

CENTER OF STUDIES IN BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
SERI ISKANDAR

RURAL ROADS MAINTENANCE AT KAMPUNG TEPI ALOR,
MUKIM NAGA, KEDAH

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This practical training report is fulfilment of the practical training course.

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CHAPTER 1: INTRODUCTION

1.0 Introduction

Industrial training is an important course for students in certain programs at all levels of higher education. The purpose of industrial training is to expose the students to the real industry after graduates and give opportunities in the workplace to receive practical experience to improve the skills.

This course provides exposure and experience to the students in terms of technology development, effective communications, teamwork practices, policies, procedures and regulations, professional perspectives, and reporting. This course will build enthusiasm and proactive attitude among students and increase their confidence to practice professional ethics in work.

Overall, industrial training provides benefits to student. During the training period, students are exposed to a variety of activities in the field of duties, even though the job is not done entirely by students for the purpose of security or regular students were briefed and clear guidance and useful enough as a general knowledge, as well as exposed to the real working environment and they can learn social skills such as communication and social relationships.

For this semester, I, myself, Rashdan Munir bin Badrul (2018298316), has started working in the Pejabat Daerah dan Tanah Kubang Pasu as an internship student from 11th October 2021 until 30th January 2022.

1.1 Purpose of Industrial Training

The purpose of this industry training is to provide exposure to trainee about job environments and provide opportunities for trainee to gain experiences over the course of 14 weeks of industrial training. In addition, the trainee also can apply the knowledge previously learned and the way of working in a rational and far-sighted way to produce graduates with skills and expertise in line with the needs of an organization.

1.2 Objective of Industrial Training

- ✓ To provide comprehensive learning platform to students where they can enhance their employability skills and become job ready along with real corporate exposure.
- ✓ Industrial training will increase a student's sense of responsibility and good work habits.
- ✓ To increase self-confidence of students and help in finding their own proficiency.
- ✓ To cultivate student's leadership ability and responsibility to perform or execute the given task.
- ✓ To provide learners hands on practice within a real job situation.

1.3 Objective of Compulsory Practical Training Report

Compulsory Practical Training Report is an important document for every student that undergoes a practical training. It is a document with an activity that has been learned during the whole period of practical training. If the task given is well handled and has done greatly, it would not mean anything if it does not record in the report. Thus, writing a report needs a thorough and special attention to every student so that the instructions are able to follow and meet the university and organization needs. There are few objectives of preparing a compulsory training report, such as:

- To use this report as proof to university that student has undergone practical training at the organization.
- To record all the activities that are being carried out throughout the fourteen (14) weeks of duration of practical training.
- To train students to follow the instruction made by the university as a requirement for compulsory practical training.
- To be a reference for future employer when attending a job interview after graduating.
- As a guidance or reference to student after completed studies.

1.4 Importance of Industrial Training

- Industrial training is to expose students to the working environment in industry. So, it will enable students to understand the theories studied with more detailed and hands on practice within a real job situation.
- Through this industrial training, all students will be given exposure fully within the real job situation. In addition, it can help students to gain their self-confidence and discover their own ability. It can also be a preparation or a preview to working environment later in future. In addition, students also participate in teamwork from different ages in which we need more mature and open-minded when at work.
- Students will also be able to familiarize themselves with receiving the advice and comply with all directions given employers and able to do a job that is entrusted with complete besides being responsible and dedicated employees.
- Students will be able to foster the spirit is always there to do almost any job and indirect new students also gain experience in their respective fields before to face real working environment.
- Finally, through this industrial training student can take this as a challenge and test their perseverance and thinking abilities when facing a decision-making situation.

1.5 Logo of Agencies



Figure 1.1: Flag of Kedah

Table 1.1: General Information of Kedah's Flag

No	General Information	Descriptions
1	Escutcheon	The escutcheon, a yellow Swiss shield, signifies the government's strength and symbolises the government's position as defender and guardian of its people and all the people of Kedah from unlawful rule. Furthermore, the shield represents power and authority.
2	Crescent	The green crescent underneath the shield, which points upwards towards the shield, represents Islam as the state's official religion.
3	Wreath	Two stalks of rice are strung together and encircle the shield and crescent in the wreath. It symbolises rice as the state's main product.

1.6 Location & Background of Company



Figure 1.2: Pejabat Daerah Kubang Pasu

The Kubang Pasu District is a district in northern Kedah, Malaysia. It contains the border town of Bukit Kayu Hitam as well as the educational hub of Changlun, while Jitra is the largest town and administrative centre of the district. The district council had been upgraded into municipal council on 22 October 2018, become the fifth city or municipal in the state. This district is unique in that it is both an international border area (Malaysia-Thailand) and a state border (Arau, Perlis). Historically, Tunku Anum Tunku Abdul Rahman, who had succeeded in liberating Kedah from Siamese occupation, was given control of Kubang Pasu. Tunku Anum was given the authority to rule the State of Kubang Pasu, which he later renamed 'Kubang Pasu Darul Qiyam,' which means a State that stands upright or independently, with the administrative centre located in Pulau Pisang at the time.

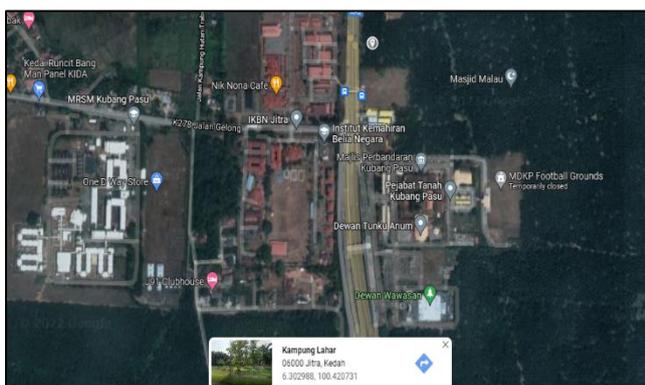


Figure 1.3: Location Plan of Kubang Pasu District Office



Figure 1.4: Site Plan of Kubang Pasu District Office



Figure 1.5: Logo Pejabat Daerah Dan Tanah Kubang Pasu

Table 1.2: General Information of Organisation

NO	GENERAL INFORMATION	DESCRIPTION
1	Company Name:	Pejabat Daerah Dan Tanah Kubang Pasu
2	Company Address:	Kompleks Pentadbiran Daerah, 06000 Jitra, Kedah
3	Office Phone Number:	04-7028282 (Daerah) 04-7028383 (Tanah)
4	Fax:	04-7028292 (Daerah) 04-7028393 (Tanah)
5	Email:	pdkp@kedah.gov.my
6	Website:	https://webpdkp.kedah.gov.my/

The district office in Kubang Pasu is divided into two units which is the Administrative Unit and the Development Unit. Each unit is responsible for its own scope of work. The functions of these units are:

ADMINISTRATION UNIT

- Actively mobilize the involvement of residents 'representatives such as the Village Security Committee (JKKK), residents' associations, youth associations, mosque institutions, suraus and huts for information programs on Federal and State Government policies.
- Ensure and establish appropriate control mechanisms so that public expenditure allocated for the purpose of development and well-being of the people achieves the impact and objectives outlined by the Federal and State Governments.
- To improve weaknesses and shortcomings in financial matters, especially in the collection of tax revenue, non-tax revenue, other receipts and identify new sources of revenue for the sustainability of the State Government treasury.
- To ensure that aspects involving the well-being of residents, the creation of business opportunities that can be joined by traders / hawkers, compliance with acts and by-laws as well as the happiness of the city / district can be enjoyed by all residents without discrimination in terms of politics, religion, and culture.
- To make the planned programs can be implemented and understood by the residents and preferably made a way of life in accordance with current developments.
- To plan and implement programs related to the safety and well-being of the population, especially in housing estates, traditional villages, etc. through the implementation of the Safe City program and 'Local Agenda 21' jointly organized between departments / agencies at the district level.
- Provide consulting services to parties interested in developing the Kubang Pasu district by considering the technical and investor-friendly needs through a 'business oriented' approach and less bureaucracy.

