the more I realized that consultancy is one of the great choices to finish an internship as you could learn various things here ranging from paperwork to design and even site investigation.

CHAPTER 2 :

TRAINING ATTENDED

2.1 INTRODUCTION

During my industrial training, I have been exposed and experienced the real working environment on office environment. From that, I learned a lot about knowledge in consultancy and designing. One of the thing that I learned from here is I learned the flow of project. From architects which produced the architectural drawing, which is then given to us the consultancy agents to be design whether infrastructural drawing or structural drawing (depends on the project) and then were passed to contractor to be construct.

I also learned proper manner and ethics while working here. Since we will be communicating with a lot of people, proper ethics and mannerism is prioritized. Not only I get to learned about construction, itr also improve my soft skill which is one of the crucial skill needed for consultancy.

2.2 TRAINING ATTENDED.

Week 1 (15/7/2019-19/7/2019)

- On the first day on this week, I arrived at Jurutera Perunding Marak Bersekutu in Bandar Tun Hussein Onn at 8.30 am. Then, we have been briefed little bit about the company by Puan Mahani as administrator at JPMB. After that, I was asked to meet the director of JPMB for meet and greet. I was assigned to Encik Fairizzal who is the Senior Coordinator Project here as my supervisor for this internship. Next, I was instructed to help my fellow interns Farah to help calculate the shear resistance and bending moment of the beam if the reinforced bar were changed from T32 to T25. This changes occurs in one of the company project which is IPD Jeli, Kelantan project. I also learned how to read drawings.

- After that, I learned from seniors at work regarding autocad while they show me their work about upgrading Jalan telok Gong. I found out that this office do mostly infra drawing.
- Aslos, I studied a guidebook on how to design geometric roads which I manage to covers a few topics including road classifications and design standards.
- The next day I was sent by Puan Mahani to JKR Headquarters to buy a tender for project membina jalan kampong durian belukar ke persimpangan felda waha, sedili, kota tinggi, johor using bank's draft that were handed to me.
- After that I went to menara DBKL 3 to meet Pn Ainul who is an architect there to hand her the abortive claim to projek menaik taraf kolam renang di Bandar Tun Razak Kuala Lumpur.
- The next day, iwas asked to help calculate the reimburse of road safety audit (RSA). RSA is the cost of things like travelling cost, hotel cost, and et cetera which is will be covered by the authorities who opens the tender according to agreed rate.
- After that, I was asked to helped my colleagues to finish an interim report of Jalan Telok Gong projek which is near glenmarie. Then, I also continue to photostate all the letters I found and put it back into files and then compiled it with the reports.
- The next day, I was asked by supervisor Encik Fairizzal to photostate a letter which is related to Telok Gong projek to be sent to client. After that, I was asked to propose an alternative rout for traffic regarding projek at Jalan Ipoh. Since the traffic would be close due to construction, an alternative route need to be proposed so that it could proceed. I managed to proposed one and my supervisor approve of it, since I presented my idea with proof.
- The next day, I helped to make a copy of interim reports for IPD jeli which is to be given to the our director. After that I got into a meeting with my supervisor to listen to a salesman from Alam Sekitar Malaysia which is an NGO but funded by government to promote about Bi-Act SDO which is new in Malaysia. Bi-Act

SDO is a process which both aerobic and anaerobic process were used to treat wastewater.

- After that, I was sent to JPS Ampang to deliver a request for data regarding seawater level at jalan ipoh and after that I head to ZamQS in Gombak to deliver the plan for roadwork in Jalan Ipoh.

Week 2 (22/7/2019-26/7/2019)

