



**UNIVERSITI TEKNOLOGI MARA**

**FACULTY OF CIVIL ENGINEERING**

**INDUSTRIAL TRAINING REPORT**

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**JABATAN KERJA RAYA JEMPOL**

**KOMPLEKS PENTADBIRAN KERAJAAN DAERAH**

**72120 BANDAR SERI JEMPOL NEGERI SEMBILAN**

**JULY 2018**

## ABSTRACT

Industrial Training is a compulsory requirement for students in certain programs at all levels of higher education in Institutions of Higher Learning (IHL). To increase the level of graduates able to work, Industrial Training program was introduced to strengthen the competencies required. Industrial Training courses give students learning opportunities in the world of work to receive practical experience to improve the reliability of the market.

Industrial Training refers to expose students to the real-life experiences of the engineering works and to get them involved in Civil Engineering projects before graduation. It is one of the requirements for the award of Diploma in Civil Engineering is that the student must complete at least eight (8) weeks of Industrial Training. Industrial Training is usually collected during the semester break at the end of the second-year student (semester 4 and above). The technical and non-technical outcomes of the course may be assessed and evaluated through this Industrial Training.

The objectives of Industrial Training Include:

- a) Appreciation of client's requirements
- b) Attending site-visits
- c) Interpretation of constructions drawing
- d) Interpretation of contract specification and involvement in project management
- e) Discussion with visiting lecturer
- f) Preparation of report

At the end of this Industrial Training, students should be able to:

CO1 : Practice good working ethics and quality delivery off project undertaken

CO2 : Exhibit pleasant interpersonal skills as an individual in working  
independently, collaborative and multi-disciplinary team

CO3 : Practice good organizational skills in enhancing individual and group  
effectiveness and productivity

CO4 : Exhibit good communication with fellow workers and supervisors in issues  
related to projects undertaken

CO - PO Matrix refer to **Appendix C**

## ACKNOWLEDGEMENT

The internship opportunity I had with Jabatan Kerja Raya (JKR) Jempol Negeri Sembilan for 8 weeks was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I have had so many rich experiences that I personally believe will forever shape and influence my professional life while fostering personal growth and development. I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period.

Firstly, I would like to express my deepest gratitude to the Almighty God, Allah who granted me health and long life, without which I could not have finished this internship. Secondly, I would like to thank all staffs at Road and Building Department of JKR Jempol which is department that I got the chance to do my industrial training. Especially to Mr.Zamel, Mr.Adzwan, Ms Fatin, Mdm Raja Norehan, Mr.Azlan, Mr.Aznor and my supervisor, Mdm Norzubaidah. Thank you for guiding me through my internship with advice and feedback despite their busy schedule to teach me on how to understand construction drawings, took me to site-visiting and many more.

I would like to express my sincere gratitude to my faculty supervisor, Encik Mohd Firdaus, who came visiting me for Industrial Training evaluation. Besides, I would like to thank all Civil Engineering Lecturers of UiTM Pasir Gudang because of their continuous reminder about the Industrial Training process to make sure students have no problem to complete the program. Finally, I would like to pay my deepest gratitude to my family for keep on supporting me during the 8 weeks of Industrial Training.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, to attain desired career objectives. Hope to continue cooperation with all of you in the future.

Sincerely,

Nur Aqilah Natasha Binti Mohd Fadzli,

Student of Diploma in Civil Engineering, UiTM Pasir Gudang.

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## Chapter 1 : Introduction

### 1.1. Introduction

Jabatan Kerja Raya Malaysia (JKR) have been involved in many aspects of nation's life in the past 100 years ago. JKR had provided better infrastructure and environment for nation daily life. JKR is responsible in constructing road, which is important in development of country's socioeconomic for interconnecting nation. Besides that, JKR also responsible in providing clean and safe water to have a healthy life. Heritage and culture of Malaysia is not excepted in efforts to rouse the country in architectural aspect. Hence, some building that have been constructed are accepted as the landmark in our country, Malaysia. This achievement allows JKR to be proud as a contributor for development of Malaysia.

### 1.2. Background of the Company



*Figure 1: The official logo of Jabatan Kerja Raya.*

#### I. History

For more than 100 years, the Public Works Department (PWD) or Jabatan Kerja Raya (JKR) Malaysia has touched many aspects of the nation's life by providing necessary infrastructure, such as roads and water supply systems. The Public Works Department (PWD) was born in 1872 with Major J.F.A McNair as the first head of the organization. The events that lead to the formation of PWD began earlier than 1872 when the British East India Company needed a safe station for refitting their ships. They found it in Penang. Penang was well positioned for their purpose. In 1786, they persuaded the Sultan of Kedah to give up the rights of the island to the company. They managed to get Penang in 1791 through a treaty. In 1825, through the Anglo-Dutch Treaty, Malacca reverted to the British in exchange for Bencoolen. Raffles, in 1819, entered into a treaty with Sultan Hussein and Temenggong Abdul Rahman giving the British the rights to establish settlements in

Singapore. These three territories which are Penang, Malacca, and Singapore formed the Straits Settlement in 1826.

## II. Function of JKR

- Serves as a strategic partner to our clients in achieving the success of government policy.
- Take lead in the field of asset management, project management and excellence engineering for country.
- Providing country's infrastructure.

## III. Motto

“ Jasa kepada Rakyat ”.

## IV. Vision

Being a World Class service providers and Centers of Excellence in Asset Management, Project Management and Engineering Infrastructure Development Based on National Human Capital Through creative and innovative and Latest Technology Update.

## V. Mission

JKR mission is to contribute to national development by:

- To assist customers in delivering policies and services through collaboration as a strategic partner.
- Standardization of processes and systems to deliver consistent service results.
- Providing asset management and effective and innovative projects.
- Strengthening the existing engineering competency.
- Developing human capital and new competencies.
- Adhering to integrity in delivering services.
- Build a harmonious relationship with the community.
- Preserving the environment in service delivery.