DEVELOPMENT UNIT

- Give more serious attention in the maintenance of basic facilities and existing rural facilities to ensure the continuity of services to the people.
- Focus on new development planning as a 'catalyst' or catalyst to development growth in Kubang Pasu district and surrounding areas.
- To ensure that the development landscape in Pekan Kubang Pasu is always balanced with development at the level of small towns focused on the local community.
- Continuously improve the living standards of community groups in need of assistance through the distribution of assistance to improve the quality of life and other initiatives organized by the government.
- Identify, plan and maintain public infrastructure facilities projects of a short-, medium- and long-term nature for key areas at risk of floods / flash floods while minimizing and resolving the issue of floods or natural disasters.
- Balancing and ensuring relative development in the areas of Traditional Villages, Structured Villages and Siamese settlements throughout the Kubang Pasu district.
- Provide a list and identify public facilities and public buildings that have not been provided in the Kubang Pasu district such as district courts, district hospitals, higher education institutions, district public transport stations and so on.
- Maintain and upgrade periodically and collectively all public halls under the management of Kubang Pasu District Office and Kubang Pasu District Council as temporary settlement centers during floods or natural disasters and community activities.
- To ensure that the lighting and maintenance of streetlights work well whether in protocol roads, city roads, park roads and villages around the Pendang district, especially in the district administrative center, business areas, tourism and public focus.
- To ensure the planning and development of properties in this district in accordance with the plans of the Kubang Pasu District Council based on the Local Plan provided.
- Identify and introduce development prospects in Kubang Pasu district in addition to working with government departments and agencies for development project opportunities based on departmental / agency planning under the Malaysia Plan and State Government development programs

1.6.2 Organisation Chart of District Development Division

DISTRICT DEVELOPMENT DIVISION
KETUA PENOLONG PEGAWAI DAERAH N46
MUHAMMAD ZAINOL FIKRI BIN HJ MD NOOR

PHYSICAL DEVELOPMENT UNIT	COMMUNITY DEVELOPMENT UNIT
PENOLONG JURUTERA JA29	PENGHULU NP36/NP32
1. FARAH WAHIEDA BINTI ABD WAHAB 2. DALYLA AJLEA BINTI AZHAR 3. SITI KHATIJAH BINTI GHAZALI 4. HJ AZIZUL BINTI SOBRI	1. ABD KHALID BIN EMBI 2. SIDIK BIN SAIDIN 3. MUHD EFFANDY BIN SHAARI 4. MOHD ZAMKHOHASRI BIN AHMAD 5. SULAIMAN BIN HASHIM 6. AZAHARI BIN SHAFIE 7. NAZLAN BIN OMAR 8. MUHD RIDUAN BIN ISMAIL 9. MOHD HELMEY BIN MD SAAD 10. MOHD AMIRUL ISHAK BIN AMIR 11. YUSUB BIN SAAD 12. AMRAN BIN HANAFIAH
PENOLONG AKAUNTAN W29	
1. NORZITA BINTI MARZUKI 2. AZLIDA BINTI SAREH AZMEE	
PEMBANTU TADBIR (P/O) N22	
1. MALEK BIN ALI	
PEMBANTU TADBIR (P/O) N19/N22	
1. ISMAHANIE BT ISMAIL 2. WAN NUR HASYIMAH BINTI MEGAT HASSAN 3. SITI MUSLIHAH BINTI ABD RASHID 4. NURULHUDA BINTI MOHAMAD RAFI 5. FATHIN MAZIYYAH BINTI ZAMBRI 6. ROSLI BIN SABRI 7. NURAZIAH BINTI HAMID	

1.6.3 Vision, Mission and Motto of Company

Vision	Being an excellent and glorious district administrative agency.
Mission	To complete basic facilities, infrastructure, and develop the people's socio-economy through people's agreement for the advancement of the district, state, and people's well-being.
Motto	Towards excellence in services for the development and welfare of Kubang Pasu district people

1.6.4 Objectives of Company

Objectives of Kubang Pasu District Office:

- Is the district's main office, responsible for the well-being, harmony, and peace of all people in the Kubang Pasu district, as well as the state and country in general.
- The Kubang Pasu District Office places a premium on the socioeconomic development of the population over material gain.
- The Kubang Pasu District Office is a place where people can complain, seek assistance, and discuss the socioeconomic and well-being of the ummah, regardless of race or ethnicity.
- The Kubang Pasu District Office also serves as a coordinator for district-level departments.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Rural areas are home to roughly half of the world's population. The rural road is critical to the overall development of these areas. It improves accessibility and mobility for rural residents by establishing economic, physical, social, and political ties and facilitating the exchange of urban products and rural raw materials. Although different projects bring different returns, the investment in rural roads brings greater economic impact ahead of education, agriculture and health. Rural Roads are a road network that is not in an urban setting. These are roads with a low traffic volume, which connect different communities, provide market access to farms and farmland and have lower design speed. Rural roads are generally owned by local authorities (Bhandari, 2013).

Roads are part of transportation infrastructure systems that benefit humanity. They create critical links between intended markets, factories, and production centers, and they stimulate economic growth in the form of job opportunities, as well as social, health, and educational benefits. All of these things are beneficial in the fight against poverty. While road construction costs a lot of money, without proper maintenance, the roads wear out quickly. The most common method of evaluating the performance of construction projects is to determine whether the projects were completed on time, within budget, to the required technical specifications, and to the satisfaction of the client. When stakeholders meet their individual and collective requirements, high project performance is achieved (Wandiri & James, 2020).

2.1 Rural Road

Rural road development is always a top priority in road management around the world. Rural roads are classified as state roads in Malaysia, and they account for the lion's share of the country's road network. Rural roads are one of the most effective approaches for improving local economies; green practices on rural roads may also have a positive impact on the social, economic, and environmental conditions of the surrounding areas. The management and maintenance of rural roads in Malaysia is critical because it benefits village people in a variety of ways (Mustafa et al., 2021).

The term "rural roads" is frequently misused. Some countries use it to refer to any road that is not a national or secondary road. Others group tertiary roads, which are part of the publicly owned network, with other local roads that are not under the government's authority. Rural roads have been defined as all publicly owned roads whose primary function is to provide direct access to economic and social services to rural villages and communities. In the other hand, it also has other definition; road which connecting villages and remote settlements with the nearest town (Mustafa et al., 2021).

Malaysia has a total road length of 237,022.353 km, according to the Public Works Department in 2018. It consists of a federal road, a highway, and a state road. Federal roads are reported to be 17,949.731 km long, with highways contributing 2,000.880 km. State roads contribute the rest of Malaysia's road network, with a total length of 217,071.742 km, accounting for the lion's share of the country's road network (Mustafa et al., 2021).