- For week 2, firstly, I met with the boss to receive the interim report from him and print them out. I was asked to stamp them all by using company stamps. After that, I bind all of them and sent it to Puan Mahani for for a checkup.
- Then, I go to JKR Headquarters in Kuala Lumpur to buy tender for projek membina jalan baru menyambung felda bukit jalor ke gemas, negeri Sembilan.
- After that, I went to meet encik ridzuwan in menara dbkl 1 to deliver a letter and site diary for projek jalan tun razak
- The next day, I help to arrange drawing of road and drainage of project permohonan kelulusan mendirikan bangunan bagi cadangan pembangunan kompleks myfarm outlet di atas sebahagian plot au6 lot pt12333 (hsd12609), present 4, putrajaya untuk lembaga pemasaran pertanian persekutuan (FAMA).
- After that, I study the design review checklist for road project which is made by Jabatan Kerja Raya. I also study the guidelines for preparations or road designs.
- The next day, I was asked to make a copy of a list of document that were needed to be attached to a tender of project that our company wishes to enter. I also observed my co worker work on his drawing on INTEM project.
- After they finished it, I was asked to rearranged the drawing of of INTEM project according to its list before giving it back to my co worker.
- the next day, I helped Encik Nadzari to bind some documents which is preliminary report, pre design report. interim report, design draf report , final design report.

- Then, I helped encik amran to stamp his design of jalan sampeng which is then submitted back to him.
- After that I continue my study on how to read the plan and view of design like beam, drainage, floor plan and so on.
- I was asked to go to JKR headquarters and buy a tender regarding projek membina jalan baru menyambung jalan felda bukit jalor ke gemas, Negeri Sembilan.
- After that I was asked to deliver a letter which entails on cadangan projek pengraian traffic dan kerja kerja menaik taraf jalan tun razak to encik ridzuan at menara DBKL 1.

Week 3 (29/7/2019-2/8/2019)

- For weeks 3, firstly, I was asked to fill in some document in order to claim my my expenses for the trips ive made for the last month.
- After that, I helped my supervisor to make a copy of some document tender from project IPD Jeli. I also make another copy of report for project jalan ipoh for my supervisor.
- The day after that, I do some checking on some lettersd that were sent by client of project IPD Jeli in PBL files and Client File to validate and update the list of letters.
- I also help my colleague to finish the table of huge segmental box culvert which will be used for reference to design a culvert. My colleague help to teach me on how to use a polygon line and create an arc in autocad.
- The day after that, I proceed to continue to draw the autocad that were requested by my colleague which entails on table of hume T-wall which are used as a reference for building the T-Wall.
- I also learn some new knowledge on autocad which is how to reset or create a template of dimension styles to be used in drawing.

- Continue to work on autocad work which entails on table of Hume T-wall which were submitted to my colleague before office hours were over.
- The next day, I draw another autocad which is about jacking pipes properties which might be used for future reference in future project. I also learned from about autocad layers from my colleagues to make it easier to differentiate between lines and text.
- After I finished the previous one, I was asked to do another which covers on hume arch culvert which also would be use as a reference in project to build or designs culverts.

Week 4 (5/8/2019-9/8/2019)

- For week 4, firstly, I continue to do last week work which is to draw hume arch culvert which is then submitted after I finished it.
- Then, I work on another drawing which is called Hume Bebo arch which also act as a reference in designing a bebo arch.
- I learned on how to use a superscript in autocad from my colleague and MTEXT in autocad. After lunch hours, I finished my drawing and then submitted it to my co worker.
- The next day, I finished a drawing which is called Hume girder series which was given to me by my colleague to be drawn for future use.
- After that, I started on a new autocad project which is called hume septic tank which covers various dimensions and usage to design a septic tank. I draw this the whole day.
- The day after, I was asked to make a copy of Laporan Kejuruteraan Sistem pembentungan of project cadangan pembangunan kompleks myfarm outlet di atas sebahagian plot au6 lot pt12333 (hsd12609), present 4, putrajaya untuk lembaga pemasaran pertanian persekutuan (FAMA) and then I bind them.

- After that, I was asked to make a copy of spesifikasi kerja tanah of project cadangan pembangunan kompleks myfarm outlet di atas sebahagian plot au6 lot pt12333 (hsd12609), present 4, putrajaya untuk lembaga pemasaran pertanian persekutuan (FAMA). Then, I continue to work on autocad.
- The next day, I was sent to jkr headquarters again to deliver a tender which entails on project menaiktaraf jalan pintas dari felda teratap, pecan, ke felda mayam, bera, Pahang into peti tawaran 4.
- After I got back from there, I was given another task, to determine the error in dimension or measurement of beam by referring it to plan view.
- Then my colleague asked for my help to solve a problem of autocad drawing of stairs in kuarters E which has different measurement. I manage to solve some of it.
- The next day, I continue to draw hume septic tank which were left unfinished. The, my coworker ask me a favor to add attachment to survey plan of cadangan pembangunan kompleks myfarm outlet di atas sebahagian plot au6 lot pt12333 (hsd12609), present 4, putrajaya untuk lembaga pemasaran pertanian persekutuan (FAMA).
- After that, I was asked to draw a a cover page for cadangan pembangunan kompleks myfarm outlet di atas sebahagian plot au6 lot pt12333 (hsd12609), present 4, putrajaya untuk lembaga pemasaran pertanian persekutuan (FAMA).

