



PROGRAMME IN BUILDING SURVEYING
DEPARTMENT OF BUILT ENVIRONMENT STUDIES AND TECHNOLOGY
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGY MARA
PERAK BRANCH
SERI ISKANDAR CAMPUS

**IMPLEMENTATION OF PERSONAL PROTECTIVE
EQUIPMENT (PPE) FOR SAFETY ASPECT AMONG
LABOUR IN BUKIT KOR, TERENGGANU**

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PRACTICAL TRAINING REPORT

FEBRUARY 2021

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

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Practical training is a course for students in their final semester. This programme serves as an initial training for the student to become acquainted with the working environment. It is also necessary to complete all courses studied in order to graduate from the University. Every student may benefit from this training, which means that the working environment can provide the student a sense of how the reality work happens, which may be included in the future.

Furthermore, this practical training can provide additional benefits to students by allowing them to obtain more understanding from the organisation. Additionally, students can enhance their communication skills with the staff. Aside from that, students can utilise all of the strategies and skills learned in previous semester's classes. These strategies and skills can be used in their training to help increase the company's performance.

Every student in the company is managed by an experienced staff member who is in charge of the training student and is responsible for monitoring attendance, discipline, and performance. As a result, this will be reflected in the University's student evaluation report.

1.2 Objective of Practical Training

There are three (3) main objectives in this study:

- i. To develop one's own techniques and abilities.
- ii. To gain greater information through practical training.
- iii. To enable the students become more self-sufficient in the future by allowing them to complete the job on their own.

1.3 Department during Practical Training

During practical training, department has been place is under construction works. In more specific are related scope were monitoring workers, checking material on site, levelling works, calculate turfing area, bill quantity, housekeeping, and other general work.

1.4 Training Duration

It was four months from October 2, 2021, to January 31, 2022. I have picked up a lot of knowledge here because everyone on staff is eager to share information and knowledge during training.

1.5 Organization Background



Photo 1: SESB logo

In 1973, Dato' Haji Sulong bin Haji Mamat founded Syarikat Sulong Letrik, a company that specialises in electrical maintenance and installation. Sulong Electric & Engineering Sdn. Bhd. Was formed on November 19, 1983, as a result of the company's growth. SULONG ENGINEERING SDN BHD (SESB) was the company's new name, which took effect on June 7, 1999.

SESB coordinated its activities into an integrated approach to various Electrical Services, Oil & Gas Industries, Transmission Lines & Underground Cabling Works, Civil Engineering, Buildings, Mechanical, and other specialise Civil and Electrical Engineering works with its blend of experiences, technical expertise, and skills. SESB has established itself as a prominent electrical contractor in Malaysia and has the potential to become one of Malaysia's leading civil construction companies.

SESB is a bumiputra-owned firm with 100% bumiputra ownership. Class A for building and civil work, class 1 for electrical work, and CIDB class G7 civil, mechanical, and electrical contractor are all registered with “PUSAT KHIDMAT KONTRAKTOR”.

1.5.1 Organisation Chart

The following is the current organizational chart of SESB.