2.2 Road Maintenance Procedure

Roads are regarded as critical components for improving communication from one location to another. As a result, it is critical to maintain these communication channels in order to provide better comfort (Vicky, 2020). The following are some of the reasons why road maintenance is so important

- To always ensure the safe and comfortable movement of passengers and goods from one location to another.
- Road maintenance on a regular basis helps to avoid accidents caused by faulty and damaged roads.
- Road maintenance is critical to moving traffic safely and smoothly.
- It extends the life of the road
- Maintaining road user safety and reducing inappropriate traffic movement



Figure 2.1: Steps/ Procedures of Road Construction (Vicky,2020)

1. Patching Potholes

When patching potholes, the pot jokes are first cut square or rectangular in shape up to the required depth. The holes are thoroughly cleaned and broomed, and a suitable tack coat or bitumen coat is applied. Then, using crow bars, a premixed patching mix is usually placed in the holes, and the surface is rammed and rolled. For compaction under traffic, the finished surface or potholes are kept slightly above the normal surface. Cut back or emulsions are used as filling materials to repair potholes in cold weather (Vicky, 2020).

2. Patching Ruts

In the process of patching ruts, a continuous trenches are dug so as to enclose the ruts which becomes a solid foundation for the patch. Then patch work is further carried out as it is done in potholes (Vicky, 2020).

3. Patching Corrugations

Corrugations are installed on bituminous roads to prevent bleeding, which occurs frequently during the summer. This can be fixed by cutting the corrugation's crests or high ridges. Up to the depth of the valleys, which are then cleaned, painted, and filled with the premix material (Vicky, 2020).

4. Base Repair

This repair falls under the category of preventive maintenance, in which the cause of the defect is first identified and then the necessary treatment is determined. If it is discovered that the particular defect is caused by insufficient thickness of the base course, it is repaired or corrected by adding surface thickness. When repairing a base, the old surface of the base is first loosened by scarifying it to the full depth. The old metal has been screened and can be used in the base. The new base is then prepared in layers no thicker than 75 mm and covered with the surface finish (Vicky, 2020).

5. Surface Treatment

Bleeding on a bituminous surface is treated as soon as it appears by applying a layer of blotting material. Rolling is done if necessary, with aggregate chippings or coarse sand. When cracks form on the road surface, a renewal coat or seal coat is applied (Vicky, 2020).

6. Resurfacing

In the process of re-surfacing, the existing surface is repaired by suitable patching. A light tack coat is then applied over the surface and surface dressing is done (Vicky, 2020)

2.3 Road Maintenance/ Construction Process

Road construction means the construction of a new roadway or the conversion of an existing unpaved road to a paved road. Road construction means works that involve the construction of a new section or new road. Roads fulfil a crucial function in modern society, providing increased mobility for people, goods and services. Asphalt road surfaces offer many benefits, including cost efficiency, reduction in noise pollution and comfort (Mwangasha, 2021).

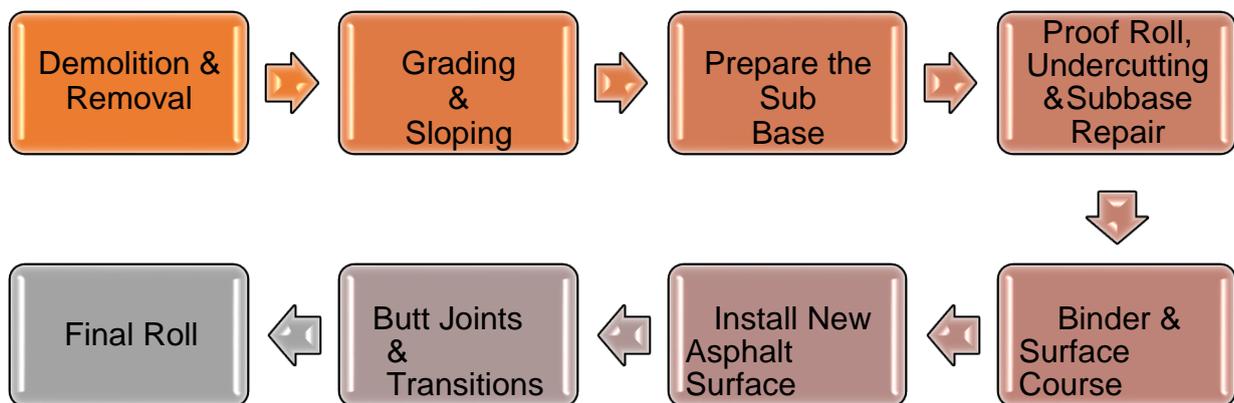


Figure 2.2: Road Maintenance/ Construction Process, (Mwangasha, 2021)

2.3.1 Demolition & Removal (Mwangasha, 2021)



Figure 2.3: Demolition & Removal for Road Maintenance

- ✓ Demolition and removal are completed using heavy machinery, including small bobcats and forklifts and when necessary, front loaders and large dump trucks. Debris is then removed.

2.3.2 Grading & Sloping (Mwangasha, 2021)

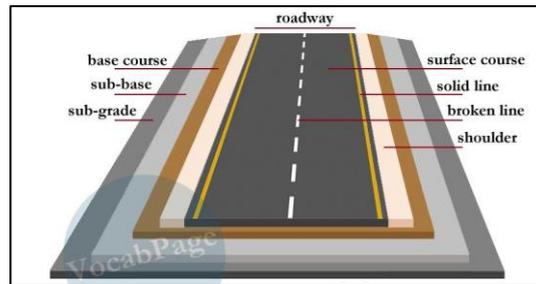


Figure 2.4: Grading & Sloping for Road Maintenance

- ✓ Using laser-guided transits and automatic motor graders, the construction team grades the surface to be paved to ensure that water will run-off appropriately.
- ✓ Proper water drainage is vital to your asphalt because water is a major cause of damage, including potholes, cracks, and heaving.

2.3.3 Prepare the Subbase (Mwangasha, 2021).

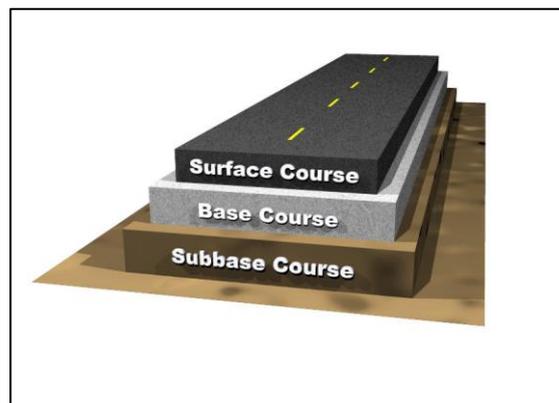


Figure 2.5: Subbase Preparing for Road Maintenance

- ✓ The most important part of your new asphalt surface is the subbase.
- ✓ The subbase provides a stable surface to support new pavement.
- ✓ The subbase is a frost barrier to help reduce winter damage due to freezing and thawing
- ✓ During the installation, base thickness, base stability, and compaction are essential steps. If the subbase is not appropriately compacted, the asphalt surface on top will not provide years of durability

2.3.4 Proof Roll, Undercutting and Subbase Repair (Mwangasha, 2021).



Figure 2.6: Proof Roll, Undercutting and Subbase Repair for Road Maintenance

- ✓ Once the subbase is fully graded and compacted, an extra step, called a proof roll which is the next step, to ensure the underlying surface is strong and ready to support new asphalt.
- ✓ Proof roll involves driving a quad-axle dump truck, loaded with 72,000 pounds, row by row over the entire surface

2.3.5 Binder and Surface Course (Mwangasha, 2021)

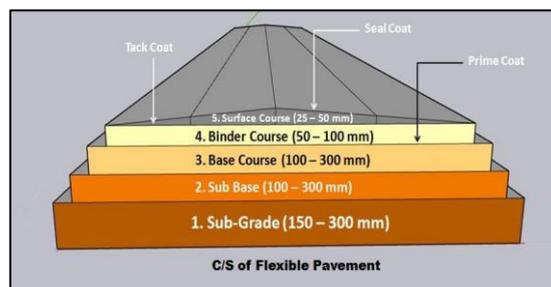


Figure 2.7: Binder and Surface Course for Road Maintenance

Once the subbase is laid and any soft areas are identified and repaired, it is time to add the binder.