Week 5 (13/8/2019-16/8/2019)

- For week 5, I was asked to go work with Encik Amran for the whole week with a few of other colleagues at Menara DBKL 2 which entails on reviewing and key in data from tender that were given to us by authorities for projek cadangan menaiktaraf persimpangan jalan manis, jalan persiaran lemak, kuala lumpur.

Week 6 (19/8/2019-23/8/2019)

- For week 6, firstly, I helped to recheck the data that were keyed in for projek cadangan menaiktaraf persimpangan jalan manis, jalan persiaran lemak, kuala lumpur to make sure there was no error.
- Then, I make a copy of company profile to be attached together with tender for project that were opened by JKR headquarters. After that, I continue to work on my autocad work of hume pre-stressed concrete which later was being submitted to my co worker.
- The next day, I help to carry a few box of A4 papers to be placed in the Photostat room since the paper is almost out of stock.
- Then, I continue to draw the hume prestressed concrete drawing on autocad. Later that day, I was asked to make a copy of letters which entails on inquire data for the crucial variables need to be design r&d project for JKR KL.
- The day after, I was sent to JKR KL to deliver another tender of C&S of projek Jalan Tasik Bera. Then, after I got back, I was asked to make a copy of Interim letters that were sent to company to be attached in PBL files.
- After that, I continue to draw hume prestressed concrete in autocad.
- The next day, I was sent to IIUM Business school in Gombak to deliver a tender of C&S that were opened by IIUM Business School SDN BHD regarding menaiktaraf Block B bangunan IIUM.
- Then, I was sent to JKR Selangor in Shah Alam to deliver a letter to Encik Farizzuan regarding interim report for IPD Jeli.
- The next day, I went to JKR KL in Jalan Sultan Salahuddin to submit a tender regarding projek jalan tasik bera. After that, I continue my autocad work.
- Then I was sent to Menara DBKL 1 to deliver the letter which is supposed to be delivered to Encik Firdaus.

Week 7 (26/8/2019-30/8/2019)

- For week 7, I helped my colleague to organize a drawing of project myfarm to be given to my supervisor before being sent to DBKL.
- After that, I stamp all of the drawing to make sure it was signed by the director of my company before delivered to DBKL. Then, I continue to finish the autocad drawing of hume prestressed concrete.
- The next day, I printed out the accounting details that were needed for tenders for project Jalan Bera and get it signed by Puan Mahani.
- Then, I went to citylink to deliver the details that I printed earlier to be posted to NZ company to get approved by them.
- Then, I make a copy of all of the letters in pbl files and double check the missing entries in it.
- The day after that, I learned how to use drone in order to help my co worker to survey site with Encik Nabil. Then, I went to Dbkl to send some letters regarding the project IPD jeli.
- Then, I went to JKR KL to send some letters regarding projek Jalan bera tender evaluation. After that, I help Encik FAiz to rearrange drawing for projek JALan TAsik BEra before giving it back to Encik Amran.
- The next day, I help Encik Nabil to send some letters to DBKL regarding projek Jalan Duta which is in the report.
- Then I was asked to make a copy of company profile and bind them to be compiled together with tender which will be sent to JKR KL.
- Then we went to Wangsa Maju to use drone and capture picture of site so that Encik Amran can bring the pictures into his meetings.
- The next day, I went to DBKL to run an errand for Encik Amran to deliver a letter to Jabatan Infrastruktur regarding projek Jalan Tasik Bera.

- Then, I helped Encik Faiz to take a look at his drawing and draw some dimension on the drawing. After that, I went to taman Hillview with Encik Nabil to take pictures for surveying purposes with Encik Nabil.