### 1.3. Organizational Structure

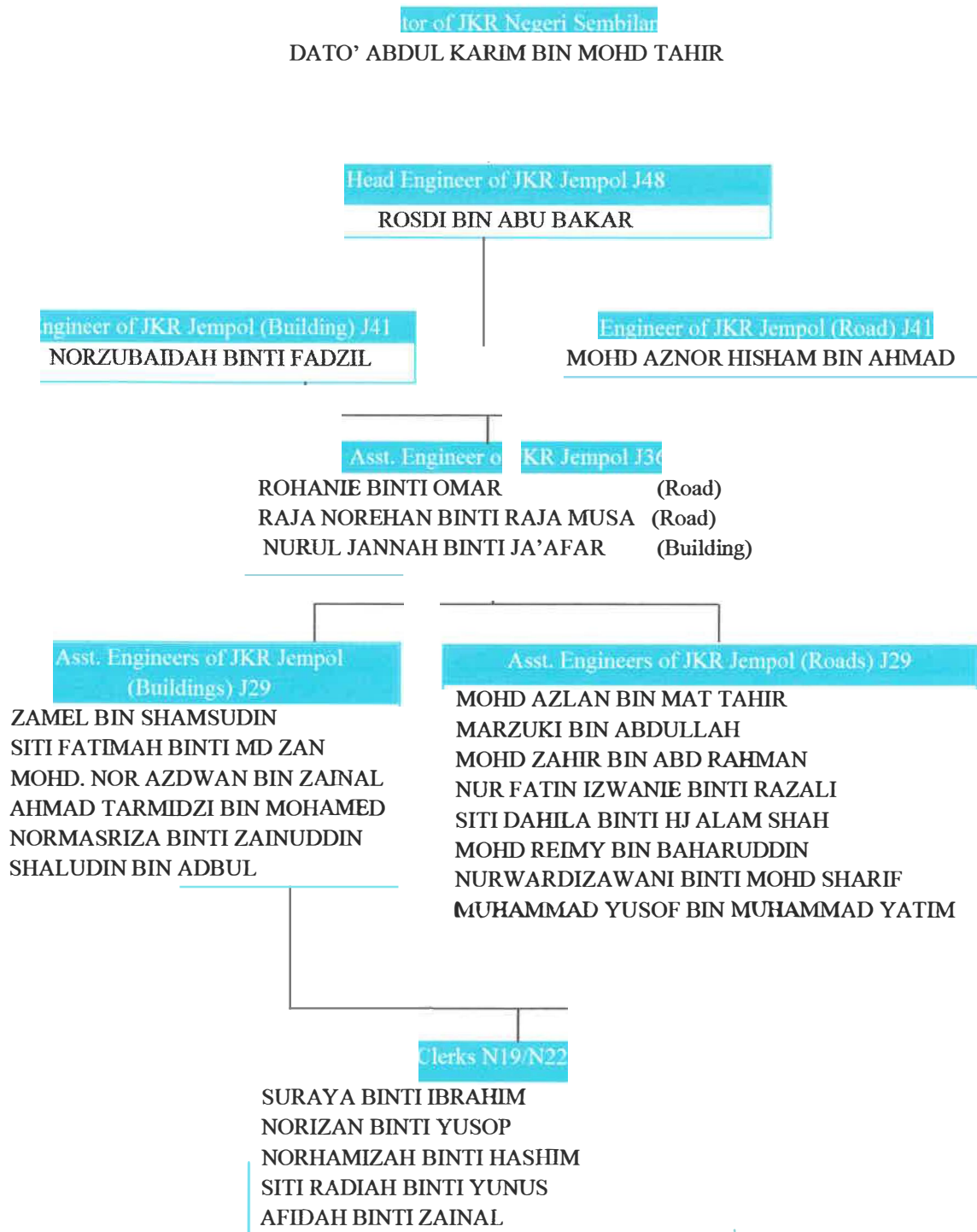


Figure 2: Organizational Charts of JKR Daerah Jempol (Road & Building Department)

#### **1.4 Nature of Business**

In JKR Jempol, a director as head and assisted by Assistant Director which is in Grade of J48 and J41 in all division, such as:

##### **I. Corporate Management**

Monitoring 100% of the project according to an agreed schedule. Towards excellence in information technology management. Hence, to optimize the use of resources to achieve quality products down to zero complaints from where fewer than 10 complaints per project towards excellence in quality management department.

##### **II. Administration and Finance**

- **Administration**

- a) Submitting the declaration form for the confirmation of the appointment of qualified personnel to the Appointing Authority within thirty (30) days from the date of appointment.
- b) Submitting the form to the confirmation certificate of service for employees on probation who are qualified to the Appointing Authority within fourteen (14) days after receipt of complete documents.
- c) Submitting documents to the employee retirement Public Services Department six (6) months before the employee retires.

- **Finance**

- a) Ensure no claims submitted to the finance division of JKR Jempol headquarters within (7) working days from the date of receipt of complete documents.
- b) Ensure order of Work Order issued within three working days from date of receipt of complete documents.
- c) Ensure that documents change to the business of salaries, allowance and pensions processed within fourteen (14) working days before the date of payroll process is carried out.
- d) Ensure audit feedback is provided within one (1) month from the date of the warning letter received at the Pusat Tanggung Jawab (PTJ).

### III. Contract & Quantity Surveying

Defining work contract administration and procurement department organized smoothly with conditions of contract and procedures set and ensure project expenses by cost agreed.