- ✓ The binder layer is large aggregate mixed with oil, making it very strong and durable.
- ✓ The binder layer can be thought of as the strength of any new asphalt surface.

2.3.6 Install New Asphalt Surface (Mwangasha, 2021)

Once the supportive structures of a new asphalt surface are installed, the top layer of fresh asphalt is added to provide a clean, smooth ride.

- Surface asphalt is made up of small aggregate, sand, and oil.
- This combination of materials creates jet-black asphalt that, when installed appropriately, provides a smooth ride and a shiny, attractive finished surface.



Figure 2.8: Installing New Asphalt for Road Maintenance

2.3.7 Butt Joints and Transitions (Mwangasha, 2021)

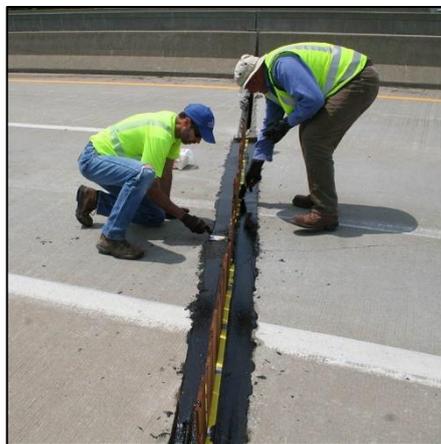


Figure 2.9: Butt Joints and Transitions for Road Maintenance

- Butt joints are areas where old asphalt or concrete meets new asphalt pavement.
- These transitional areas require special attention to ensure that the grading and water run-off is appropriate.

2.3.8 Final Roll (Mwangasha, 2021)



Figure 2.10: Final Roll for Road Maintenance

Once the asphalt and butt joints have been laid, the entire surface is smoothed and compacted.

- Using a roller truck, the new asphalt pavement surface is compacted and smoothed.
- This process step ensures that no small bumps of aggregate or stone are left poking through the smooth new surface.

CHAPTER 3: CASE STUDY (RURAL ROADS MAINTENANCE AT KAMPUNG TEPI ALOR, MUKIM NAGA, KEDAH)

3.1 Introduction

Roads played as the most important public assets in every country whether in a big town or in a rural area. By improving the condition of the roads and maintain it, it can sometimes bring immediate and sometimes dramatic benefits to the road users. For instance, road users can easily access to the hospitals, schools, university, market and so on. As a result, people can improve their speed, time, and safety. For road to be sustained, the responsible party need to follow by a well-planned program of maintenance. Without it, roads can easily fall into damage which is can badly be a threat to the road users.

The goal of maintenance is to preserve the asset, but not to upgrade it to another level. Maintenance work needs to be done regularly according to the schedule. Road maintenance comprises many activities such as to keep pavement, shoulders, slopes, drainage facilities and all other structures and property within the road margin as near as possible. It is including minor repairs and improvements to eliminate the cause of the defects and to avoid excessive repetition of maintenance effort.

3.2 Project Background, Key Plan and Location Plan

This project is in the state of Kedah, in the Kampung Tepi Alor, Mukim Naga, Jitra. When residents of the community began to protest about the state of the roads, the project was launched. As a result, the Kubang Pasu district office was forced to move quickly to prevent any difficulties or unpleasant situations from occurring in the area. With initiatives like this, the Kubang Pasu district office can provide opportunities for registered contractors to undertake the road's construction by submitting a tender that will be withdrawn at the specified period. The Kubang Pasu District Office will frequently advertise such projects on social media sites such as Facebook and others, as well as place a starting price on the project's value. Contractors who want to compete for the project must purchase a form from the Kubang Pasu District Office's 1st floor development unit. When the draw is completed, the list of successful contractors will be posted on the Kubang Pasu District Office's official Facebook page. Finally, this project is handled by a contractor named Cendana Gemilang Impian Enterprise, whose office is in Ayer Hitam, Kedah. The project to maintain the road of Kampung Alor Tepi, Mukim Naga, has been given a one-month time span, beginning on August 24, 2021, and ending on September 24, 2021. The maintenance of the road was about 1km of length which is have area which is Jalan Kampung Alor Tepi, Lorong Alor 1, Lorong Alor 2, Lorong ALor 3, Lorong Alor 4 and Lorong Alor 6.

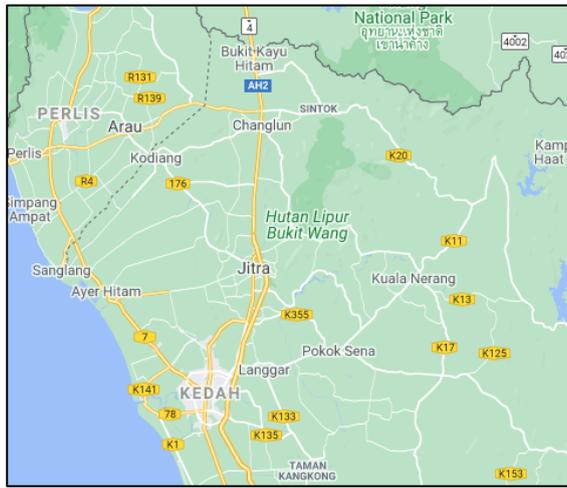


Figure 3.1: Location Plan of Project



Figure 3.2: Key Plan of Project



Figure 3.3: Signboard of Project's Location

3.3 Purposes of the Project

Road infrastructure provides a fundamental foundation to the performance of all national economies, delivering a wide range of economic and social benefits. Adequately maintaining road infrastructure is essential to preserve and enhance those benefits. The importance of maintenance needs to be recognised by decision makers, funded appropriately and well managed to ensure maximum value is achieved. Inadequate levels of investment or poor management of the road network will have serious consequences for economies and social well-being. Thus, there are many benefits and importance of road maintenance toward people and economies.

3.3.1 National Assets

It is possible to summarize that road are the internationally dominant transport asset, spanning millions of kilometres around the world. Road maintenance is responsible for controlling value depreciation and determining the network's impact on road users and society. The value of any road network can quickly erode if it is not properly maintained, and road users and society can suffer significant negative consequences if a road network is in poor condition.

3.3.2 Sustain the Condition of the Road

The need for maintenance increases as road infrastructure ages, since it becomes more fragile, less resilient and journeys are more susceptible to disruption. There is a lag between building new roads and their need for maintenance. For countries with mature road networks, much of the road building happened in the second half of the twentieth century. Large structures such as bridges and overpasses typically have design lives around 100 years and so on many networks, the full realisation of the long-term on-going maintenance need will not yet have been reached.

