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UNIVERSITI
TEKNOLOGI
MARA

UNIVERSITI TEKNOLOGI MARA

FACULTY OF CIVIL ENGINEERING

INDUSTRIAL TRAINING REPORT

DEBBIE GLORIA ANAK PETER

(2016532159)

**JABATAN KERJA RAYA BAHAGIAN MIRI
LOT 3510, MENARA 2, KOMPLEKS ISLAM SARAWAK
BAHAGIAN MIRI, JALAN PUJUT 98000 MIRI
SARAWAK**

JULY 2019

ABSTRACT

This report describe the activities that I did during my internship period at Malaysian Public Works Department (JKR) Bahagian Miri in Civil Engineering division for around 8 weeks, starting from 16 July 2019 until 08 September 2019. This company is the federal department in Malaysia under Ministry of Works Malaysia (MOW) which is responsible for construction and maintenance of public infrastructure in Malaysia especially, in Miri.

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 en-counted during construction and maintenance, how to solve it, and experience that I get from this internship programme.

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This report describe the activities that I did during my internship period at Malaysian Public Works Department (JKR) Bahagian Miri in Civil Engineering division for around 8 weeks, starting from 16 July 2019 until 08 September 2019. This company is the federal department in Malaysia under Ministry of Works Malaysia (MOW) which is responsible for construction and maintenance of public infrastructure in Malaysia especially, in Miri.

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ACKNOWLEDGEMENT

As a start, with full of my heart, I am most grateful to thank to God for blessing me with good health and ideas for completing my first 8 weeks of industrial training and this final report. I would like to thank God 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, knowledge and memories.

I would like to show my gratitude to Malaysian Public Works Department (JKR) Bahagian Miri, for having me as one of the trainees. Thank you for giving me this opportunity for completing my industrial training at JKR Bahagian Miri about 8 weeks. Started from 15th July 2019 until 08th 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.

With full of love, I would like to thank to assistant administrative officer of JKR Bahagian Miri Madam Dorothy Jenny Anak Langgong and thousands of thank to my supervisors , Mrs. Theresa Anak Andrew as Jurutera Awam at Road Department of JKR, Ms. Nurain Syamimi Binti Aju as Project Executive CMS Premix, Mr. Azjainizam Bin Bahadin as Operational Executive CMS Road, Mr. Fairol Bin Kawi as Executive Engineering CMS Road and Ms. Nurhafiza Athira Binti Mohamad as Jurutera Awam at Building Department of JKR for the guidance, experiences, knowledges and advices during my internship period. I also take this opportunity to thank to the precious person in my life, that is my parents, my family, my friends, engineers, staff and whoever involved directly or indirectly helping me to learn new things and completing my training

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Chapter 1 Introduction

1.1 INTRODUCTION

Malaysian Public Works Department (JKR) Bahagian Miri is one the federal department in Malaysia under Ministry of Works Malaysia (MOW) that responsible in any construction and maintenance of public infrastructure such as bridge and road. In JKR Bahagian Miri have three main department which are civil engineering department, electrical department, and mechanical department.

1.2 COMPANY BACKGROUND

Malaysian Public Works Department (JKR) Miri representing district of Miri. JKR Bahagian Miri is used to planning, setting up and over-watch all the federal and state projects that linked to JKR State (JKR Sarawak). Next JKR Bahagian Miri been asked to do all structure designing works for new projects. JKR Bahagian Miri need to make sure all the physical development and financial development of building projects have to be same all around the district. This means all construction have to follow JKR's specification. JKR Bahagian Miri also have to do facility works for Federal and States buildings.