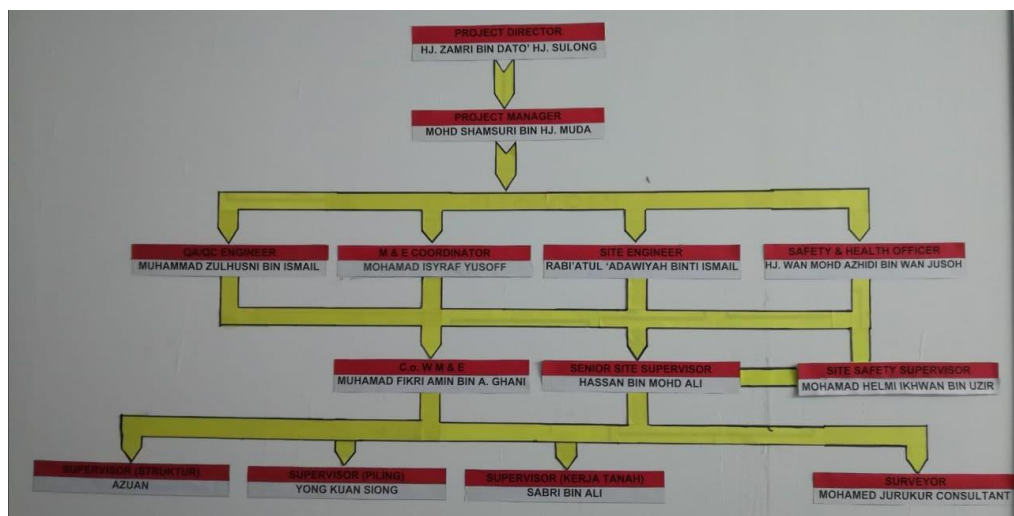


Photo 2: Organisation chart

1.6 BUILDING PHOTOS



Photo 3: Administration building



Photo 4: Administration building



Photo 5: College building



Photo 6: College building

1.7 KEY PLAN



Photo 7: Key plan

CHAPTER 2
PERSONAL PROTECTIVE
EQUIPMENT (PPE) FOR SAFETY
ASPECT

2.1 Introduction

The construction sector is considered to be dangerous, with high accident rates and health issues. Due to the innovation and complexity in the sector of infrastructure projects related to Personal Protective Equipment (PPE), it is dynamic and variable. During the construction lifespan, safety and health at any specific infrastructure site are linked to both the physical and psychological dimensions of dedicated stakeholders.

As a result, any organisation involved in the day-to-day tasks allocated to site workers must be concerned about this element. At this time, safety and health are critical for the project's aims and accomplishments, as well as other issue that requires competent supervision (Ammad, 2020).

2.2 Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is the equipment that needed for give a protection to the person from any hazard in workplace. The minimum for personal protection for workers or visitor to a construction site shall be safety helmet, safety shoes (boots), safety glasses and hand protection.

Eight (8) steps of PPE Guideline (Mansdorf, 2019):

- Evaluate an exposure to the risk of accidents,
- Carry out an assessment of other controls, establish performance characteristics required,
- Determine the barrier of ergonomic, evaluate the PPE requirements based on work environment,
- Selecting the PPE equipment based on hazard, quality and effective cost, provide training, then;
- Surveillance on the PPE application

There are (3) more items that required when applying criteria for PPE; through application, employee-owned equipment and safe design. The factors that influence of PPE practice on site: -

- The physical and psychological about the PPE usage.
- Perception of younger age in affecting use of PPE.

- Lack of enforcement and safety training by employer.
- The employee knowledge, belief and attitudes through perceptions of hazards and risk.
- Lack of support by management in supporting the safety culture

2.3 Types of Personal Protective Equipment (PPE)

PPE has several types of aspects, and each of them has its roles, which involves safety related to hearing, protection for eyes, respiratory safety, skin protection, and essential protection in the form of clothing that can reduce the impact, safety impact helmets, rescue belts, and lifelines which could save a life. PPE has limitations, and it cannot remove all risks associated with infrastructure projects. As a result, equipment must be chosen based on the requirements of the conditions of use (Fang, 2008).

Workers must be trained and educated before using any safety equipment. Head protective helmets, one of the oldest and most commonly used PPE in construction projects, guard against impact blows, resist penetration, and absorb the shock of a strike. Arm and hand protection includes safety gloves that protect against blisters, cuts, electrical shock, amputation, and chemical contact, which are all risks related with arm and hand accidents. Ear Safety is used to protect the ears from extreme noise levels, which can lead to hearing loss or weakening. Noise-induced hearing loss has no treatment. One of the most important PPE considerations in construction is eye and facial protection. When molten metal, liquid chemicals, acids or corrosive liquids, chemical gases or vapours, or chemical gases or vapours are exposed to the worker's eyes or face, specific eye protection must be given (J. Izudi, 2017).

2.3.1 Safety helmet



Photo 8: Safety helmet

2.3.2 Safety harness



Photo 9: Safety harness

2.3.3 Safety goggles



Photo 10: Safety goggles

2.3.4 Safety boots



Photo 11: Safety boots

2.3.5 Safety gloves



Photo 12: Safety gloves

2.3.6 Safety earplugs



Photo 13: Safety earplugs

2.4 Safety Issues

Countries are dealing with safety challenges; personal protective equipment (PPE) is required in a range of industries, including construction, and PPE might change depending on the wearer's working environment. Instructions and policies must be followed, and workers must be effectively taught and supervised. However, some hazards remain even after these safe work systems have been implemented (C. M. Tam, 2004).