3.3.3 Safety and Health

It is estimated that more than 1.1 million people are killed in road traffic accidents each year, with another 50 million or so injured. Although road traffic injuries can occur for a variety of reasons, the road surface's condition is an important factor in preventing crashes. A smooth ride is more comfortable to travel over, and our transit can be consistently faster. This means that goods arrive at their destination intact and vehicle damage from surface defects and potholes is reduced too. Vehicle owners have reduced running costs, freeing some income to utilise in other ways.

3.3.4 Number of Vehicles Increased

In developing countries, traffic is rapidly growing day by day. In developed countries, age of stock increases and asset become more and more complex. According to Transport Minister of Malaysia, he said the mobility of Malaysians is projected to increase more than three times, from 40 million daily trips by car in 2010 to 131 million daily trips in 2030 which is Malaysia has already emerged among the top three largest automobile markets in Southeast Asia.

3.3.5 Service in Rural Areas

Road transport is the most adaptable and flexible mode of transportation, with a reach into the most remote areas that are inaccessible by rail, air, or water. As a result, road transportation is best suited for transporting goods and people to and from rural areas that are not served by rail, water, or air transportation. As a result, the only way to transport cargo between large cities and small villages is by road. For short distances, road transport is the only option that is both economically and environmentally viable. Transporting goods and people over short distances by road is far more cost effective and time efficient. Also, delays in goods transit due to intermediate loading and handling can be avoided because goods can be loaded directly into a road vehicle and transported directly to their destination. In other words, the costs of intermediate handling and feeder connectivity can be eliminated.

3.4 Limitation of the Project

Scope of the project are factors that limit your project's quality, delivery, and overall success. According to several, there are numerous project constraints to consider, such as resources, methodology, and customer satisfaction. Depending on your organisational structure and processes, these are worthwhile to plan for.

3.4.1 Budgetary

It is equally important to stakeholders is how much a project will cost. As with time constraints, your budget estimates need to be presented in a range. Typically, funds provided by the project and generated by target groups are insufficient to fulfil any accidents during the construction phase. They will not be sufficient to secure the future livelihoods of a severely injured victim's family. The funds are also insufficient in cases of extensive road damage. As a result, it is critical to choose an alignment that avoids areas prone to sinkholes and destruction, as well as to define clear responsibilities with the relevant government agency.

3.4.2 Socio-Economic

The project can only provide limited and temporary employment. Given the general high demand for unskilled and long-term labour opportunities, the impact of this approach on overall poverty alleviation is rather limited. Moreover, each project issued by the Kubang Pasu District Office is limited which will cause a lot of competition between contractors.

3.43 Time

One of the most important stakeholder considerations, project time which is how long it will take to deliver, is a vital measure of project success. Your task is to estimate project time as accurately as possible, which requires a blend of research and experience. The draw conducted by the Kubang Pasu District Office will result in the selected contractors being randomly selected. this will result in the contractor undertaking this project is not necessarily an experienced or professional contractor company.

3.5 Procedure of the Project

Before any type of road maintenance or construction project can begin, industry professionals must receive the proper plans and funding. During this phase, the local government raises the notion of building or fixing certain areas. Then, it raises money in case of approval. The government will choose a construction company for the task and ask them to develop blueprints for the project.

3.5.1 Advertised the Project

As mentioned before this, the Kubang Pasu District Office will frequently publicise such projects on social media sites like Facebook and others, as well as set a starting price for the project's value. Contractors interested in competing for the project must obtain a form from the Kubang Pasu District Office's 1st floor development unit. The list of successful contractors will be posted on the Kubang Pasu District Office's official Facebook page once the draw is completed.

NOTIS RALAT
PINDAAN TAJUK KERJA UNDI

Dimaklumkan bahawa terdapat pindaan tajuk pada Notis Cabutan Kerja Undi Secara Atas Talian (Online) Fasa 4 bagi Daerah Kubang Pasu, Kedah Darul Aman. Pindaan tajuk kerja undi tersebut adalah seperti berikut:

PEJABAT DAERAH DAN TANAH KUBANG PASU	
TAJUK KERJA	PERUNTUKAN (RM)
KERJA-KERJA MENYELENGGARA JALAN LORONG HASHIM KAMPUNG LEMBAH ARANG, MUKIM WANG TEPUS, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	30,000.00

Dipinda kepada :

TAJUK KERJA	PERUNTUKAN (RM)
KERJA-KERJA MENYENGGARA JALAN KAMPUNG LEMBAH ARANG, MUKIM WANG TEPUS, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	30,000.00

Tarikh : 14 Oktober 2021

Figure 3.4: Project's Advertising in social media

DAERAH KUBANG PASU
SENARAI KONTRAKTOR BERJAYA BAGI MAJLIS CABUTAN KERJA UNDI SECARA ONLINE FASA 4 TAHUN 2021 NEGERI KEDAH DARUL AMAN

TARIKH : 20 OKTOBER 2021 (RABU)
TEMPAT : BAHAGIAN TEKNOLOGI MAKLUMAT DAN KOMUNIKASI NEGERI KEDAH, ARAS 2 BLOK E, WISMA DARUL AMAN, 05503 ALOR SETAR KEDAH DARUL AMAN

BIL.	TAJUK PROJEK	NILAI PROJEK (RM)	SYARIKAT	NOMBOR UNDI
1	KERJA - KERJA PEMBAIKAN KEROSAKAN PENGHAWA DINGIN DI PEJABAT TANAH DAERAH KUBANG PASU	40,000.00	KIBAL JAYA ENTERPRISE	110
2	KERJA-KERJA MENYELENGGARA DAN MEMBAK PULIH DEWAN KAMPUNG SANGLANG, MUKIM SANGLANG, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	30,000.00	Perniagaan Ku Saad Dan Beranak	145
3	KERJA-KERJA MENYELENGGARA JALAN KAMPUNG PIDA 4, MUKIM PUTAT, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	166,000.00	LESTARI A.S. ENTERPRISE	271
4	KERJA-KERJA MENYELENGGARA JALAN PIDA 9 LAMA, MUKIM SANGLANG, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	200,000.00	PERTUBUHAN PELADANG KAWASAN LUBUK BATU	284
5	KERJA-KERJA MENYENGGARA JALAN KAMPUNG LEMBAH ARANG, MUKIM WANG TEPUS, DAERAH KUBANG PASU, KEDAH DARUL AMAN SERTA KERJA-KERJA BERKAITAN DENGANNYA	30,000.00	ZBT TEGUH ENTERPRISE	161

Figure 3.5: Project's Advertising in social media

3.5.3 Equipment of the Project

Equipment most commonly refers to a set of tools or other objects commonly used to achieve a particular objective. Construction projects typically rely on a variety of heavy machinery to complete the work in a timely, safe, and cost-effective manner. Depending on the size and scope of the construction project, you'll most likely need to use at least one of these heavy construction machines. The Kubang Pasu District Office will lend the contractor the equipment needed to facilitate and complete the project, allowing it to be completed quickly by signing several agreements and submitting the necessary letters.