Figure 1.1 Logo of JKR Bahagian Miri



Figure 1.2 JKR's Office

1.3 ORGANIZATIONAL STRUCTURE

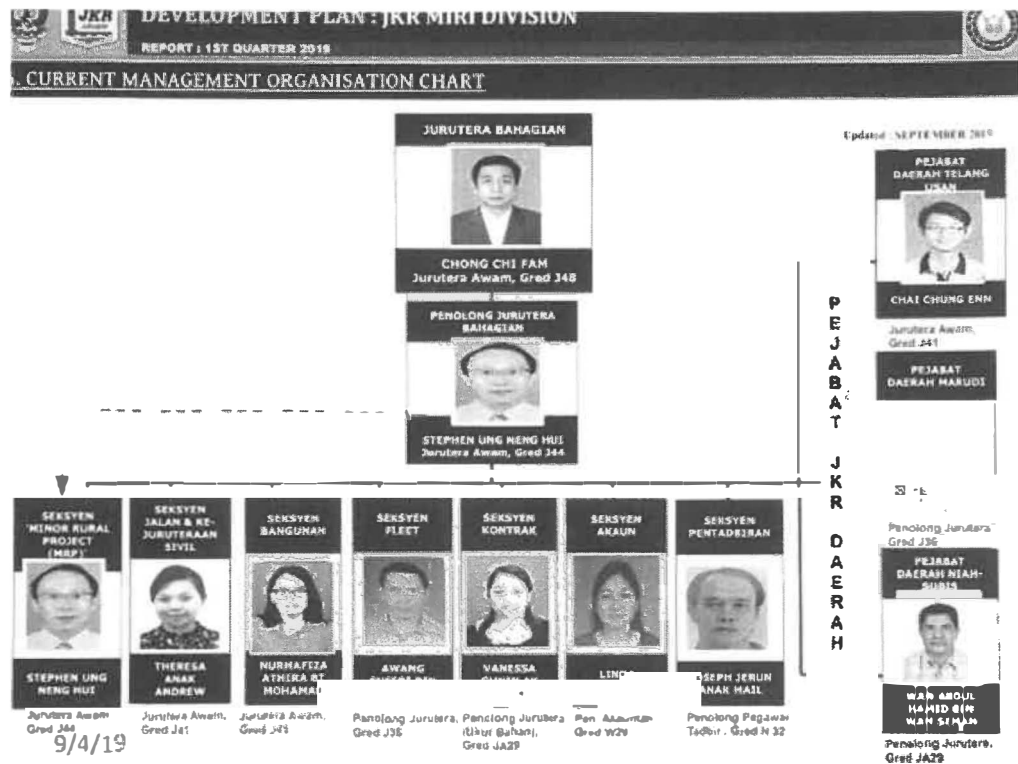


Figure 1.3 Organization of JKR Bahagian Miri

1.4 NATURE OF THE BUSINESS

In this industry, JKR is the organization that responsible to handle all project and construction which are related to public and government building or infrastructure such as road, bridge and office. JKR will received a complaint from citizen about damage or deficiency of public infrastructure, for example, sinkhole at the road and office that needs to maintenance. JKR also responsible in any upgradation and modification of public infrastructure like build a JPJ cottage and add the number of lane in road to prevent traffic jam. To ensure all damage or defect of public infrastructure were restored and goes well, JKR will release project tender and choice the best and qualified contractor to handle the project. JKR will observe and make regular inspection to make sure the construction works follow the project requirement.

1.5 PRODUCT

1. Bridge of Kampung Semuru B, Sebuti
2. Road maintenance, Kejapil
3. Inspection of Road
4. Inspection building need to maintenance

1.6 MARKET STRENGTH

Malaysian Public Works Department (JKR) Bahagian Miri is one of department that belong to government. The department has offered a very good service to customer especially citizen. Most of construction that include road and federal building have controlled by this department. This is became the objective of JKR is to ensure the contractor followed the project requirement that given by JKR and costumer. Also as government agency really concerned about the current development of information technology through the internet.

1.7 CONCLUSION

There are many important things that can be exposed to student if they joining consultants, developer or contractor. We also can gain and learn a lot of knowledge from the company that we chosen, and finally will lead us to make a decision to choose a suitable job that we interested to. Moreover, we can see the differences and similarities that we study with the outside.

Chapter 2 Training Attended

2.1 INTRODUCTION

During my industrial training, I have been exposed and experienced the real working environment either on construction site or office environment. From that, I learned a lot about knowledge in construction field and prepare paperwork before construction started. I also learned how to prepare material before meeting between contractor and JKR started and learn about what we need to do after meeting finished.