In the construction industry, a safety management system is the part of the organisation that is responsible for the workers' health and safety. According to company rules and regulations, and in the event of an accident, the planning for individual prevention and safety is impacted. Safety equipment includes items that protect a user from any uncertainty. It is required to lessen the danger of being affected by various employment circumstances. Physical, mechanical, electrical, and chemical dangers are some of the most common causes of workplace hazards.

2.4.1 Total number of construction accidents in Malaysia from 2014 to 2020

In Malaysia, there were a total of 206 construction accidents as of December 2020. The number of construction-related occupational accidents in Malaysia was fewer than the previous year, due to the postponement of several construction projects due to the COVID-19 pandemic (R. Hirschmann, 2021).

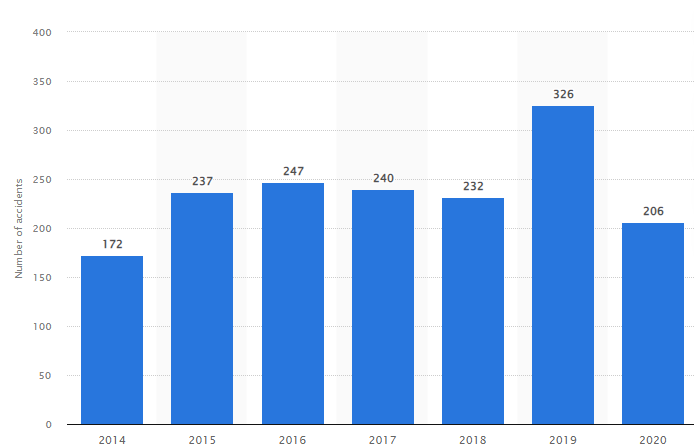


Figure 1: Number of construction accidents

2.5 Causes of Accidents in Construction Infrastructure

In the construction sector, the cause of injuries has been examined and classified into two major human and physical factors. Accidents occur due to a lack of safety awareness, a lack of educational training, a lack of company assurance and practical counsel, unregulated activity and a lack of safety investments, untrained skills, and insufficient equipment. The absence of first aid, the absence of strict application of safety rules, the lack of PPE, the absence of protection in transport and storage materials, the absence of team spirit, the absence of adequate safety management, the absence of modern technology, and a poor flow of information (A. Enshassi, 2008).

2.6 Construction Health and Safety

When it comes to safety management in the construction industry, the use of Occupational Health and Safety (OHS) principles has been a frequent matter in developed countries and Malaysia as well. The construction industry in Malaysia has the greatest number of deaths compared to other industries and is recognised as the third most dangerous industry, characterised by weak safety measures, resulting in poor health and safety records. One of the studies discusses the application of PPE and why it is necessary to wear PPE on the construction site (J. Izudi, 2017).

CHAPTER 3

**CASE STUDY AT UNIVERSITI
MALAYSIA TERENGGANU,
BUKIT KOR**

3.1 Project Description

This project is titled 'Projek Pembinaan Kompleks Pusat Pendidikan & Pembangunan Insaniah, Universiti Malaysia Terengganu, Kampus Bukit Kor di atas Lot 61108, Mukim Rusila, Daerah Marang, Terengganu Darul Iman.' This project is being carried out on a 600.70 acre plot of land (243.10 hectares). The landscape of the site region is hilly, with plains and valleys. The project area's highest point is 120.19 metres above sea level, while its lowest point is 3.90 metres below sea level. UMT Campus Bukit Kor is located in the Marang area, approximately 6 kilometres from Marang and 20 kilometres from Kuala Terengganu.

Sulong Engineering Sdn. Bhd. is the main contractor on this project. It is made up of three levels of administration, one level of college, and additional support blocks that work around the building. In order to achieve long-term growth, one-third of the site area will be used for the building of the UMT Campus Bukit Kor, while the remaining two-thirds would be left natural. In a word, this project consists of building and infrastructure construction.