Kepada :- Pegawai Daerah Kubang Pasu,
Pejabat Daerah Kubang Pasu,
Kompleks Pentadbiran Daerah Kubang Pasu,
06000 Jitra, Kedah Darul Aman

BORANG A

Peralatan/ kerja-kerja tersebut di bawah ini telah diterima dengan sempurna dan puas hati untuk kegunaan bagi
KELOMPOK PEMBANGUNAN JALAN TANPA BLEN DI 20 KEMPUNG DI DUN ASOP HITAM
MUKIM KEKONG DI DAERAH KUBANG PASU, KEDAH DARUL AMAN

Tarikh	Jumlah	Harga

1. Tandatangani Ahli Jawatankuasa
Nama: MOHAMMAD HAZARI BIN ISHAHIM
KEMAMPAK PEMANGKUNAN DASAR
KESELAMATAN KAMPUNG (JKKK)
67052702-3666
2. Tandatangani Ahli Jawatankuasa
Nama: MOHAMMAD HAZARI BIN ISHAHIM
KEMAMPAK PEMANGKUNAN DASAR
KESELAMATAN KAMPUNG (JKKK)
292302 MUSA-00015
3. Tandatangani Ahli Jawatankuasa
Nama: MOHAMMAD HAZARI BIN ISHAHIM
KEMAMPAK PEMANGKUNAN DASAR
KESELAMATAN KAMPUNG (JKKK)
292302 MUSA-00015

Pegawai Daerah Kubang Pasu,
Pejabat Daerah Kubang Pasu,
Kompleks Pentadbiran Daerah Kubang Pasu,
06000 Jitra, Kedah Darul Aman

Saya telah periksa bekalan tersebut di atas dan mendapati bekalan tersebut adalah memuaskan dan
Pembangunan Keselamatan Kampung (JKKK) dengan bekalan / kerja-kerja telah disiapkan

1. Tandatangani Ahli Jawatankuasa
Mukim MOHAMMAD HAZARI BIN ISHAHIM
TARIKH : 6/12/21

2. Tandatangani Ahli Jawatankuasa
Mukim MOHAMMAD HAZARI BIN ISHAHIM
TARIKH : 6/12/21

3. Tandatangani Penolong Jurutera
AZIZUL FALIZI BIN MUSA
6/12/2021
Pejabat Daerah Kubang Pasu

MOND JALIL BIN MOHD JUSOF
PENYELANG PEGAMAI DAERAH
(BIDANG BANGUNAN FIZIKAL)
KUBANG PASU, KEDAH DARUL AMAN

Figure 3.8: Confirmation Letter of Equipment

3.5.4 Project Completion Letter

A project Completion certificate is a legal document which states that the project or the property has been completed according to the approved building plan. It is provided after the inspection of the project by the municipal corporation or local development authority. Further describe your project in the background of the problems aimed by the project and specify the goals and objectives of the project as well as its intervention area in the overview. It's also described the results and outcomes of the project.

PERAKUAN SIAP KERJA

Rujukan: DP/EP 700-2/58/56
Nama: WAZAH DINAR ENTERPRISE
Alamat: NO.213, JALAN JAJAI JAYA II
TANJUNGPINANG
Tarikh: 16/11/2021

Pejabat Daerah Kubang Pasu,
Kompleks Jabatan Daerah Kubang Pasu,
06000, Tanjong Pinang.

TUJUAN
KERJA
KERJA PERAKUAN SIAP KERJA TRADA JALAN DI 30 KAMPUNG DI TANJUNGPINANG

Mengakui bahawa saya telah menyiapkan kerja-kerja di atas seperti berikut:

2. Bersama-sama mengembalikan kerja No. 21C/11/2021
untuk pihak tuan membuat bayaran sebanyak RM 10,000.00

Sekian, terima kasih.

Yang benar,
HYDRA SYLVIA MARIANO WAZAH DINAR ENTERPRISE
AS0249520-A
11/911 KAMPUNG KUBANG PASU NO. 213 JALAN JAJAI JAYA IIB/1,
TANJUNGPINANG, KUBANG PASU, KEDAH
Tandatangan dan cop kontraktor

PERAKUAN JABATAN

A. Ulasan Teknikal

Adalah disahkan bahawa kerja-kerja berkenaan di atas telah siap pada 16/11/2021 dengan sempurna

2. Untuk makluman kontraktor, tempoh kecajiran untuk kerja tersebut selama enam (6) bulan berakhir pada 1/05/2022

Penolong Jurutera Penolong Pegawai Penguasa
AZIZUL FAUZI BIN MUSA MOHAMMAD HUSNUL HUDA MOHAMMAD HUSNUL HUDA
Pejabat Daerah Kubang Pasu Pejabat Daerah Kubang Pasu
Ulasan Pegawai Penguasa KUBANG PASU, KEDAH DARUL AMAN

Adalah disahkan bahawa kerja-kerja berkenaan di atas, boleh dibuat pembayaran. Pegawai Daerah / Ketua Penolong Pegawai Daerah (Pembangunan) / Penolong Pegawai Daerah.

HAJI MUHAMMAD ABDUL KADIR
PEGAWAI DAERAH KUBANG PASU
PEJABAT DAERAH KUBANG PASU
KEDAH DARUL AMAN

Figure 3.9: Project Completion Letter

3.6 Scope of Project

It is primarily concerned with the routine maintenance of unpaved rural roads, particularly those in Kampung Tepi Alor, Jitra. For instance, it is used to perform routine maintenance on a continuous basis in order to avoid unnecessary aggravation of road deterioration. Since protection measures on rural roads are frequently insufficient, this includes, as part of routine maintenance, the development of additional basic measures to protect the roads, particularly from water. Routine maintenance activities are divided into three categories which is , repairing road elements, and creating protection measures.

3.6.1 Clearing Road Elements

The first type of routine maintenance activity requires clearing road elements to ensure proper road function. This is the most fundamental type of routine maintenance, and it is included in nearly all routine maintenance systems. For instance, vegetation removal. Any vegetation that obstructs visibility, traffic, or the flow of water away from the road and through the drainage system, as well as any vegetation that is damaging the road elements will be removed.

3.6.2 Repairing Road Elements

The second type of maintenance activity seeks to repair minor road damage, restoring the various road elements to good condition. This set of routine maintenance activities aims to prevent more serious damage while also ensuring that the various road elements function properly. This type of activity is sometimes referred to as recurrent maintenance because it is not always included in routine maintenance systems. For unpaved township and village roads, the following activities are included:

- **Repairing Unpaved Road**



Figure 3.10: Unpaved Road in Kg Alor Tepi



Figure 3.11: Unpaved Road in Kg Alor Tepi

Ruts, rills, and potholes in the road surface of earthen or gravel roads are repaired by filling in the deformations and ensuring that protective measures are in place to prevent further damage. Extensive road surface repairs should be treated as periodic maintenance (medium maintenance) or rehabilitation (major maintenance) and should be completed before routine maintenance.

- **Repairing Stone Pavements**



Figure 3.12: Stone Pavement at Kg Alor Tepi



Figure 3.13: Stone Pavement at Kg Alor Tepi

Any loose or missing stones are replaced, and the road shoulder is filled to prevent stones from becoming loose again, ensuring that safeguards are in place to prevent further damage. Extensive road surface repairs should be treated as periodic maintenance (medium maintenance) or rehabilitation (major maintenance) and should be completed before routine maintenance.

- **Asphalt Premix Pavement**



Figure 3.14: Premix Pavement at Kg Alor Tepi



Figure 3.15: Premix Pavement at Kg Alor Tepi

Premix is a useful term covering all types of material in which aggregates are precoated with bitumen or tar before being laid on the road. Mixtures have been evolved in different countries to suit local circumstances. For example, it is use of natural rock asphalt which has evolved into mastic asphalt, a dense, extremely strong and durable material now extensively used in civil engineering wherever a durable waterproofing layer is needed

- **Repairing The Road Shoulder**

Any cuts or depressions in the road shoulders are filled and compacted, ensuring that protection measures are in place to prevent the damage from occurring again in the future.