During training, I was involved with two department which are road department for 5 weeks that lead by Mrs. Theresa and building department for 3 weeks lead by Ms. Nurhafiza Athira. Among works that I do during my industrial training are :-

- i. Study Design Pavement
- ii. Inspection road after construction works finished
- iii. Form-work and framework inspection
- iv. Bridge inspection.
- v. Inspection building before maintenance

2.2 TRAINING ATTENDED.

Weekly	Explanation/Activities
<u>Week 1</u> 15/07/2019 Until 18/07/2019	<ul style="list-style-type: none">● On the first day on this week, I arrived at Malaysian Public Works Department (JKR) Bahagian Miri at 8.00 am. Then, we have been briefed little bit about the company by Mrs. Dorothy Jenny Anak Langgong as assistant administrative officer. After that, Mrs. Dorothy introduce Mrs Theresa as my supervisor at Road department. I do some revision and studied about road construction as my preparation for my industrial training at JKR Bahagian Miri because I have been placed to road department by Mrs Dorothy. For this week, I went to a few construction site under JKR Bahagian Miri.● I've been exposed further to the process of road pavement design. I've been assigned to do research about the related data involved in and carrying out the calculation from the pavement design. Besides, I was required to prepare a slide regarding the pavement design. The design was fully according to JKR manual "Arahan Teknik Jalan".● Firstly, I went to my first site visit for industrial training at Jalan Sibuti with Mrs. Theresa and some sub-contractor leaders. We just did a road inspection. On one of the days I had been joining to do some road inspection and road distance measuring in Bekenu, Miri as well as in Rural Growth Centre Long Lama.● Also, I had been joining a meeting with the DAL HCM Miri sub-contractor regarding the approval of the asphalt design mix. Lastly, I did get the chance to go through road technical drawing and also reading the road work specifications manual by JKR.



Figure 2.1 show I've been assigned to do research about pavement design.



Figure 2.2 show I had been joining a meeting with the DAL HCM Miri.



Figure 2.3 show I had been joining to do some road inspection.

<p><u>Week 2</u> 23/07/2019 Until 26/07/2019</p>	<ul style="list-style-type: none"> ● On the second week, I had learn on how to do the tender evaluation process. The evaluation was being done based on the JKR requirements where the tenders must submit all the required document inorder to be eligible for the bidding of the tender. Also, I helped staff JKR to make a copy of new contracts. ● Next, I've seen the construction of RSJ Bridge. I observed the work of making the reinforcement of the abutment using high tensile steel, Y-16 and also the welding of the handrail of the bridge. Besides, I also observe the making of formwork of the abutment. After having a look at the bridge construction, in this week I also have the chance to see the premix laying and compaction work in the Bekenu area. ● The day after then I went together with the surveying team to carry out some surveying works for the purpose of levelling and also cut and fill. ● Last for this week, I've been moving to CMS Premix Sdn Bhd which is the main contractor for JKR Miri and being brief by my Project Executive, Ms. Nurain Syamimi Binti Aju about the work program. Also in the afternoon we went to visit the site where the premix had being laid in that area.
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Figure 2.4 show I've seen the construction of RSJ Bridge.



Figure 2.5 show the making of formwork of the abutment.



Figure 2.6 show the surveying team to carry out some surveying works.



Figure 2.7 show the premix had being laid.

<p><u>Week 3</u> 29/07/2019 Until 02/08/2019</p>	<ul style="list-style-type: none"> ● On the third week of industrial training, I had been asked to go to Cahaya Mata Sarawak (CMS) Premix Sdn.Bhd. CMS Premix is the main contractor of JKR. Most area covered by CMS Premix Miri Division for Premix laying is in Miri,Bintulu, Limbang and Lawas. In Miri itself, the main area that always being covered is the Bekenu district, Niah,Suai and central city of Miri. ● In this week I had been having the opportunity to do the financial report progress summary based on the given master work program. ● Besides, together with our site supervisor and also project executive we did some road distance measuring on 3 sites which are at Niah, Bekenu , Sekaloh and also at Miri Government Quarters. Our site supervisor decided to measure by using car while holding the distance measurer because the distance of the unlined road is quite far. In Niah district the unlined road after being laid with premix is as long as 2.4km ,meanwhile in Sekaloh district is as far as 0.51km and lastly at Bekenu district is as far as 0.42km.
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Figure 2.8 show district the unlined road after being laid with premix