CONTRACT VALUE: RM 22M

CONTRACT DURATION: 104 WEEKS



Photo 14: Construction Site

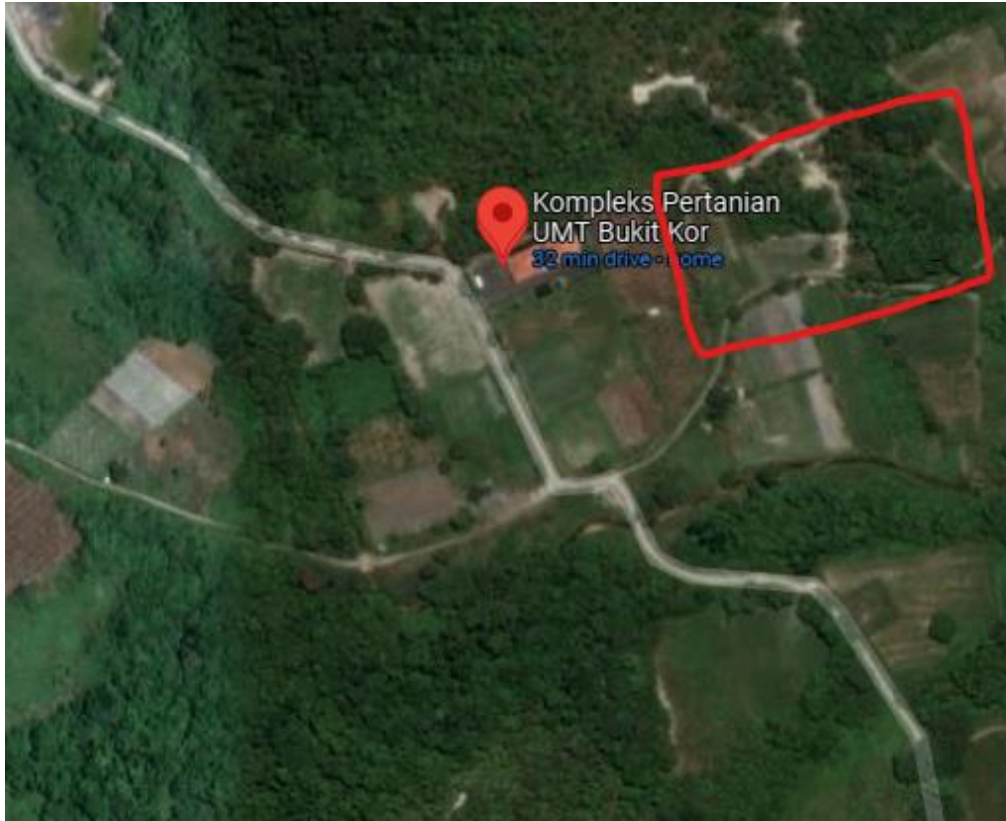


Photo 15: Location of construction site

3.1.1 Building Plan

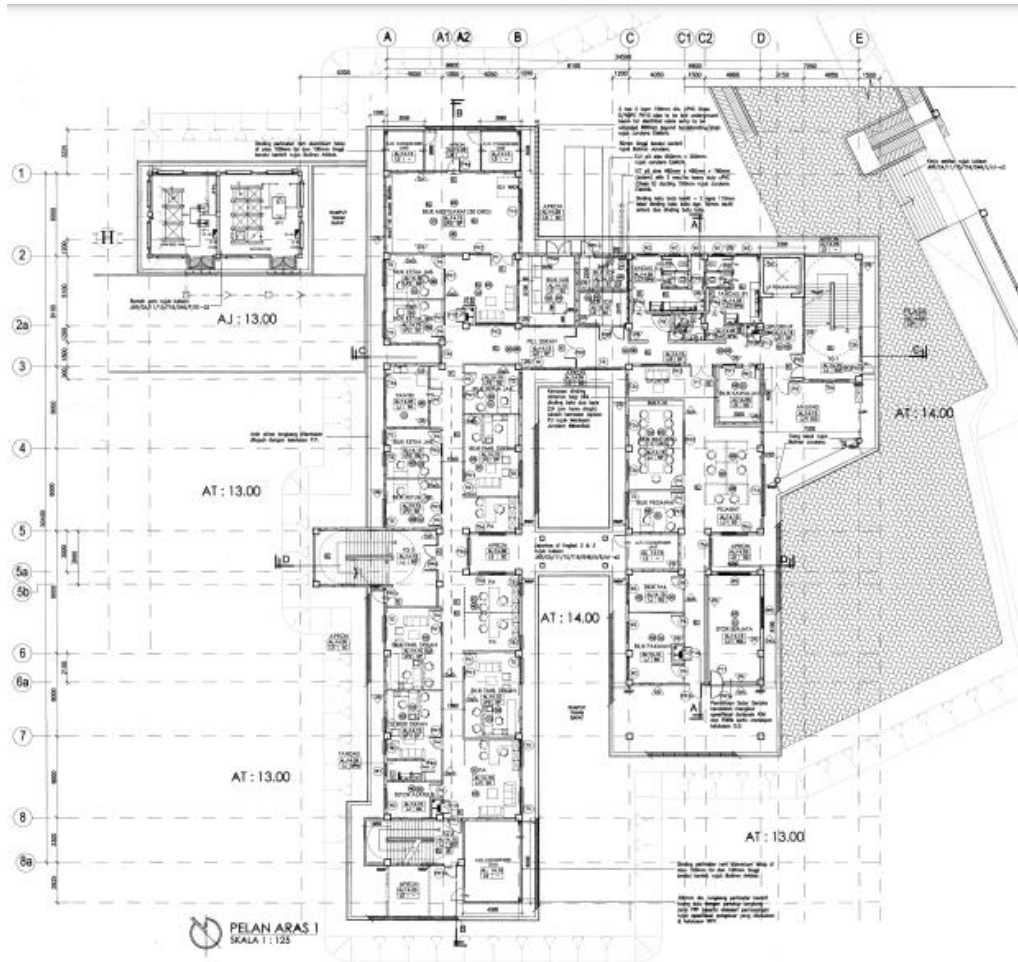


Photo 16: Administration block level 1

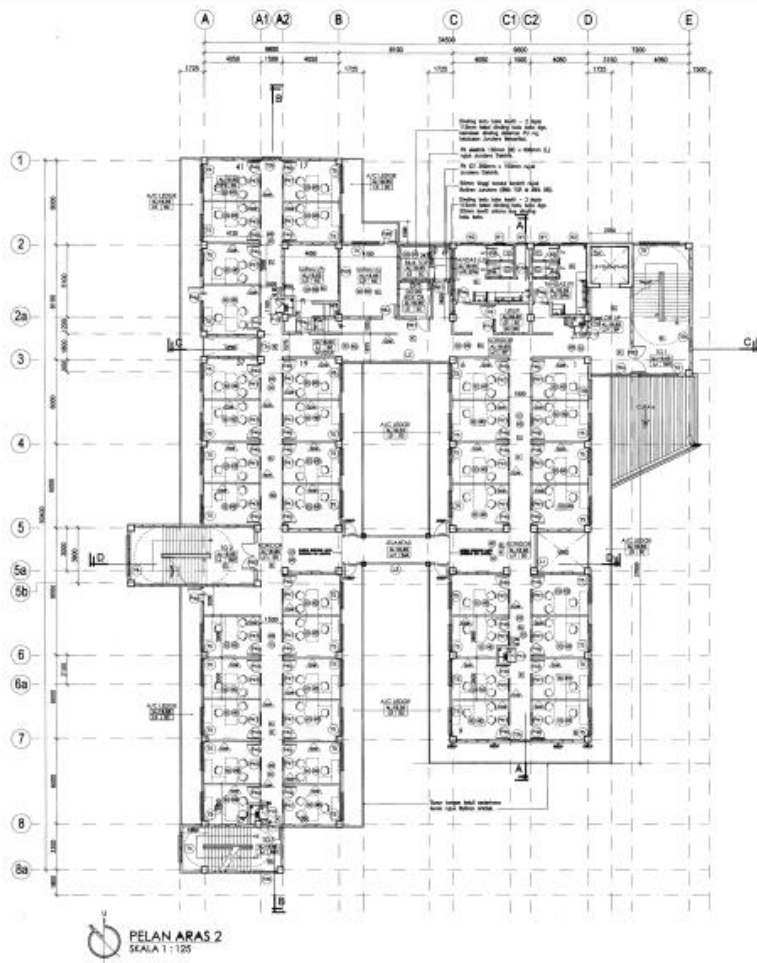