3.6.3 Creating Protection Measures



Figure 3.15: Installed Signboard at Kg Alor Tepi



Figure 3.14: Installed Signboard at Kg Alor Tepi

All road and road reserve fixtures are referred to as road furniture. Steel covers, traffic domes (silent cops), and lane markers are examples of road surface fixtures that can pose a hazard to a motorcycle. Light poles, signposts, bus shelters, and crash barriers in the road reserve may cause additional injuries if a motorcyclist is thrown against them as a result of a crash. The third type of maintenance activity aims to create additional road protection measures where existing ones are insufficient, thereby protecting the road from further damage.

This is frequently done in conjunction with repairs to ensure that the damage does not occur again. This set of maintenance activities is not commonly included in routine maintenance systems, but experience has shown that its application is very helpful in unpaved roads with insufficient road protection measures, particularly if water damage is widespread. By implementing basic road protection measures, the deterioration process can be significantly slowed, resulting in a significant reduction in the need for repairs and overall maintenance.

3.6.4 Coring Test

The core test is a well-established method that is commonly used in the concrete industry to determine whether the suspect hardened concrete complies with strength-based acceptance criteria or not and it is sometimes used as a one-of-a-kind tool for assessing the safety of existing concrete structures. Core tests are generally performed to assess whether suspect concrete in a new structure complies with strength-based acceptance criteria or not. In addition, it is critically used to determine in-place concrete strengths in an existing structure for the evaluation of structural capacity. Simply put, asphalt core cutting test carried out to confirm the quality of the works like the density of the asphalt, the thickness of the layer, air permeability, asphalt compression strength, asphalt mix test, etc.

RESULTS :

BIL.	CHAINAGE	TEBAL (mm)	LOKASI (L/R/C)
1	100.00 Semula	56.10	C
2	100.00 Semula	64.50	L
3	100.00 Semula	56.10	R
4	100.00 Turap Semula	60.50	C
	PERATA	59.3	

Checked By :

Norhazi Bin Abdul Muthalib
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 M. Tech. & Voc. Edu,
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 Unit Penyelidikan dan Perundingan
 Politeknik Sultan Abdul Halim Mu'adzam Shah

BSR666 PURPOSES ONLY

Figure 3.16: Results of Coring Test



Figure 3.17: Coring Test in Kg Alor Tepi



Figure 3.18: Coring Test in Kg Alor Tepi

3.6.5 Primex Temperature Reading

There are three basic steps to checking temperatures to assure a good and successful paving and patching project.

1. Monitoring Ambient Temperature

Studying the expected high and low temperatures for the day of paving, as well as monitoring the ambient temperature during work hours, is critical to starting and finishing a successful paving project. On a paving or patching project, the ambient temperature should be at least 50°F and rising.

2. Find Out the Projected Wind Velocity for The Day of Paving

When there is a breeze, the temperature of the hot mix asphalt pavement drops faster than usual. The faster the hot mix asphalt cools, the higher the wind velocity.

3. Note any precipitation

This can lower the temperature of the hot mix asphalt, making it more difficult to achieve the required compaction.



Figure 3.19: Primex Reading in Kg Alor Tepi

3.7 Costing for the Project

Cost estimation in project management is the process of forecasting the financial and other resources needed to complete a project within a defined scope. Cost estimation accounts for each element required for the project from materials to labour and calculates a total amount that determines a project's budget. The contractor lastly will estimate and calculate the cost for the project and also prepared their bills of quantities (BQ) and claimed the amount of money from the District Office in Kubang Pasu. Usually, it will take some days until the money is given to the contractor. Roughly, the cost of this project which is rural road maintenance is around RM200,000.00.

BIL.	BUTIRAN	KUANTITI	HARGA (RM)
1.	Kerja-kah...	1.25	10,000.00
JUMLAH KESELURUHAN			10,000.00

Figure 3.20: Bill Quantities of the Project

BIL.	BUTIRAN KERJA	UNIT	Kuantiti	Kadar (RM)	Jumlah (RM)
1.	Kerja-kah...		1.25	10,000.00	10,000.00
2.	Kerja-kah...		18 x 30	450.00	9,000.00
JUMLAH KESELURUHAN					9,000.00

Figure 3.21: Bill Quantities of the Project

Butiran Kerja	Unit	Kuantiti	Kadar (RM)	Jumlah (RM)
1. Kerja-kah...		50.00	74.00	3,700.00
2. Kerja-kah...		55.27	587.50	32,455.35
3. Kerja-kah...		1,870.40	1.00	1,870.40
4. Kerja-kah...		4.00	100.00	400.00
JUMLAH KESELURUHAN				39,000.00

Figure 3.22: Bill Quantities of the Project

3.8 Machineries and Tools for Maintenance/Construction

Roads require a specialized set of construction vehicles, construction tools and expert measuring devices for a smooth, safe, and long-lasting driving surface. Road construction is a highly technical venture that requires meticulous planning and the deployment of a variety of specialized roads equipment. Road construction involves blasting of rocks, deep excavations, and other difficult tasks that require a wide range of construction vehicles.

Table 3.1: Tools and Machineries for Maintenance/Construction of Road

Machineries	Details
<p>1.Crawler Excavator</p> 	<ul style="list-style-type: none"> ➤ These are earthmoving machines that are used in road construction sites to excavate or move soil, rock, clay, or debris. ➤ Apart from excavating soil, these machines are also used for other road construction works such as breaking asphalt, breaking dividers or other walls, clearing trees, lifting debris and loading them on dump trucks, etc.
<p>2. Motor Grader</p> 	<ul style="list-style-type: none"> ➤ Used for levelling the surface of the road so that asphalt can be laid on it. They are generally used for the construction of gravel or dirt-based roads.
<p>3. Road Roller</p> 	<ul style="list-style-type: none"> ➤ These are compaction machinery used for compacting layers of asphalt to increase the sturdiness as well as smoothness of the surface of the road. ➤ In some cases, road rollers are also used for the compaction of soil or gravels before asphalt is laid on the surface.

4. Asphalt Mixing Plant



- These are essentially plants where asphalt concrete and coated roadstone are produced by mixing sand, aggregates, asphalt, minerals, fillers, binders, etc. in the right proportion and temperature.
- The mixture is kept hot until it is applied in the construction site to avoid premature setting.

5. Wheel Loader



- Wheel loaders are used for lifting and moving soil, rocks, debris or other materials in and around construction sites.
- They can also be used for backfilling trenches or holes dug up during the construction of roads.

6. Dump Truck



- Dump trucks are heavy machinery used to transport large volumes of loose materials such as dirt, sand, ores, gravel, and demolition waste across mining, civil or major construction sites.

7. Coring Drill



- A core drill is a cylindrical drill with a hollow bit that allows you to create a perfectly round hole. The primary purpose of a core drilling is to obtain an undisturbed, intact sample representative of the in-situ material. Coring is the primary method of obtaining samples of the soft rock and the cemented soil that are encountered in many areas of the world.

8. Adjustable Distance Measuring Tools



- Measuring instruments and gauges are used to measure various parameters such as clearance, diameter, depth, ovality, trueness, etc. These are critical engineering parameters, which describe the condition of the working machinery.