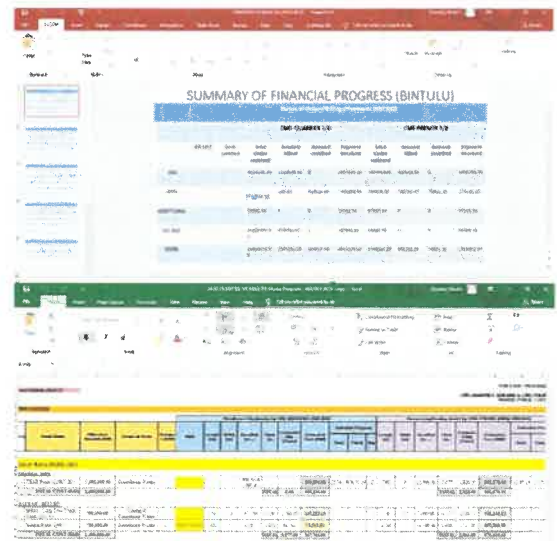


Figure 2.9 show the financial report progress summary



Figure 2.10 show Premix laying work.



Figure 2.11 show measure by using car while holding the measuring roller.

<p><u>Week 4</u></p> <p>05/08/2019</p> <p>Until</p> <p>09/08/2019</p>	<ul style="list-style-type: none"> ● This week our first day in new place which is Road Maintenance Unit, Cahaya Mata Sarawak(CMS) Road Sdn Bhd. Thus the Safety Officer. ● Mr Awan Apeng brief us regarding the safety before we go for site visit. Besides , we did go through few Quality Assurance report done. We had been explained regarding the Health Safety Environment covering: <ol style="list-style-type: none"> 1) OSHA ACT-1994(512) 2) Factory Machinery Act (FMA) ACT -1967 3) Environment 4) Neutral Environment River Board (NERB) 5) CIDB 6) DOE ● Besides , I was also doing some grass cutting work report updating and reading the work performance standard by JKR that being followed by CMS. ● Lastly, I went to the site to see and experience the work of Shallow patching at Kejapil road in Bekenu, Miri. ● On Friday I did attend the weekly operational schedule meeting together with the Operational Executive and all the crew supervisors.
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Figure 2.12 show the Health Safety Environment

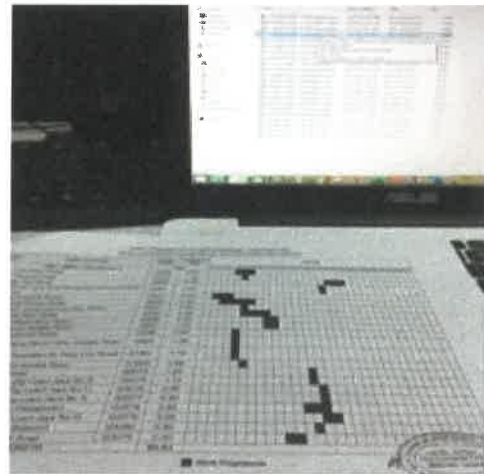


Figure 2.13 show grass cutting work report updating



Figure 2.14 show the work of Shallow patching



Figure 2.15 show the weekly operational schedule meeting

<p><u>Week 5</u></p> <p>13/08/2019</p> <p>Until</p> <p>16/08/2019</p>	<ul style="list-style-type: none"> ● Every early of week, all the crew supervisors who works on the site will attend the safety briefing. On this day our Senior Operation Executive .Jackson Labut told the crew supervisors to drink adequate amount of water and to use mask when going to site. ● This is because at this moment Miri is experiencing terrible haze which makes the Air Pollution Index(API) to be have very high reading and indicating hazardous sign towards the people especially in Kuala Baram Area. ● Besides, the crew supervisors also being advised to take care of their own health and if the haze was just so worse then they shall stop carrying out the work on site and postpone it. After all, they were reminded to wear PPE all the time while carrying out the maintenance work on site. ● Besides, I did some tender evaluation works for two projects on this week. JKR received as much as 35 tenders from different contractors for 2 projects.
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Figure 2.16 show Senior Operation Executive .Jackson Labut briefing about safety.



Figure 2.17 show Operation Executive reminding to wear PPE all the time while carrying out the maintenance work on site.