Week 8 (3/9/2019-9/2019)

- On the first day of the 8th week, I help to organize the drawing of project jalan duta before submitting it to Encik Amran.
- Then, I photostate some document for tender jalan bera which will be submitted to JKR Headquarters.
- Then I follow Encik Nabil to deliver letters to Encik Fairuz regarding project Jalan Duta.
- Next day, iwas asked to get into meeting with Mr Lim regarding safety in office and how to survive if there is a fire breakout in office. After that, I fill in claim from zams qs consult from JKR to claim the fee for the project.
- Then I was asked to make a copy for interim report before submitting it to director.
- The next two days, which were my last day there, I was asked to go to DBKL to settle the tender evaluation since there's some mistakes before.

2.2 CONCLUSION

During my 8 weeks industrial training at Jurutera Perunding Marak Bersekutu, there are so many things that I do, ranging from paperwork to surveying. I also have been exposed to a few office work such as prepare a report and site diaries and prepare a file and paper work company's audit.

So, as conclusion, there are so many knowledge that I get after 8 week of my industrial training at Jurutera Perunding Marak Bersekutu whether knowledge that I learned from the office. Some of them are really new things for me because I might still now learn it or does not been studied in my course outline.

CHAPTER 3 :

TECHNICAL REPORT

3.1. INTRODUCTION

Diploma in Civil Engineering is not only about what we learned during learning process, but also how we could contribute to the country and society as well. So, from this industrial training, student can grab a chance to improve their skill and gain new knowledge that they do not get chance to learn it in class, especially soft skills. It is important to grab this chances as it is hard to acquired it.

During 8 weeks of industrial training at Jurutera Perunding Marak Bersekutu, I have been involved in many designing process for a few project. For road construction, I get involved designing at Jalan Tasik Bera, Pahang. The contractor in charge for this project is RH BERSATU SDN BHD. The purpose of this project is to upgrade the the road for this are since its been damaged and level the surface of the road. Also propose a new drainage system since the last one has failed.

All project have their own due date. So, for Jurutera Perunding Marak Bersekutu, they need to make sure all design works follow the JKR's standard guideline and finish on time. If the designs do not follow JKR's standard guideline, the safety of the worker, building before and after construction cannot be secure. Then, if the project cannot been finish on time, it will affect daily routine of resident. Good name of the company will affected and might ruined future chances to get another project.

3.2. KNOWLEDGE GAINED

During my industrial training at Jurutera Perunding Marak Bersekutu, there are a lot new knowledge and experience that i get and learn there. Some of them are really new things for me, for example, drawing autocad using layers for different types of things, preparing a tender, and evaluation of tender.

3.2.1. DRAWING AUTOCAD IN LAYERS

When drawing in autocad, whether designing or even just drawing some dimensions. It is important dor us to do it in layers. For examples, when drawing lines we named it AR-LINES and for dimensions we named it AR-DIM so that it doesn't get mixed up. Doing this gives a lot of advantages to us. For example :-

- Helps to differentiate each line and text.
- Make it easier to change colour of the lines and text.
- If there's some mistake on some line, we could just edit the line layer.

In order to add some layer, you just enter LAYER in search bar and the properties bar of layers will pop out.it is easy to do and seems insignificant but actually quite useful and will make our work easier.