### IV. Roads

- a) Maintaining the existing road network (except highways) in a safe and comfortable for the driver.
- b) Improving the way and adds the ability to increase the traffic demand safety standards.
- c) Preparing transport infrastructure to meet agricultural development, community service, national defence, tourism and resting place

### V. Building and Education

- a) Planning, design and construction of government buildings in the duration and cost of that has been agreed to by the customer.
- b) Maintenance of existing government buildings in accordance with the provisions provided.
- c) Provide technical advice Government Department if necessary.
- d) Responsible for coordinating / monitoring projects and government building in relation to the Ministries / Departments concerned customers and implementing agencies in the regions. This section is also a major driver of the government building projects in Negeri Sembilan.

### VI. Architectural

Part of Architects play an important role in the preparation of projects needs to Federal and State, especially in the aspect of site preparation, planning and design of buildings and the provision of architectural drawings. Emphasis is being given to introducing architectural designs that are appropriate to local conditions in order to create a better atmosphere in addition to preserving local buildings that are considered valuable and have high aesthetic value.

## 1.5. Products

### List of Completed Project:

#### a) THE PROPOSED DEVELOPMENT OF SEKOLAH MAGNET SMK PASOH 2, JEMPOL NEGERI SEMBILAN

Contract Value : RM 475,006.14  
Contract Period (Start) : 13 October 2017  
Contract Period (End) : 26 December 2017  
Contractor : MEB Construction & Enterprise.



*Figure 3: The new block at Sekolah Magnet SMK Pasoh 2 and concession process.*

b) THE PROPOSED DEVELOPMENT OF PROJECT “KERJA-KERJA PEMBINAAN DEWAN TERBUKA SMKA DATO’ HJ MUSTAFA, JEMPOL”

Contract Value : RM 385,081.04  
Contract Period (Start) : 2 February 2018  
Contract Period (End) : 27 July 2018  
Contractor : JUTA PELANGI ENTERPRISE



*Figure 4.1 : The process of Dewan Terbuka SMKA Dato’ Hj Mustafa*



*Figure 4.2 : The construction that have been completed.*

## 1.6. Market Strength

Jabatan Kerja Raya Negeri Sembilan (Road & Buildings Department) shows a great work in project management which meets the requirement and satisfaction of clients. It is proven when JKR won first and second place for The Best Project Management Team Category in Innovation Day that was held at Ipoh, Perak Darul Ridzuan on October 2016.



*Figure 5: The Best Project Management Team Awards that JKRNS obtained*

## 1.7. Conclusion

In this chapter, it is proven that many information was gained during Industrial Training by asking staffs at JKR Daerah Jempol, Negeri Sembilan about the company's background, awards, projects and more. This activity achieved one of objectives of Industrial Training which acquire students to improve communication skill.

## Chapter 2 : Training Attended

### 2.1. Introduction

In this chapter, students are required to summarise weekly activities during the industrial training based on logbook.

Student undergoes an industrial training at JKR Daerah Jempol for 8 weeks and have a chance to cooperate with other experienced employees to enhance my knowledge in engineering field. Below are the summary of duties and tasks undertaken during the industrial training period as students listed in the logbook.

### 2.2. Exposure Level

Week 1	<ul style="list-style-type: none"><li>• Reported for duty at JKR Jempol for industrial training program.</li><li>• Joined a site-visiting (road) at Palong 6, Jempol for drainage renovation.</li><li>• Joined a site-visiting (building) at SK Serting Hilir 2 (Felda) for school's building condition; trusses, computer lab and canteen.</li><li>• Joined a site-visiting at Klinik Kesihatan Palong 7 for constructing staff's house.</li><li>• Attended pre-construction meeting for project of Klinik Kesihatan Palong 7 at JKR Negeri Sembilan.</li></ul>
Week 2	<ul style="list-style-type: none"><li>• Helped on folding construction drawing in many sizes of paper such as A1 and A3 paper.</li><li>• Attended an event 'Penyerahan Kunci' to end user at SMK Pasoh 2.</li><li>• Joined a site-visiting at Pusat Internet Desa Jempol (PID) for building renovation.</li><li>• Joined a site-visiting at SMK Lui Barat, Jempol for hostel building renovation.</li></ul>

*Table 1: Summary of Week 1 and Week 2 of the Industrial Training*

Week 3	<ul style="list-style-type: none"> <li>• Helped on editing and printing structural drawing.</li> <li>• Helped on checking construction drawings of project Masjid Jamek Bahau, and Klinik Kesihatan Palong 7.</li> <li>• Attended a technical meeting at JKR Negeri Sembilan with The Architect for discussing a few issues about the project.</li> <li>• Joined a coring test at project of Jalan Pasoh 2, Jempol.</li> <li>• Joined a short site-visiting at Klinik Kesihatan Palong 7, Jempol.</li> <li>• Did some studies about pavement (pothole) and crack sealing.</li> <li>• Identified definition of usual words used in JKR like System Provider (S.P.), Superintending Officer (S.O.), Contractor and more</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>• Did some reading on “Standard Specifications for Building Works”</li> <li>• Joined a short site-visiting checking on underground cable (TnB).</li> <li>• Made sketches and drawings on AutoCAD Software for the measured building.</li> <li>• Visited mosque at Masjid Felda Raja Alias, Jempol which needed to be renovated and remeasure the room to make sure the size is according the construction plan.</li> <li>• Attended a meeting “Mesyuarat Tapak Klinik Kesihatan Palong 7” at Bilik Gerakan Jempol.</li> <li>• Did some studies about Initial Work Programme and how to calculate Bill of Quantities (BQ).</li> <li>• Joined a site-visiting at Jalan Bahau – Keratong, Jalan Lui Selatan, Jalan Simpang Pertang and Jalan Tembangau Batu Kikir; checking on the thickness and temperature of premix.</li> </ul>