<u>Week 6</u> 19/08/2019 Until 23/08/2019	<ul style="list-style-type: none"> ● On the sixth week of industrial training, I had been asked to go to Building Department. Then, we have been briefed little bit about the project of building by Ms. Nurhafiza Athira Binti Mohamad as Jurutera Awam at building department. ● Besides, I helped staff to finish office work such as make a copy for new tender.
<u>Week 7</u> 26/08/2019 Until 30/08/2019	<ul style="list-style-type: none"> ● On this week, I had learn on how to do the tender evaluation process of building department and quiet similar with tender at road department. The evaluation was being done based on the JKR requirements where the tenders must submit all the required document inorder to be eligible for the bidding of the tender. ● Also, I helped staff JKR to make a copy of new contracts. ● The day after then, I went to site at Skaloh to do some building inspection with site supervisor, Encik Bujang.
<u>Week 8</u> 03/09/2019 Until 06/09/2019	<ul style="list-style-type: none"> ● This week, I can't do much work. ● I helped staff to finish office work such as make a copy for new tender. ● I did some tender evaluation works for two projects on this week.



Figure 2.18 show JPJ Office, Skaloh.



Figure 2.19 show main office of JPJ.



Figure 2.20 show the inside of office JPJ



Figure 2.21 show I measure the floor to maintenance.



Figure 2.21 show floor need to maintenance



Figure 2.23 show location of water tank need to upgrade.

2.3 CONCLUSION

During my 8 weeks industrial training at JKR Bahagian Miri, there are so many construction site that I went . Other than that, there are so many construction work and building inspection. I also have been exposed to a few office work such as evaluate tender 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 JKR Bahagian Miri whether knowledge that I learned from the construction site or 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

During 9 weeks of industrial training at Jabatan Kerja Raya (**JKR**) Bahagian Miri, I have been involved in many construction such as road maintenance construction and bridge construction. For road maintenance construction, I get involved construction at Kejapil, Bekenu Road. The contractor in charge for this project is Cahaya Mata Sarawak (CMS) Roads. The purpose of this project is to observe the shallow patching work . While for bridge construction, the I get involved bridge construction at the Bekenu road area. For this project, the contractor in charge is JKR Miri and the purpose of this project is to build new main bridge at Kampung Semuru B, Sibuti Bekenu.

All project have their own due date. So, for JKR, they need to make sure all construction works follow the JKR's standard guideline and finish on time. If the construction works 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.

KNOWLEDGE

1. List of Statutory & Regulatory Acts / Guide Book



HEADQUARTERS
 19, Jalan 1/10, Seksyen 10, 40100
 Putrajaya, Malaysia
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

Website
www.cms.com.my/road

SOUTHERN REGION
 Regional Office
 11, Jalan 1/10, Seksyen 10, 40100
 Putrajaya, Malaysia
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

Road Maintenance Unit
 19, Jalan 1/10, Seksyen 10, 40100
 Putrajaya, Malaysia
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

NORTHERN REGION
 Regional Office
 11, Jalan 1/10, Seksyen 10, 40100
 Putrajaya, Malaysia
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

Road Maintenance Unit
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 Putrajaya, Malaysia
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

BOUTIQUE TANJAYA
 Tel: 06-2311 5555
 Fax: 06-2311 5555
 E-mail: info@cms.com.my

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List of Statutory & Regulatory Acts / Guide Books (updated at 19.10.05)

- 1) Employment Provident Fund Act (Act 452) & Regulations and Rules
 at 20th June 2003
- 2) Employees' Social Security Act 1969 (Act 4) & Regulations and Rules
 at 20th June 2003
- 3) Workmen's Compensation Act 1952 (Act 273) & Regulations and Orders
 at 10th July 2004
- 4) Employment (Restriction) Act 1968 (Act 353) & Regulations and Orders
 at 01st August 2002
- 5) 2004 Handbook for employers and employees in the private sector
 (16th Edition; R.P. Baskaran)
- 6) Akta Kerajaan Tempatan 1976 (Act 171) & Perundangan Subsidiari
 Hingga 10hb Oktober 2003
- 7) Local Government Act 1976 (Act 171) & Subsidiary Legislation
 at 25th July 2003
- 8) Town and Country Planning Act 1976 (Act 172)
 at 25th June 2003
- 9) Factories and Machinery Act 1967 (Act 139) & Regulations and Rules
 at 15th April 2004
- 10) Occupational Safety and Health Act 1994 (Act 514) & Regulations and Orders
 at 25th June 2004
- 11) Environmental Quality Act 1974 (Act 127) & Subsidiary Legislation
 at 05th August 2003
- 12) Contracts Act 1950 (Act 136), Contracts (Amendment) Act 1976 (A329)
 & Government Contracts Act 1949 (Act 120)
 at 15th April 2004
- 13) Uniform Building By-Laws 1984 [G.N. 5178/85]
 at 20th May 2003
- 14) Road Transport Act 1987 (Act 333) & Commercial Vehicles Licensing Board
 Act 1987 (Act 334)
 at 10th October 2002
- 15) Road Transport Rules [Compilation of 45 Rules]
 at 01st July 2004