Photo 17: Administration block level 2

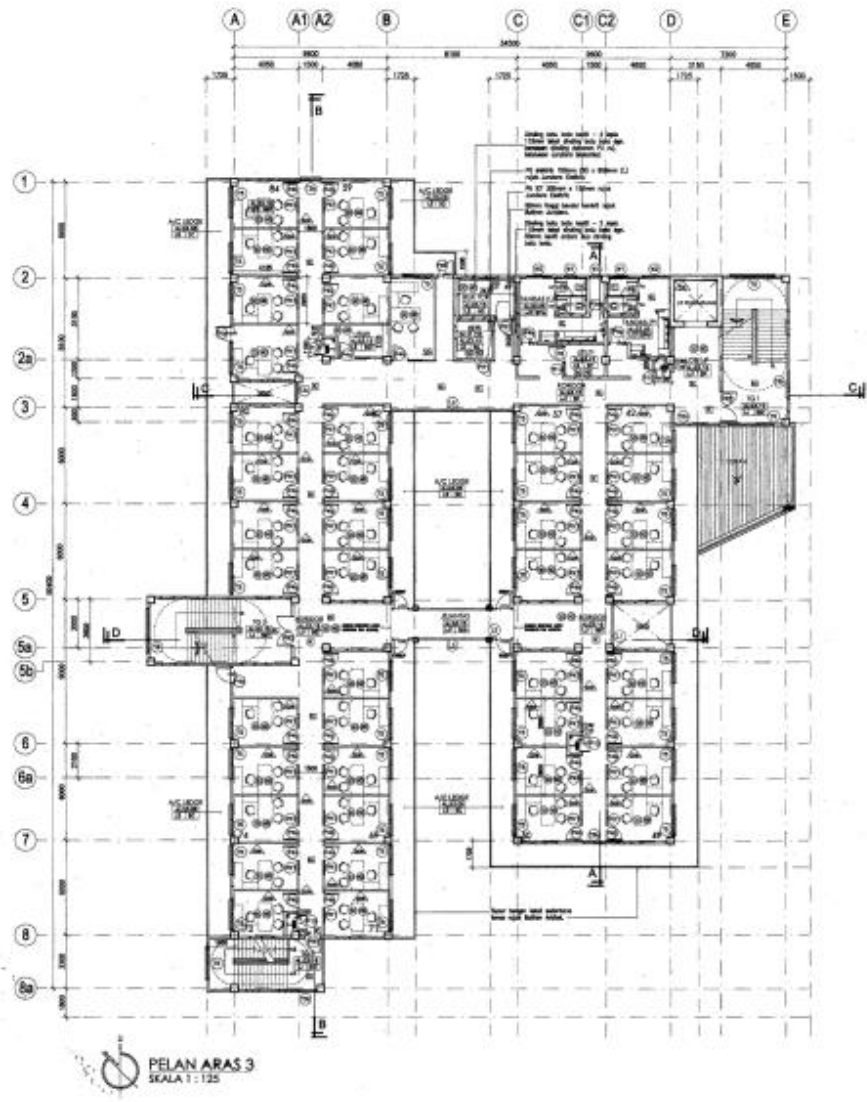


Photo 18: Administration block level 3

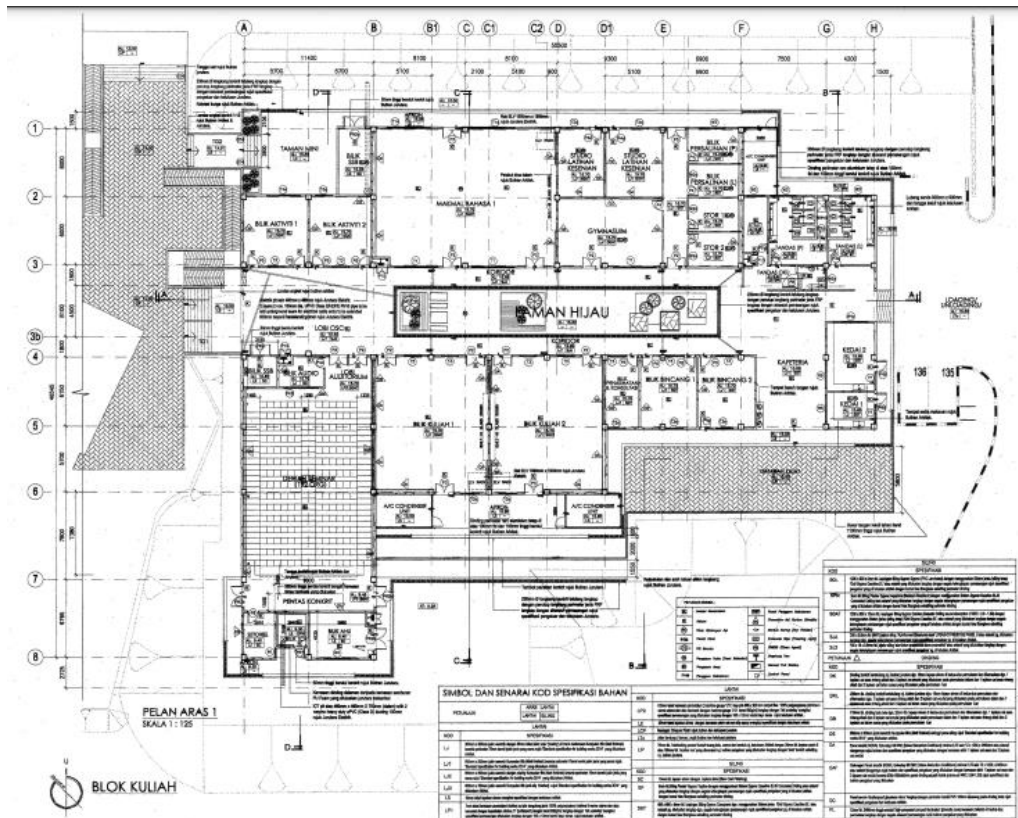


Photo 19: College block

3.2 Implementation of Personal Protective Equipment (PPE) For Safety Aspect among Labour

3.2.1 Housekeeping



Photo 20: Housekeeping

The labourers are cleaning up by dumping broken timber that can no longer be used into the bucket of the backhoe. As we can see, the labourers are wearing personal protective equipment (PPE) such as a safety helmet, hand gloves, and safety boots while performing their duties.

3.2.2 Mortar spraying to the wall



Photo 21: Mortar spraying

Labourers stand on a scaffolding platform, spraying mortar on the external wall of the administration block's level 2. They are outfitted with safety helmets, hand gloves, and boots, but no safety harness.