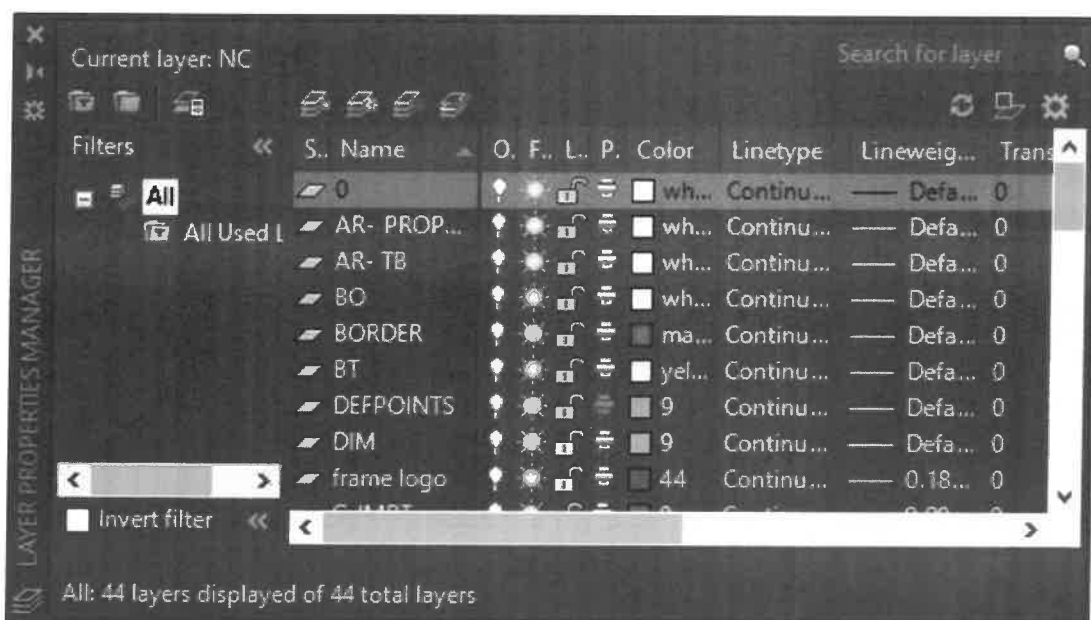


Figure 3.2.1.1 INTERFACE OF LAYERS IN AUTOCAD

3.2.2. EVALUATION OF TENDER

One of the things that I have learned here is how a tender for project is chosen. The contractor have to meet a certain criteria and the cost have to be within the range of cost or “anggaran jabatan” that were issued by the client. I learned this during week 5 in DBKL evaluating tender for Jalan Lemak in kuala Lumpur. We filled in the template that were given to us. There’s a few template need to be fill which is :-

- Lampiran A
- Lampiran B
- Lampiran C

JABATAN KEJURUTERAAN AWAM DAN PENGANGKUTAN BANDAR DEWAN BANDARAYA KUALA LUMPUR							LAMPIRAN B					
							Anggaran Jabatan : RM 1,531,988.33					
CADANGAN MEMBINA SISTEM PERPARITAN & JALAN SAMBUNGAN DARI JALAN LENGKUAS KE JALAN SAN PENG KUALA LUMPUR (2016/140)							Modal/Minimum Diperlukan (3% Dari Kerja Pembina) : RM 47,759.85					
JADUAL MAKLUMAT KEWANGAN DAN PENGALAMAN PETENDER												
BIL.	NAMA & KOD PETENDER	PERBEZAAN PERATUS (%)	STATUS KEWANGAN		STRUKTUR SYAHIKAT		PENGALAMAN BERKAITAN	JENTERA / PERALATAN				
			(i) Aset (Semasa+Terap)	(ii) Fasilitas	(iii) Liabiliti	(iv) Working Capital		(v) = [(i)-(ii)]	TARIKH PENUBUHAN	BIL. KAKITANGAN (ORANG)	JENIS	BIL. (No.)
11	044/070 PEI CONSTRUCTION	2,670,986.00	(i) Aset (Semasa+Terap) : RM	(ii) Fasilitas : RM	(iii) Liabiliti : RM	(iv) Working Capital : RM	(v) = [(i)-(ii)]	08/09/2001	Pengurusan : 1orang Teknikal : 1orang Buruh/Kerani : 1orang	CONCRETE MIXER WATER PUMP BACK HONE JOB	1 1 1	
	E-55, PERUMAHAN JPN BATULI, 17500 TAMAH MERAH, KELANTAN	95.38%	Nota : Status Kewangan -tiada dilampirkan		Purata penyata bank (FEBRUARI, MAC, APRIL 2019)		159,892.88	KKM TIDAK DILAMPIRKAN				
12	025/070 REEZ ENTEPRISE	2,632,977.00	(i) Aset (Semasa+Terap) : RM	(ii) Fasilitas : RM	(iii) Liabiliti : RM	(iv) Working Capital : RM	(v) = [(i)-(ii)]	27 JANUARI 2001	Pengurusan : 1orang Teknikal : 1orang Buruh/Kerani : 1orang	KERJA KERJA MEMOTONG, MENLAP DAN MENCECAT TANDA JALAN SERTA LAIN LAIN KERJA YANG BERKAITAN DI	LORI COMPACTOR MESIN KIMPALAN COMPACT MACHI	1 1 1
	NO. 2, JALAN KERAYONG SA, TAMAN SERI KERAYONG, 42200 KAPAR, SELANGOR DAPUL EHSAN	94.82%	Nota : Status Kewangan - 2018		Purata penyata bank (Mac, April, Mei 2018)		453,354.35	KKM 24/5/2018 31/5/2018 30/05/2018				