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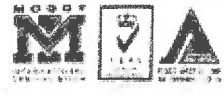
- 16) Warta Kerajaan Seri Paduka Baginda (Akta Keselamatan dan Kesihatan Pekerjaan 1994)
a. 22hb April 2004
- 17) Laws of Malaysia : Akta Lembaga Pembangunan Industri Pembinaan Malaysia 1994 (Akta 520)
- 18) The State Public Service General Orders, 1996 (Swk. L.N. 1/96)
- 19) Companies Act 1965 (Act 125) & Subsidiary Legislations
a. 05th March 1995
- 20) Federal Constitution
(Incorporating all amendments a. 01st January 1999)
- 21) Malaysian Labour Laws Made Simple
By K. Rajkumar; Pelauduk Publications 1999
- 22) A Handbook of Malaysian Labour Laws
By M.N. D'Cruz, Leeds Publications 2004
- 23) MS ISO 10012: Part 1 : 1994
Quality Assurance Requirements for Measuring Equipment :
Part 1 - Metrological Confirmation System for Measuring Equipment
- 24) MS ISO 10012: Part 2 : 1994
Quality Assurance Requirements for Measuring Equipment :
Part 2 - Guidelines for Control of Measuring Processes
- 25) MS ISO 14004 : 1997
General Guidelines on Principles, Systems an Supporting Techniques
- 26) MS ISO 14015 : 2003
Environmental Management - Environmental Assessment of Sites
and Organisations (EASO) (ISO 14015 : 2001, IDT)
- 27) MS ISO 14031 : 2001
Environmental Management - Environmental Performance Evaluation
- Guidelines (ISO 14031 : 1999, IDT)
- 28) MS ISO 14050 : 2001
Environmental Management - Vocabulary (ISO 14050 : 1998, IDT)
- 29) MS ISO 19011 : 2003
Guidelines for Quality and/or Environmental Management Systems Auditing
(ISO 19011 : 2002, IDT)
- 30) OHSAS 18001 : 1999
Occupational Health and Safety Management Systems - Specifications



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Registration No. 1001-1-0001-0001-0001-0001
No. 0107/0001-0001-0001-0001-0001-0001

- 31) OHSAS 18002 : 2000
Occupational Health and Safety Management Systems - Guidelines for the implementation of OHSAS 18001
- 32) MS ISO 14001 : 2004
Environmental Management Systems - Requirements with guidance for use (First Revision) (ISO 14001:2004, ID1)
- 33) MS ISO 14004 : 2004
Environmental Management Systems - General Guidelines on Principles, Systems and Support Techniques (First Revision) (ISO 14004:2004, ID1)
- 34) Natural Resources and Environment Ordinance, Chapter 84 (Laws of Sarawak 1958 Edition) (Incorporating all amendments up to 01st June 2001)
by NREB, Sarawak
- 35) Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Disease) Regulations [NADOOPOD]
- 36) The Natural Resources and Environment (Prescribed Activities) Order 1994 (Incorporating all amendments up to 31st December 1995)
by NREB, Sarawak
- 37) A guide to the Malaysian Code of Practice on Sexual Harassment in the Workplace
by Tengku Dato' Omar B. Tengku Bot & Maimunah Aminuddin
- 38) MS 1722 : 2003 Occupational Safety & Health Management System (Guidelines)
- 39) How to Conduct a Domestic Inquiry, with relevant Industrial Court Citations
by Latiff Sher Mohamed
- 40) Labour Ordinance (Sarawak Cap. 76)
(Amended as at 10th February 2005)
By Act A 1237
- 41) Arahan Teknik (Jalan) 2A/85 - Manual on Traffic Control Devices
- 42) Arahan Teknik (Jalan) 2C/85 - Manual on Traffic Control Devices, Temporary Signs and Work Zones Control
- 43) Health at work - A Handbook for people who work
By David Koh, Lee Hock Siang, Lee Lay Tin and Koh Yang Huang
- 44) Sewage Services Act & regulations (Act 508), updated to June 2002
MHC Publishers Printers Sdn Bhd
- 45) Environmental Quality Act 1974 (Act 127) & Subsidiary Legislation
at 05th January 2005