*Table 2: Summary of Week 3 and Week 4 of the Industrial Training*



Week 5	<ul style="list-style-type: none"> <li>• Joined a site-visiting at SBP Integrasi Jempol Batu Kikir for pavement (apron), ceiling and drainage renovation.</li> <li>• Remeasured Bangunan Balairaya Kg. Serting Hilir for room and pantry renovation for final confirmation before process of construction begins.</li> <li>• Joined a Trial Mix Design test at Mersing Concrete Sdn. Bhd and Perfect ReadyMix Sdn.Bhd.</li> <li>• Measured and marked chainage for every 25m at Jalan Serting Hilir</li> <li>• Joined a coring test at Jalan Palong 14,15 &amp; 16.</li> <li>• Had a presentation about Trial Mix Design with Engineer (Building)</li> </ul>
Week 6	<ul style="list-style-type: none"> <li>• Joined a site-visiting at Jalan Kok Foh for audit environment session.</li> <li>• Joined a short site-visiting at Masjid Jamek Bahau project for mosque renovation.</li> <li>• Joined a Trial Mix Design (test cube) at Mersing Concrete Sdn.Bhd and Perfect ReadyMix Sdn.Bhd.</li> <li>• Did some studies on how to read structural drawing with Mr Azlan and identified the suitable size for column and beam.</li> <li>• Did some studies on how to draw on AutoCAD Software</li> <li>• Used Orion Software to make some drawing.</li> <li>• Joined a premix test at Jalan Serting Hilir.</li> <li>• Had some discussion on how to construct bridge with Mr Azlan.</li> </ul>

*Table 3: Summary of Week 5 and Week 6 of the Industrial Training*

Week 7	<ul style="list-style-type: none"> <li>• Joined a site-visiting at Masjid Jamek Bahau project for construction process.</li> <li>• Did some inspection on water pressure supply at the Masjid Jamek Bahau project.</li> <li>• Joined a coring test at Jalan Palong 10 &amp; 11</li> <li>• Joined a site-visiting at Jeram Panjang project for constructing a bridge.</li> <li>• Joined a short site-visiting at Sekolah Magnet SMK Pasoh 2 for dining hall renovation.</li> </ul>
Week 8	<ul style="list-style-type: none"> <li>• Joined a coring test at Jalan Palong 10 &amp; 11.</li> <li>• Did some studies on how to read structural drawing with Jurutera Bangunan and identified the suitable size for a column and beam.</li> <li>• Faculty Supervisor visits for evaluation.</li> <li>• Collecting all data for logbook and final report.</li> <li>• Did some studies about 'Perabot Jalan' and 'Jambatan dan Pembentung'</li> </ul>

*Table 4: Summary of Week 7 and Week 8 of the Industrial Training*

### **2.3. Conclusion**

From everyday experience and observation, student can stand that by doing practical thing provide a great slope for a mind to think creatively. Student are learning and practising through their entire life as they are the basic reasons of the humankind's evolution. However, knowledge gained from books and experiences plays a very important role in the modern life.

In conclusion, during the 8 weeks of industrial training, student had the chances to get involved in site-visiting, learned to read and interpreting construction drawing, preparing for report and more which achieve the objective of industrial training program. Student can openly discuss aspects of the work they have performed or observed and indicate their involvement in their work during the industrial training soon.

## Chapter 3 : Technical Report

### 3.1. Introduction

In this chapter, student need to provide a technical report for one or two projects which have significant or interesting aspects. Noteworthy, technical details of projects in which the students were directly involved or projects which the students observed, should be included.

During the 8 weeks of Industrial Training, project of SMKA Dato' Hj. Mustafa's hall and Masjid Jamek Bahau are projects involved and got the chance to observe the progress of construction works.

#### I. Details of project at SMKA Dato' Hj. Mustafa

<b>Project Title</b>	CADANGAN UNTUK KERJA-KERJA PEMBINAAN DEWAN TERBUKA, TEMPAT WUDUK & TANDAS SURAU SERTA KERJA-KERJA BERKAITAN DI SEKOLAH AGAMA DATO' HAJI MUSTAFA DI DAERAH JEMPOL, NEGERI SEMBILAN
<b>Client</b>	JABATAN HAL EHWAL AGAMA ISLAM NEGERI SEMBILAN (JJHEAINS) Karung Berkunci No. 30, Jalan Dato' Hamzah, 70990 Seremban Negeri Sembilan. Phone : +606-7622 692
<b>Contractor</b>	JUTA PELANGI ENTERPRISE No 4053 Taman Tuanku Puan Chik, 72100 Bahau Negeri Sembilan. Phone: +06 454 6177
<b>Contract Commencement Date</b>	27 July 2018
<b>Project Cost</b>	RM 385,081.04

*Table 5: Details of SMKA Dato' Hj Mustafa project.*

II. Details of project at Masjid Jamek Bahau Jempol, Negeri Sembilan.

<b>Project Title</b>	CADANGAN MEMBINA BARU MASJID JAMEK PEKAN BAHAU DAERAH JEMPOL NEGERI SEMBILAN
<b>Client</b>	JABATAN HAL EHWAL AGAMA ISLAM NEGERI SEMBILAN (JJHEAINS) Karung Berkunci No. 30, Jalan Dato' Hamzah, 70990 Seremban Negeri Sembilan. Phone : 606-7622 692
<b>Contractor</b>	AMMARDA MANAGEMENT & SERVICES No 23A, Jalan Bunga Raya 7, 70400 Seremban Negeri Sembilan Gred : G4
<b>Contract Commencement Date</b>	8 October 2018 (76 weeks)
<b>Project Cost</b>	RM 2,969,999.50

*Table 5: Details of Masjid Jamek Bahau project*



*Figure 6 : The process of construction of Masjid Jamek Bahau project.*

### 3.2 Problem Encountered and Ways to Overcome

Problems can be defined broadly as situations in which people experiencing uncertainty or difficulty in achieving what wanted to achieve. Problems arise when an obstacle preventing from reaching the objective and solution are needed to overcome the problems.