Figure 3.2.2.1 LAMPIRAN B IN TEMPLATE

JABATAN KEJURUTERAAN AWAM DAN PENGANGKUTAN BANDAR
DEWAN BANDARAYA KUALA LUMPUR
CADANGAN MENAIKARAF PERSIMPANGAN JALAN MANIS / JALAN PERSIARAN LEMAK, KUALA LUMPUR (2016/A140)

PERBANDINGAN HARGA TAWARAN MENGIKUT ELEMEN KERJA

IL. PETENDER	KOD NAMA KONTRAKTOR	HARGA TAWARAN (RM)	BILL NO. 1	BILL NO. 2	BILL NO. 3	BILL NO. 4	BILL NO. 5	BILL NO. 6	BILL NO. 7	BILL NO. 8	JUMLAH (RM)
			PRELIMINARIES (RM)	SITE CLEARANCE AND DEMOLITION (RM)	EARTHWORK (RM)	DRAINAGE WORKS (RM)	PAVEMENT WORKS (RM)	ROAD FURNITURES (RM)	STREET LIGHTING-LOCAL COLLECTOR ROAD (RM)	PROVISIONAL SUM (RM)	
	ANGGARAN JABATAN	2,800,381.50	81,600.00	199,705.00	176,123.00	502,416.00	447,600.00	1,106,137.50	226,800.00	60,000.00	2,800,381.50
1	069/070 ASSALAMUALAIKUM TAMAN SITI	2,242,983.00	104,660.00	194,430.00	204,769.00	246,311.00	438,800.00	739,163.00	254,850.00	60,000.00	2,242,983.00
2	067/070 FORTY SIX ENGINEERING	2,681,643.80	161,350.00	230,015.00	253,070.00	309,843.80	521,900.00	813,265.00	312,200.00	60,000.00	2,681,643.80
3	065/070 ARUS SERASI SDN. BHD.	2,176,273.00	95,000.00	185,730.00	201,219.00	240,111.00	430,600.00	720,743.00	242,240.00	60,000.00	2,175,643.00
4	052/070 POWERLECT ENGINEERING SDN. BHD.	2,588,456.00	116,850.00	259,965.00	299,789.00	272,550.00	464,000.00	827,652.00	287,650.00	60,000.00	2,588,456.00
5	016/070 ABC BERKAT CONSTRUCTION	2,266,380.00	40,330.00	133,070.00	169,310.00	321,300.00	474,000.00	782,770.00	285,600.00	60,000.00	2,266,380.00
M	LAMPIRAN A LAMPIRAN B LAMPIRAN C		LAMPIRAN A (2)	LAMPIRAN B (2)	LAMPIRAN A (3)	LAMPIRAN C (2)	LAMPIRAN B (3)	LAMPIRAN B (4)	LAMPIRAN C (3)		

Figure 3.2.2.2 LAMPIRAN A IN TEMPLATE

JABATAN KEJURUTERAAN AWAM DAN PENGANGKUTAN BANDAR
DEWAN BANDARAYA KUALA LUMPUR
CADANGAN MENAIKARAF PERSIMPANGAN JALAN MANIS / JALAN PERSIARAN LEMAK, KUALA LUMPUR (2016/A140)