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- 46) Fire Services Act and Regulations (Act 341), 1994
all amendments up to August 2002
MDC Publishers Printers Sdn Bhd
- 47) Project Quality Assurance Plan (PQAP) for The Management and Maintenance of State Roads in Sarawak (Contract No : PWD / HO / B27 / 2003)
- 48) Jabatan Kerja Raya, Construction Supervision Manual for Contract Roadworks
- 49) JKR Standard Specification for Roadworks (Including Bridge Structures)
- 50) Addendum No. S-1 (Rev. 1), to Jabatan Kerja Raya Standard Specification for Roadworks (JKR/SPJ 1988), for use in JKR Road Contracts in Sarawak
October 1997
- 51) Guidelines for the preparation of a chemical register, Under the Occupational Safety and Health (Use and Standard of Exposure of Chemicals Hazardous to Health) Regulations, 2000, P.U. (A) 131
Department of Occupational Safety and Health, Ministry of Human Resources Malaysia, 2000
- 52) Garis Panduan Penyediaan Dokumen Demonstrasi Operasi Selamat (AM),
Jabatan Keselamatan dan Kesihatan Pekerjaan, Kementerian Sumber Manusia Malaysia 2001
- 53) Guidelines for labelling of hazardous chemicals
Department of Occupational Safety and Health, Ministry of Human Resources Malaysia 1997
- 54) Guidelines on Occupational Safety and Health in the office
Department of Occupational Safety and Health, Ministry of Human Resources Malaysia
- 55) Guidelines for the classification of hazardous chemicals
Department of Occupational Safety and Health, Ministry of Human Resources Malaysia
- 56) Guidance for the prevention of stress and violence at the workplace (Panduan bagi pencegahan tekanan dan keganasan di tempat kerja)
Department of Occupational Safety & Health Malaysia, Ministry of Human Resources Malaysia
- 57) Guidelines on reproductive health policy and programmes at the workplace
Department of Occupational Safety and Health, Ministry of Human Resources Malaysia 2002
- 58) Guidelines on the control of chemicals hazardous to the health
Industrial Health Division, Department of Occupational Safety & Health, Ministry of Human Resources Malaysia 2001

2. Long-Term Management and Maintenance Of State Roads in Sarawak

Long-Term Management & Maintenance of State Roads in Sarawak
JABATAN KERJA RAYA SARAWAK