In project of Masjid Jamek Bahau project, student had the chances to get involved in meetings and site-visiting of the construction. One of the problems encountered during the construction was there got a difference between architectural drawing and structural drawing of the project.

In the structural drawing, it was stated that there is a column at one part of the construction. Meanwhile, there was no column at that part in the architectural drawing. This problem led to small argument between engineers and contractors of the project as the contractors already domed the construction by following the architectural drawing (no column). Next, the ceiling issues; considering the size of the ceiling for easy work without affect the cost.

So, the solution of this problem is held a site meeting which involving the engineers, contractors, architects, representatives from electrical and mechanical department. The purpose of this meeting is to discuss and get solution that agreed by all party involved. The meeting was held on 13 July 2018 at JKR Negeri Sembilan.



*Figure 7 : Discussion between the contractors, engineers and architect.*

At the end of the meeting, all parties agreed to follow the structural drawing which is needed to install the column at that part besides change the size of the ceiling that won't affect the cost. This is because the structural drawing had taken proper measurement of loads and strength of the construction which is safer and reduce risks and the changes of size of the ceiling still in low cost.



*Figure 8.1 : The ceiling of the mosque*

### **3.3. Experienced Gained**

#### **3.3.1. Masjid Jamek Bahau's project**

During the construction of Masjid Jamek Bahau's project, student got to experience in inspection of reinforcement steel installation for roof beam and gutter at roof part. From the inspection, student learned on how to understand construction drawing of gutter and roof beam taught by the contractor of the project. Hence, student identified the differences of reinforcement steel size.



*Figure 8.2 : The difference of reinforcements steel needed.*

Based on the figures above, it is shown types of reinforcement steel need to be installed in the gutter concrete. Based on the structural drawing, R10 need to be installed with 100mm x 100mm width. As an experienced contractor, En Zamel suggested that by using R6 is more proper than R10 as R10 is difficult to be bend for that size. Another option suggested by En Zamel is to use R6 with 150mm x 100mm width.

Due to this problem, discussion on site is required by the contractors and engineers. Then, the inspection was proceeding to check on the reinforcement steel installation at the roof and gutter.



*Figure 8.3 : The double-layered reinforcements steel used for roof slab.*



In Figure 8.3 shows the difference of reinforcement steel used. This is because gutter accept more water which can reduce the strength of the slab. Therefore, double-layered reinforcement steel is needed for the gutter to increase the strength.

### 3.3.2. Jambatan Jeram Panjang's project

During the construction of Jeram Panjang's bridge, student got to experience in site-visiting for interim evaluation on 21<sup>th</sup> August 2018. From the site-visiting, student had the experience on how the bridge is construct from the batching, framework and more.



*Figure 9.1 : The slump test are required at the site before the fresh concrete is fill into the framework to get the minimum strength of JKR's specification.*

The reasons why slump test is required at site is because to check the workability of fresh concrete before the concrete is fill into the framework and to achieve the minimum strength specified by the JKR. By slump test, it can be assessing the consistency of fresh concrete. Trial mix design are often undertaken when new materials or admixtures are to be used; water reducer. If it fails, the concrete need to redesign to meet the specifications as inferior mixes were not acceptable.

Using ready mix concrete by mixed in the factory which is batching and transporting by truck to site of work is much better than normal concrete that use machine or by hand. It can achieve a good quality assurance because of the proper batching and mixing process.





*Figure 9.2 : Wood as a material of framework for this project.*

Framing materials are usually wood, engineered wood or structural steel. The use of different theoretical frameworks and models of construction innovations is based on the characteristics of the construction work, including the types and modes of innovation.

Failures of framework can be caused by one or a combination of the following (not inclusive): errors in design, detailing or construction; lack of maintenance or the use of improper materials or foundation type. Also, a construction failure can occur due to the incorrect installation of structural members or temporary supports. However, it has been shown through various studies that a bridge failure is most likely to be caused by an extreme event, with the most prevalent type being flooding and scour.

During the process of installation of concrete into the framework, student experienced to observe and learn on how the bridge was made. Student also get to join discussion with contractors and engineers on-site. This activity may increase the level of understanding for students. Student was taught to read the construction drawing and made sure the progress of the project going smoothly.

### **3.4. Conclusion**

In conclusion, shown that student got to involve in discussing and observing about the progress of the projects during Industrial Training program. This chapter also shown the ability of engineers and contractors to solve problems that occur during the construction without increasing risks.

## Chapter 4 : Conclusion

### 4.1. Introduction

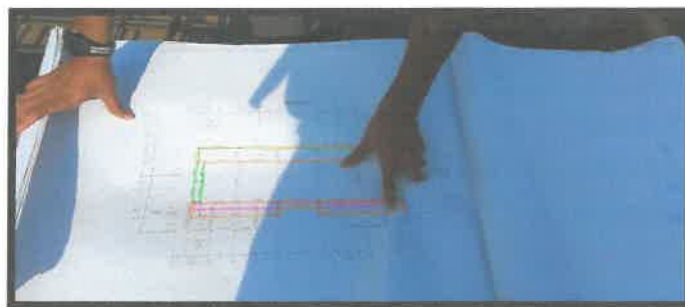
In this chapter, student is required to conclude overall lessons learned from Industrial Training at JKR Daerah Jempol Negeri Sembilan. Lessons learned including skills developed such as technical, communication, human, image building, experience gained suitability of organization and recommendations.