9. Asphalt Temperature Thermometer Test



- Temperature testing in asphalt is essential to verifying the varying degrees of temperature in asphalt mixtures.
- Monitoring the base (ground or existing pavement) temperatures can be accomplished with an any thermometer such as digital thermometer or any others.

CHAPTER 4: PROCESS AND PROBLEMS

4.1 Introduction

This chapter explained all previous chapter's results that make the problems exist in some situation. It outlines objective verification and an overall overview for the entire analysis. Furthermore, some of the issues and problems throughout the course of this research will be highlighted to improve future studies.

4.2 Problems Identify

Project managers are tasked with keeping a site running smoothly, safely, within schedule and on budget. Sometimes, this is a very difficult ask. The Problem Identification and Tracking document allows project managers and their teams to capture the details of each problem and efficiently deal with them. Specifically, Problem Identification and Tracking is focused on proactively recognizing, managing, and resolving risks.

4.2.1 Movement Control Order

The Malaysia Government Movement Control Order commonly referred to as the MCO or PKP, is a series of national quarantine and cordon sanitaire measures implemented by the federal government of Malaysia in response to the COVID-19 pandemic in the country starting on 18 March 2020. This project was firstly should started earlier than from the date it has been done. The new date that has been decided was amended after the Movement Control Order been announced. These problems may disturb and change the flow of the project that have been decided before. The COVID-19 pandemic had a significant impact on Malaysia's construction industry. Except for critical or essential services, most construction work was halted throughout the MCO. Even after the MCO was lifted, contractors continued to face challenges, such as having to implement stringent standard operating procedures on health and safety measures ("SOPs") for construction sites. As a result of the disruption, they have been unable to complete their work as originally and normally planned.

4.2.2 Unrealistic Expectations

There may be some difficulties because of their expectations. While some things are within the scope of a skilled project manager, others simply aren't. Working with unattainable goals can constrain productivity. Some of these expectations are the result of poor forecasting. It is possible that this forecasting, like risk management, focuses on the long term rather than the short term. To face it, they must provide an alternate plan so that they can see an aggressive, yet achievable timeline or budget.

4.2.3 Limited Skills

Construction is a trust industry. People prefer to collaborate with people they know and trust. This is often a good thing, because teams that specialize in working together can be extremely efficient. However, if there is a skills shortage in the team, it may cause some delays. The solution is to be aware of these skill gaps before they affect the project. Once these gaps are identified, they can be quickly and efficiently filled. One of the problems faced by this project were unskilled labour, which make the projects have some difficulties since this project only handled by a lower-class contractor.

4.2.4 Communication problems

A surprisingly high percentage of issues in a construction project are directly related to slow communication between different contractor and departments. Communication is an essential tool in any profession, but it is extremely important when work is assigned to multiple groups. Without clear and effective communication, important tasks can fall through the cracks, and the team may be unaware of a problem when it is too late to fix it. There should be communication up a clear ladder that informs the team of any progress or obstacles at the end of each day. This way, problems can be solved proactively.

4.2.5 Fund Problems

As a construction company, individuals must have free cash on hand to pay for a variety of expenses on a semi-regular basis. Payments to subcontractors, vendors, suppliers, your employees, and so on are included on this list. You have payments due to subs, employees, vendors, materials suppliers, and equipment renters and other involved parties but you don't get paid until the project is complete. If payments are late, it can have a negative impact on a company's cash flow. This, in turn, can decrease funds for other projects and cause delays. As a result, invoicing systems must keep evolving. Construction companies can ensure that cashflow does not negatively impact other projects with improved development tools and sufficient follow-through.

CHAPTER 5: CONCLUSION & RECOMMENDATIONS

5.1 Introduction

It outlines objective verification and an overall overview for the entire report. Furthermore, some of the issues and problems throughout the course of this report will be highlighted in order to improve future studies. This chapter will provide suggestions for dealing with challenges and concerns related to this research. Finally, in this chapter, some suggestions will be proposed that may encourage future research directions in this field of study.

5.2 Conclusion

In a nutshell, this practical training has been a wonderful and worthwhile experience. I can summarize that there have been a lot I have be trained from my practical training at Kubang Pasu District Office. Though, the technical aspects of the work I have done are not perfect and could be in better-quality with provided enough time. As somebody with no experience with any construction approach I believe my time spent in research and finding it was well value and contributed to finding an appropriate result to be a better student.

During the practical training, I can summarize that road maintenance have many type and different ways to construct it. Method to construct or to maintain the road were different by book if compared to construction site for itself but they have its similarities to be done. Roadways are constructed to facilitate the flow of transportation, allowing humans to travel from one location to another with ease. Nowadays, there are numerous modes of transportation available, including automobiles, motorcycles, and trucks. Roads have played an important role in the world's trade and transportation systems, and there has been a rapid increase in the development of pavement infrastructure in Malaysia. The roads are designed to make it easier for consumers and the public to travel. Unfortunately, the road may be damaged because of constant use by heavy traffic, which destroys asphalt roads and causes unsuitable weathering. As a conclusion, damaged roads must be repaired as soon as possible because they can cause accidents and traffic congestion.

5.2.1 Business Continuity Plan

Business continuity planning (BCP) is the process of developing a strategy for preventing and recovering from possible risks to a business. The strategy guarantees that people and assets are safe and that operations can resume immediately in the case of a tragedy such as pandemic COVID-19 that hit our country nowadays. Kubang Pasu District Office will need to implement this Business Continuity Planning (BCP) as a method to create a prevention and recovery system from potential threats such as natural disasters or cyber-attacks.

BCP includes outlining all hazards that might influence the company's operations, making it an essential aspect of the organization's risk management strategy. Risks may include natural disasters such as fire, floods, or related events. There are several steps that Kubang Pasu District Office organization needs to do to develop this BCP which is first by determining how those risks will affect operations. Meanwhile, they are not only for the MCO situation, but it can also be used for some situation such as fund problems and unrealistic situations such as natural disaster, rain, flood and so on just like what Kubang Pasu District Office faced as a problem. In conclusion, developing a Business Continuity Plan (BCP) is a good way to improve the building asset and space management.

5.2.2 Increase Skilled Workers

A skilled worker is someone who has the necessary qualifications for their role and consistently goes above and beyond in their duties. From providing an exceptional customer satisfaction to ensuring that all work is completed with care and attention to detail, skilled workers understand their role and are fully committed to your organization. Skilled worker may save company's money. While skilled workers may be paid more than unskilled workers, they will save your company money in the long run. Unskilled labour is more likely to necessitate additional training, make errors on the job, and potentially harm client relationships. Skilled workers have the knowledge and experience to complete a job well and keep your customers satisfied, thereby saving your company money. Skilled workers have advanced theoretical and practical knowledge, making it easier for them to overcome issues and highlight inconsistencies within your business practices.

5.2.3 Create Safe Space for Communication

Employees must feel at ease expressing their opinions, offering ideas, reporting problems, asking questions, and sharing criticism. Whether you look at it from the top down which is both to and from direct reports and leadership or from the bottom up which is colleagues and team members, the organization must create a safe communication environment on all levels and in all directions. This will provide a solid foundation for future communication efforts. Depending on the needs of your organization, you may create brand guidelines, conduct communication training, or do something else. They need to feel comfortable bringing issues to you, knowing they were in a safe space when communicating within the set standards mentioned above. When it comes to communication in the workplace, employees should be able to rely on consistent efforts. By setting standards as mentioned, communication should sound consistent.

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APPENDICES