ROAD MAINTENANCE MANAGEMENT SYSTEM										PERFORMANCE STANDARD			
WORK ACTIVITY		SHALLOW PATCHING								CODE: 3018			
DESCRIPTION										PERIODIC			
<p>Repair paved surface using equipments, hand tools, labour and hot-mix asphalt to maintain a smooth and safe riding surface. Defects usually comprise bleeding, minor corrugations, minor rutting, interconnected cracks, shallow rutting, crescent-shaped cracks, delamination, potholing, breakups or/and edge cracks. However, the distress does not extend to base and underlying layers.</p>													
PERFORMANCE SCHEDULING CRITERIA		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			X	X	X	X	X	X	X	X	X		
<p>Perform when surface is dry and whenever it shows slight extent of distress. Defects should be repaired before severe surface deformation, crackings and surface distresses occur. Even though this activity can be carried out throughout the year, emphasis and planning should be made to ensure that this activity is carried out mainly in the Dry season.</p>													
LABOUR		Qty	Unit	WORK STEPS									
Crew Supervisor		1.0	person	<ol style="list-style-type: none"> 1. Ensure all safety and traffic management devices are in place; 2. Mark the areas to be repaired at least 100mm outside of damaged area; 3. Excavate and clean the hole. Excavated materials shall be disposed to a suitable site; 4. Form vertical sides and remove loose material, water, mud and etc; 5. Be sure the base is level, firm and dry; 6. Apply light coat of asphalt emulsion evenly on sides and bottom; 7. Place and compact the hot bitumen mix in layers and each paving layer shall have a compacted thickness of not less than twice the nominal maximum aggregate size of the hot-mix asphalt, and not more than 100 mm. 8. Compact each layer to specification; 9. Check final layer with straight edge; 10. Sweep up loose debris and dispose to a suitable site; 11. Remove safety devices. 									
Operator		1.0	person										
Driver		2.0	person										
Labourer		5.0	person										
EQUIPMENT		Qty	Unit	REMARKS <ol style="list-style-type: none"> 1. Hot-mix Asphalt: ACWC14 or equivalent; 2. For prime coat prior to placing binder course, cut-back bitumen of grade MC-70 conforming to MS 159 or any equivalent shall be used. Application rate shall be between 0.5 and 1.0 litre/m²; 3. For tack coat prior to placing wearing course overlays binder course, bitumen emulsion of grade RS-1K conforming to MS 161 shall be used. Application rate shall be between 0.25 and 0.55 litre/m²; 4. Detailed material specification and work steps shall conform to JKR Standard Specification for Road Works JKR/SP/J2008-S4 Sub-Section 4.3 Bituminous Pavement Courses or any latest prevailing revision; 5. Minimum compacted thickness shall be 50 mm. 									
Backhoe Excavator (80 HP min.)		1.0	Nr.										
Bituminous Pressure Distributor		1.0	Nr.										
Pavement Cutter (20 HP min.)		1.0	Nr.										
Pneumatic Roller (0.7 tonnes min.)		1.0	Nr.										
Pickup		1.0	Nr.										
Plate Compactor (8 HP min.)		1.0	Nr.										
Tipper Lorry (20 tonnes)		1.0	Nr.										
Tipper Lorry (5 tonnes)		1.0	Nr.										
MATERIALS		Qty	Unit	REMARKS <ol style="list-style-type: none"> 1. Hot-mix Asphalt: ACWC14 or equivalent; 2. For prime coat prior to placing binder course, cut-back bitumen of grade MC-70 conforming to MS 159 or any equivalent shall be used. Application rate shall be between 0.5 and 1.0 litre/m²; 3. For tack coat prior to placing wearing course overlays binder course, bitumen emulsion of grade RS-1K conforming to MS 161 shall be used. Application rate shall be between 0.25 and 0.55 litre/m²; 4. Detailed material specification and work steps shall conform to JKR Standard Specification for Road Works JKR/SP/J2008-S4 Sub-Section 4.3 Bituminous Pavement Courses or any latest prevailing revision; 5. Minimum compacted thickness shall be 50 mm. 									
Hot-mix Asphalt Wearing Course		6	Cu M										
Prime Coat (MC-70 or equivalent)		120	L										
AVERAGE DAILY PRODUCTION													
<p>120 square metres repaired</p>													
DESIRABLE SERVICE LEVEL													
Cond. 1	Cond. 2	Cond. 3	Unit										
30	150	60	square metres/m										
EFFECTIVE		Jan 2016		REVISION		0							

3.2 PROBLEM ENCOUNTERED AND HOW OVERCOME

No	Problem	How To Overcome
1.	<p><u>Wrong type of material used.</u></p> <p>As JKR, we need to ensure all project under them were conducted follow the rules and all project requirement that given by JKR and client. However, there are still a few problem that caused by contractor.</p>	<p>To overcome this problem, we need to explain clearly to contractor why we choose this type of material and advantage of the material that have been choosen. Other than that, JKR need to make regular inspection for any structure at construction site such as framework to ensure all construction works are conduct follow the project requirement.</p>
2.	<p><u>Traffic jam</u></p> <p>During the road construction such as road reconstruction and asphalt overlaying process will cause the traffic or vehicle around construction site move a little bit slower than normal because the road will be close for a while. So, it will disturbed movement of traffic at that road.</p>	<p>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.</p>

Table 3.1 Problem Encountered And How Overcome

3.3 EXPERIENCE GAINED

The experience that can gain for all project that I involved during my industrial training at JKR Bahagian Miri is to know how to handle the construction work . 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 contractor and overcome with problem that comes. I can study how to evaluate tender to see the careless subcontract details. To overcome the problem must be more carefully and be smart to solve the problem and to with a good way.

Finally, know how to thinks positive during do work. Positive thinking can make our work smoothly at the same time can decrease the time for the project to finish. The negative thinking may bring more work to and it will become more complicated.

3.4 CONCLUSION

As the conclusion, any project or work that wants to handle must be planned perfectly before we start it. If the project were plan in wrong way, an accident can happen any time and it does also can involve.