### 4.2 Lesson Learned

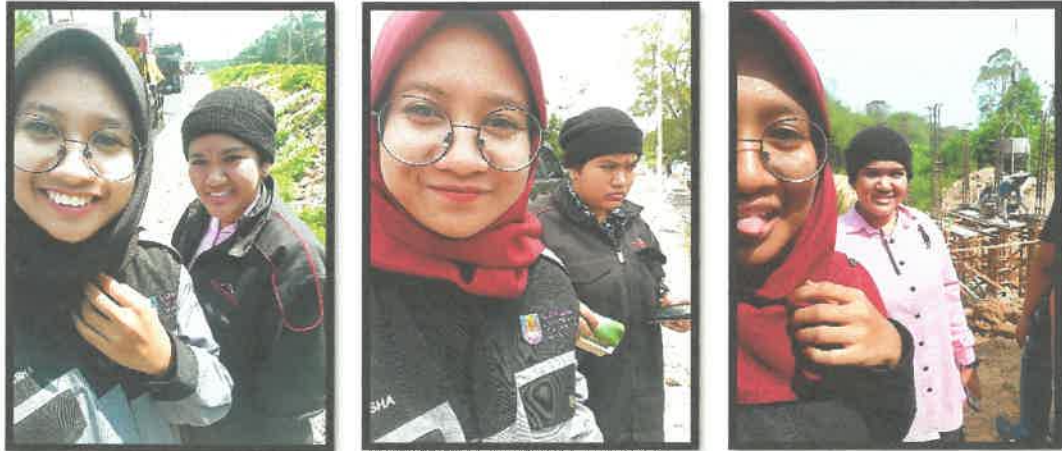
During the 8 weeks of Industrial Training student learned a lot of lessons that achieve the objective of this Industrial Training program. For example, student got involved in site-visiting and required to wear safety equipment on site such as safety helmet and safety boots.

Other than that, student got the chance to learn on using other construction drawing software such as Orion Drafting Template Software and STAAD Pro Software under the guidance of company's engineers. Hence, student got to know the difference between those software.

Besides that, student learned and got used in situation which need determination on-site by the engineers. Students also learned to be professional and able to solve problem that arise during the construction. Then, student was able to understand construction drawing that was taught by the contractors and company's engineers. Student also got the opportunities to learn the management of projects during the Industrial Training.



*Figure 10 : Construction drawing was taught to student by the engineer assistant.*



*Figure 11.1 : Student got involved in site-visiting*



*Figure 11.2 : Student got to learned on management of the project by observing on how the process of construction worked.*

#### **4.3. Knowledge Gained**

There were a lot of knowledge gained by student during the Industrial Training program. Knowledge such as the installation of reinforcement steel, concreting, risks management were gained during the 8 weeks of Industrial Training at JKR Daerah Jempol Negeri Sembilan.

For instances, student got to know the importance of risks management for a project when attending meetings for an audit.



*Figure 12.1 : Meeting was held to reducing the risks that may occur during the construction. (Masjid Jamek Bahau project)*

Other than that, student gained knowledge to determine the suitable materials used in construction such as type of bricks, size of reinforcement steel and more.



*Figure 12.2 : The materials used for the construction of Masjid Jamek Bahau project.*



*Figure 12.3: Autoclaved Aerated Concrete (AAC) Blocks that have 4 hours fire resistant*

#### **4.4. Suitability of Organization**

Projects were given to JKR to control the activities of planning, organizing and managing resources to realize the project. JKR need to run the management implemented by the clients either it is conventional, design and architecture (Design & Build), maintenance services management and manage maintenance operations such as roads, buildings, workshops, and so on.

Jabatan Kerja Raya Daerah Jempol Negeri Sembilan have Buildings Department which is suitable for Civil Engineering course. In this department, scope of works was more into Civil Engineering such as project management, construction of structural drawings, project inspections, meetings of pre-construction, site meetings, technical meetings and many more.

This is shown that JKR Daerah Jempol Negeri Sembilan is a suitable organization for Civil Engineering student to gain knowledge and opportunities to get involve in real-life works.

#### **4.5. Limitations and Recommendations**

At the end of this Industrial Training, student was able to achieve the objectives of Industrial Training. It is recommended for all students to take the opportunities and get involve with the projects at the company to gain as much knowledge for preparation in the future.



## 5.0. REFERENCES

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7. Mr. Mohd Aznor Hisham Bin Ahmad, Engineer (Road), JKR Daerah Jempol Negeri Sembilan, 2018.
8. Mdm Raja Norehan Binti Raja Musa, Engineeer Assistant, JKR Daerah Jempol Negeri Sembilan, 2018.

## 6.0. APPENDICES



UiTM.FKA.LI-01

**INDUSTRIAL TRAINING PLACEMENT INFORMATION FORM**

*(Borang Matlumat Penempatan Latihan Industri)*

**A) STUDENT INFORMATION** *(Matlumat Pelajar)*

Name *(Nama)* : **NUR AQILAH NATASHA BINTI MOHD FADZLI** : **UiTM No. (No. UiTM)** : **2016492892**  
Programme *(program)* : **DIPLOMA KEJURUTERAAN AWAM (EC110)** : **ID No. (No. k/p)** : **970617-59-5006**  
Session *(sesi)* : **MARCH 2018 - JULY 2018** : **Semester (Semester)** : **4**  
Address *(alamat)* : **NO 249, BLOK L, FELDA RAJA ALIAS 3, 72120 BANDAR SERI JEMPOL,**  
**NEGERI SEMBILAN DARUL KHUSUS.**  
Phone *(Telefon)* : **-** : **Mobile No.(No. h/p)** : **019 - 654 5647**  
Email *(emel)* : **natashafadzli97@gmail.com**

**B) HEIRS** *(Waris)*

Name *(Nama)* : **NORAFIZA BINTI MD SAID**  
Address *(alamat)* : **NO 249, BLOK L, FELDA RAJA ALIAS 3, 72120 BANDAR SERI JEMPOL,**  
**NEGERI SEMBILAN DARUL KHUSUS.**  
Phone *(Telefon)* : **-** : **Mobile No.(No. h/p)** : **014-610 9393**

**C) PLACEMENT OPTIONS** *(Pilihan penempatan)*

No. (Bil.)	State (Negeri)	City (Bandar)
1.	NEGERI SEMBILAN	BANDAR SERI JEMPOL
2.		