PERBANDINGAN HARGA TAWARAN MENGIKUT ELEMEN KERJA

IL. PETENDER	KOD NAMA KONTRAKTOR	HARGA TAWARAN (RM)	BILL NO. 1	BILL NO. 2	BILL NO. 3	BILL NO. 4	BILL NO. 5	BILL NO. 6	BILL NO. 7	BILL NO. 8	JUMLAH (RM)
			PRELIMINARIES (RM)	SITE CLEARANCE AND DEMOLITION (RM)	EARTHWORK (RM)	DRAINAGE WORKS (RM)	PAVEMENT WORKS (RM)	ROAD FURNITURES (RM)	STREET LIGHTING-LOCAL COLLECTOR ROAD (RM)	PROVISIONAL SUM (RM)	
	ANGGARAN JABATAN	2,800,381.50	81,600.00	199,705.00	176,123.00	502,416.00	447,600.00	1,106,137.50	226,800.00	60,000.00	2,800,381.50
1	069/070 ASSALAMUALAIKUM TAMAN SITI	2,242,983.00	104,660.00	194,430.00	204,769.00	246,311.00	438,800.00	739,163.00	254,850.00	60,000.00	2,242,983.00
2	067/070 FORTY SIX ENGINEERING	2,681,643.80	161,350.00	230,015.00	253,070.00	309,843.80	521,900.00	813,265.00	312,200.00	60,000.00	2,681,643.80
3	065/070 ARUS SERASI SDN. BHD.	2,176,273.00	95,000.00	185,730.00	201,219.00	240,111.00	430,600.00	720,743.00	242,240.00	60,000.00	2,175,643.00
4	052/070 POWERLECT ENGINEERING SDN. BHD.	2,588,456.00	116,850.00	259,965.00	299,789.00	272,550.00	464,000.00	827,652.00	287,650.00	60,000.00	2,588,456.00
5	016/070 ABC BERKAT CONSTRUCTION	2,266,380.00	40,330.00	133,070.00	169,310.00	321,300.00	474,000.00	782,770.00	285,600.00	60,000.00	2,266,380.00
M	LAMPIRAN A LAMPIRAN B LAMPIRAN C		LAMPIRAN A (2)	LAMPIRAN B (2)	LAMPIRAN A (3)	LAMPIRAN C (2)	LAMPIRAN B (3)	LAMPIRAN B (4)	LAMPIRAN C (3)		

Figure 3.2.2.3 LAMPIRAN C IN TEMPLATE

3.3. PROBLEM ENCOUNTERED

1) Unable to edit lines without effecting other text

The first time I draw autocad, I didn't use layer to differentiate each text and lines which leads me to unable to change colour of text without affecting other lines. It cause inconvenience for drafters to differentiate it.

2) Traffic planning.

During construction, sometimes there will be some cases where we wouldn't be able to close the road properly since it will cut off the route totally and might causes bad traffic. This not only cause problem for people, but also might brought complains towards the company.

3.4 HOW TO OVERCOME THE PROBLEM

1. Traffic jam

To overcome the traffic jam during construction, traffic plan management need to be prepared before construction work began. Make sure that the sign of the board are correct and suitable for the construction. The traffic jam also can be avoided by make an alternative way or tempory road. This way, traffic could proceed way smoother.

2. Unable to edit lines without effecting other text

To overcome this problem, the solution is actually pretty simple. We could just use layers to make sure we can make some changes such as colours to lines that we only we need without affecting other lines. It will make it easier to read and understand. But we need to make sure the colour followed the standard.

3.5 EXPERIENCE GAINED

The experience that can gain for all project that I involved during my industrial training at Jurutera Perunding Marak Bersekutu is to know how to handle the office work and how to design infrastructure drawing. An investigation of the problem must be made correctly before proceed to start the project. If the information was wrong, many problem will be occurs beside the problem that already have. It also can make the cost for the project increases.

Other than that, industrial training have taught me to interact with the professional worker and overcome with problem that comes. This experience would be a useful knowledge in future as it helps me to grow in certain way. To overcome the problem, we must carefully consider all the factors to solve the problem in a limited time.

Finally, we need to thinks positive during work. Positive thinking can make our work smoothly as it helps to make ourselves calm. Being calm is the best state during facing som unexpected problem. That way we could tackle any problem using logical sense.

3.6 CONCLUSION

As the conclusion, there's a lot of things I have learned from this company. Sometimes when a problem seems complicated, we just have to take a look from a different angle. Because the solutions are sometimes very simple. Therefore we just have to think outside of the box, and don't forget to ask for guidance from our superior.