**C) ORGANIZATION INFORMATION** *(Matlumat organisasi)*

Name *(Nama)* : **JABATAN KERJA RAYA DAERAH JEMPOL**  
Address *(alamat)* : **JKR DAERAH JEMPOL, TINGKAT 2 KOMPLEKS PENTADBIRAN DAERAH,**  
**72120 BANDAR SERI JEMPOL, NEGERI SEMBILAN DARUL KHUSUS.**

Contact Person *(Pegawai yang boleh dihubungi)* : **IR. MOHD AZLAN BIN OTHMAN**  
Designation *(Jawatan)* : **JURUTERA ELEKTRIK KANAN**  
Phone *(Telefon)* : **06-765 9603** : **Mobile No.(No. h/p)** : **-**  
Fax No. *(No. Fax)* : **06-763 5644** : **Email (emel)** : **webmasterns@jkr.gov.my**

Office use:	Checked by:		Approved by:	
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Signature *(Tandatangan)*

Date *(tarikh)*



Surat Kami : 100-UiTMKPG(FKA14/3/4)

Tarikh : 26 APRIL 2018

**PEJABAT JURUTERA DAERAH,  
JABATAN KERJA RAYA JEMPOL,  
KOMPLEKS PENTADBIRAN KERAJAAN DAERAH,  
72120 BANDAR SERI JEMPOL,  
NEGERI SEMBILAN.**

Tuan,

**PERMOHONAN PENEMPATAN LATIHAN INDUSTRI BAGI PROGRAM DIPLOMA KEJURUTERAAN AWAM  
(EC110)**

**Nama:** : NUR AQILAH NATASHA BINTI MOHD FADZLI  
**No. Kad Pengenalan:** : 970617-59-5006  
**No. Pelajar UiTM** : 2016492892  
**Program** : DIPLOMA KEJUTERAAN AWAM  
**Semester** : 4

2. Saya dengan ini mengesahkan bahawa butir-butir peribadi dan akademik di atas adalah seorang pelajar di Fakulti Kejuruteraan Awam, UiTM , Pasir Gudang.

3. Sukacitanya jika pihak Tuan dapat menerima pelajar tersebut untuk menjalani Latihan Industri untuk tempoh **LAPAN (8)** minggu bermula pada 8 JULAI 2018 sehingga 2 SEPTEMBER 2018 sebagai pra-syarat untuk lulus. Sebagai makluman, pelajar dilindungi oleh insurans sepanjang tempoh latihan.

4. Jika Tuan bersetuju untuk penempatan pelajar ini, saya memohon jasa baik pihak Tuan untuk memaklumkan kepada pihak saya dengan melengkapkan "Borang Pengesahan Penerimaan" (lampiran UiTM.FKA.LI-04) dalam tempoh **DUA (2)** minggu daripada tarikh surat ini. Jika tidak ada sebarang maklum balas daripada pihak Tuan, permohonan ini dianggap **TIDAK BERJAYA**.

5. Latihan industri yang akan dijalankan selama 8 minggu adalah sangat pendek, tetapi ia sangat bermakna untuk membantu Universiti dalam menghasilkan bakal jurutera yang berdedikasi, cekap dan berdaya saing selepas tamat pengajian.

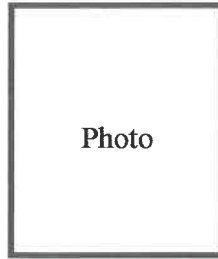
6. Fakulti Kejuruteraan Awam UiTM Kampus Pasir Gudang amat menghargai kerjasama pihak Tuan dalam semua hal yang berkaitan dengan latihan industri pelajar Fakulti Kejuruteraan Awam UiTM Kampus Pasir Gudang.

Terima kasih.

Yang benar,

KOOR. LI FKA UiTM PG  
MOHD FIRDAUS B. MOHD AKHBAR,  
firdaus2092@johor.uitm.edu.my  
Fax : 07-3818141

s.k 1) Ketua Pusat Pengajian Kejuruteraan Awam, UiTM Pasir Gudang

**RESUME****PERSONAL DETAILS**

Name :  
 Identification No. :  
 Date of Birth :  
 Place of Birth :  
 Age :  
 Sex :  
 Marital Status :  
 Race :  
 Religion :  
 Citizenship :  
 Postal Address :  
 Mobile Phone No. :  
 E-mail :

**EDUCATIONAL BACKGROUND**

Year / Period	Institution	Level	Achievement / Award

**EXTRA-CURRICULAR ACTIVITIES**

Year / Period	Programme / Activity	Location	Participation

**WORKING EXPERIENCE**

Year / Period	Organisation	Designation	Responsibilities

### SKILLS

**Language skills :**

Language	Written	Speaking

**Computer Literacy:**

**Other skills :**

### HOBBIES

No.	Description

### ACADEMIC REFEREES

1. Name :  
 Designation :  
 Organisation :

2. Name :  
 Designation :  
 Organisation :

Tel. No. :  
 Email :

Tel. No. :  
 Email :

UiTM.FKA.LI-04

Rujukan Kami : 100-UiTMKPG(FKA14/3/4)  
Tarikh :

Koordinator Latihan Industri  
Fakulti Kejuruteraan Awam  
UiTM Johor Kampus Pasir Gudang,  
Jalan Purnama 81750 Masai Johor.  
(u/p: **MOHD FIRDAUS B. MOHD AKHBAR**, firdausakhbar@gmail.com)  
Fax: 07-3818141

**PENGESAHAN PENERIMAAN PELAJAR EC110 UNTUK LATIHAN INDUSTRI TAHUN .....**

Merujuk kepada surat/faks Tuan yang bertarikh ..... adalah disahkan pihak kami **\*menerima / tidak menerima** pelajar Tuan bernama ..... dan nombor pelajar ..... untuk menjalani latihan industri mulai ..... hingga ..... **(8 minggu)** di organisasi /syarikat kami.

**Butiran Latihan:**

**Tarikh melaporkan** : \_\_\_\_\_  
**Masa melaporkan** : \_\_\_\_\_  
**Alamat melaporkan /** \_\_\_\_\_  
**ditempatkan** : \_\_\_\_\_  
\_\_\_\_\_

Kami juga bersedia untuk menyediakan kemudahan berikut\*\*:

1. Penginapan
2. Pengangkutan
3. Makanan dan minuman
4. Elaun bulanan
5. Kemudahan lain (sila nyatakan jika ada): \_\_\_\_\_

Ada	Tiada

Sekian, terima kasih.

Yang benar,

.....  
**(NAMA DAN COP ORGANISASI/SYARIKAT)**

Sila faks / emailkan kembali surat ini kepada Fakulti Kejuruteraan Awam, UiTM Pasir Gudang selewat-lewatnya 2 minggu dari tarikh surat permohonan ini.

\* Potong mana tidak berkenaan.

\*\*sila tandakan (√) bagi yang berkaitan

UITM.FKA.LI-05

Our Reference: 100-UITMKPG(FKA14/3/4)  
Date: **9 JULY 2018**

To:  
**Industry Training Coordinator,  
Faculty of Civil Engineering,  
Universiti Teknologi MARA,  
Cawangan Johor Kampus Pasir Gudang,  
Jalan Purnama, 81750 Masai Johor.**

Dear Sir / Madam

**INDUSTRIAL TRAINING REPORT DUTY VERIFICATION  
SESSION MARCH 2018 – JULY 2018**

The above matter is referred.

Please be informed that the following students has reported for Industrial Training to our company / organization on **JABATAN KERJA RAYA JEMPOL** (completed by the company / organization) as stated.

<b>STUDENT NAME</b>	<b>:</b>	<b>NUR AQILAH NATASHA BINTI MOHD FADZLI</b>
<b>STUDENT NO.</b>	<b>:</b>	<b>2016492892</b>
<b>ID NO.</b>	<b>:</b>	<b>970617-59-5006</b>
<b>PROGRAMME</b>	<b>:</b>	<b>DIPLOMA IN CIVIL ENGINEERING</b>
<b>SEMESTER</b>	<b>:</b>	<b>4</b>
<b>REPORT DATE</b>	<b>:</b>	<b>9 JULY 2018</b>
<b>INDUSTRIAL TRAINING ADDRESS</b>	<b>:</b>	<b>PEJABAT JURUTERA DAERAH JABATAN KERJA RAYA JEMPOL, TINGKAT 2, KOMPLEKS PENTADBIRAN KERAJAAN DAERAH, 72120 BANDAR SERI JEMPOL, NEGERI SEMBILAN.</b>
<b>DURATION / PERIOD</b>	<b>:</b>	<b>8 WEEKS</b>

Thank you.

Yours sincerely,



.....  
(Signature and Company /Organization Stamp)

**ROSDI BIN ABU BAKAR**  
**JURUTERA DAERAH**  
**JKR JEMPOL**



**CURRENT LOCATION INFORMATION FORM**  
(Borang Matlumat Penempatan Semasa)

**A) STUDENT INFORMATION** (Matlumat Pelajar)

Name (Nama) : NUR AQILAH NATASHA BINTI MOHD FADZLI UiTM No. (No. UiTM) : 2016492892  
Programme (program) : DIPLOMA IN CIVIL ENGINEERING ID No. (No. k/p) : 970617-59-5006  
Session (sesi) : MARCH 2018 – JULY 2018 Semester (Semester) : 4  
Address (alamat) : NO 249 BLOK L, FELDA RAJA ALIAS 3, 72120 BANDAR SERI JEMPOL, NEGERI SEMBILAN.  
Phone (Telefon) : \_\_\_\_\_ Mobile No.(No. h/p) : 019-6545647  
Email (emel) : natashafadzli97@gmail.com

**B) ORGANIZATION INFORMATION** (Matlumat organisasi)

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72120 BANDAR SERI JEMPOL, NEGERI SEMBILAN.  
Contact Person (Pegawai yang boleh dihubungi) : ROSDI B. ABU BAKAR.  
Designation (Jawatan) : JURUTERA DAERAH.  
Phone (Telefon) : \_\_\_\_\_ Mobile No.(No. h/p) : 016-232 1674.  
Fax No. (No. Fax) : \_\_\_\_\_ Email (emel) : \_\_\_\_\_

Signature (Tandatangan)  
**ROSDI BIN ABU BAKAR**  
JURUTERA DAERAH  
JKR JEMPOL

13 JULY 2018

Date (tarikh)

\* Kindly mail this form to the Faculty of Civil Engineering, UiTM Pasir Gudang via fax/post/email within a week to:

Industry Training Coordinator,  
Faculty of Civil Engineering  
Universiti Teknologi MARA  
Cawangan Johor Kampus Pasir Gudang  
Jalan Purnama 81750 Masai Johor

Office use:	Checked by:		Approved by:	
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(u / p: Mohamed Khatif Tawaf, fax to: 607-3818141 or email: mohdkhatif@johor.uitm.edu.my)