CHAPTER 4 :

CONCLUSION

4.1 INTRODUCTION

Being exposed to industry during diploma is really valuable gift because it helps to learn new things and know what industrial training actually all about. It does benefits to student to face the real world of civil engineering in the future. Other than that, from this industrial training, student could see which part that they should improve more and they should have learned a lot of things that they do not get it from the class, especially soft skill.

4.2 LESSON LEARNED

We can develop ourselves during internship and not only during work, interaction among co worker also sometimes leads to new development. During these past weeks, I have learned a lot of things including:-

1. Technical skill.

From the industrial training, student got chance to get a lot from technical skill such as preparing a report for site diary or even draw in autocad. Student will become more understand in what they had learned at their class when they have been exposed to a lot technical work because the theory lesson they learned is related to the technical work they do.

2. Communication and social skill

Student can improve their communication skill during their industrial training program especially when they joined any company meeting and presentation about their industrial program to lecturer and their supervisor in the end of their internship. Also, student can develop their communication skill when they went to the interact with other co workers in office. During those interaction, student will be able to ask anything to the worker or site supervisor if there are anything they do not understand. Communication and social skill is very important because we use it in our daily routine.

4.3 KNOWLEDGE GAINED

Beside technical knowledge and more, there are also good knowledge or moral value that student can gained after 8 week of industrial training at Jurutera Perunding Marak Bersekutu.

Firstly, we must refrain from criticizing or complain about other especially in work. We do not how much effort they had given and time they used to finish the work. Sometimes, we need to show some appreciation even if it is just some small stuff. If there is some mistakes, instead of scolding, we should guide others and correct them properly.

Secondly, if you did some mistake, just own it and don't blame others. No one is perfect in this world. If you make some mistakes, just be honest and humble. Apologize to those who were affected and make sure not to repeat the same mistake again.

Finally, we must respect other people's idea and opinion. We must try to see things from their point of view. When you understand another's point of view, you may learn something that you never would have learn if you did not try. Plus, you will earn some respect from others since you are such a cooperative co worker.

4.4 SUITABILITY OF ORGANIATION.

Nowadays, we heard many post-graduates were unemployed. It might because of inadequate experience. That's why it is important for diploma students to be exposed to industrial training so that they could prove their ability and in the future they might be offer for a position in the organization.

In addition, this company is excellent in many aspects, such as they gave suitable task for students to finish, they even evaluate the results that we have done and correct it carefully. Besides, the co workers here are willing to share their knowledge and never fail to answer the question that were asked. To top it off, they provide suitable rate of allowance for industrial training's students.

Although it will took some times for students to adapt with office environment, it is good for those who are more interested in doing designing jobs rather than staying at site and being a site engineer. Since this company is a consultancy agent.

Nevertheless, working in a small consultant office can train us to apply all the knowledge we have learned in the class before, means all scope of designing works we have to do, no matter infrastructure or superstructure.

Thus, it is suitable for student to come back to work with this company. After all student that has been offered to come back should take that opportunity and do not be too greedy to go for other big company as their salary is higher.

4.5 LIMITATIONS AND RECOMMENDATIONS

In my opinion, the industrial training should have brought benefit for the students. We really hope that each students gain knowledge and experience throughout this 8 weeks of industrial training. It would be such a waste if students themselves doesn't know how to appreciate it. However, there are still many aspects that can be improved.

First, students that went to consultant office were not prepared with fundamental of design. The superior expectation are high, that they thought students can help them to do designs task. It is nothing to be shocked of when there are some students are not being appoint to do any jobs or task, they are even being left on their own. We don't fully blame the superior for their insufficient. Because as we know, they are so busy to rush the due date for a project and it is impossible for them to give any task. Thus, it is important for students to have at least study the fundamental of design or structure first.

Nonetheless, students should join contractor and developer because the chances for students to go to site are higher. At site, students can learn a lot of different things that can only be gain at construction site only. Students can't only gain knowledge and experience from professional and seniors' engineers, they can also gain it from layman. If students start their practical after they are already part 5 because during that time they already have more fundamentals.

Last but not least, we can conclude that some students really make use of these eight weeks. But bear in mind that experience can be gain every second in our life; it may come to be useful in future.

REFERENCES

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- www.google.com/search/autocad