3.2.3 Scaffolding installation

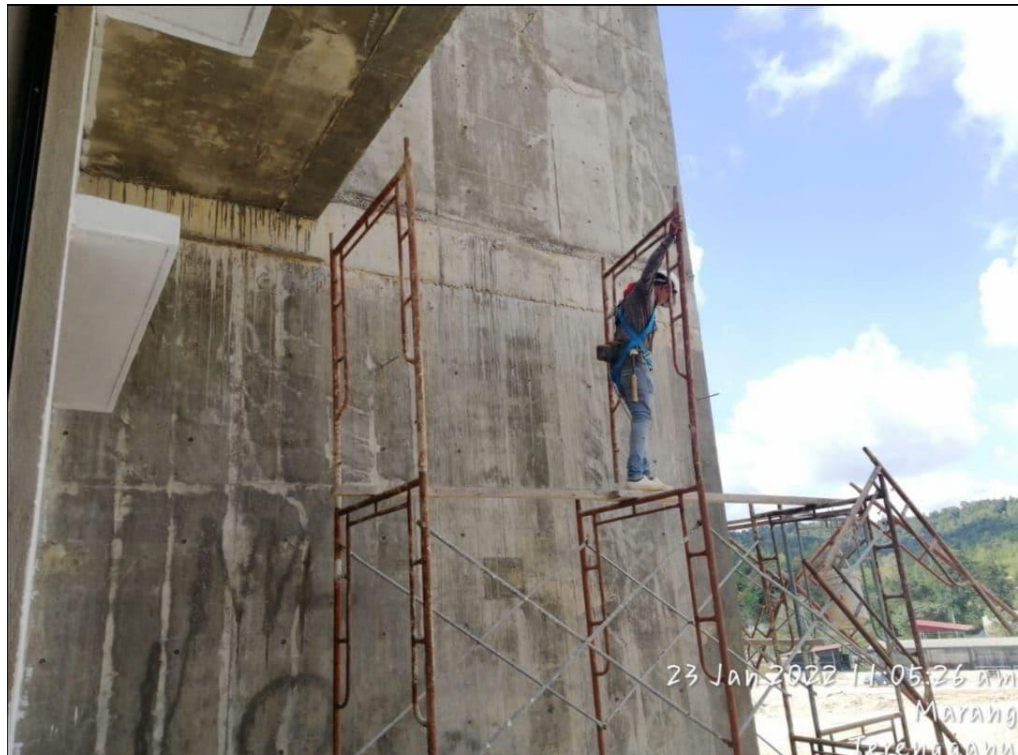


Photo 22: Scaffolding installation

The scaffolding is being installed by hand on level 2 of the administration building. He is wearing a safety helmet and harness, which is appropriate, but he is wearing regular shoes.

3.2.4 Compacting soil



Photo 23: Compacting soil

Two of the labourers are undertaking ground compacting work at the manhole location, while their supervisor stands on the upside. They are all wearing safety boots instead of helmets.

3.2.5 Brick walls installation



Photo 24: Brick walls installation

The labour is installing a brick wall on floor 3 of the administration building. He wears a safety helmet but no hand gloves.

CHAPTER 4

PROCESS AND ISSUES

4.1 Introduction

This chapter will discuss how I obtained information and the results about the implementation of personal protective equipment (PPE) for labour safety at UMT, Bukit Kor. This information is provided to assure that the labour is in perfect condition and is well guided. It is also for the benefit of the other building users, as well as their safety in the building.

4.2 Method

The questionnaire form for the respondent was designed with three questions about construction site safety and personal protective equipment (PPE). Respondents are labourers on construction sites. There were 30 forms distributed throughout the labourers, and all of the respondents cooperated well.

4.3 Result and Discussion

The data collection based on the questionnaires:-

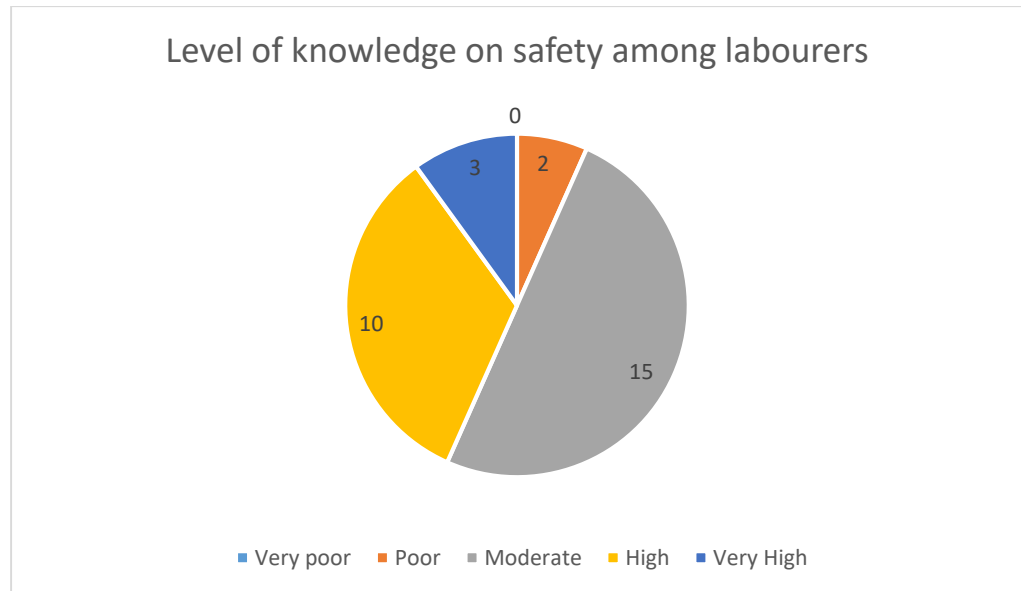


Figure 2: Level of knowledge on safety among labourers

Figure 2 illustrates a pie chart representing labourer's safety awareness levels. The highest possible score is 15, indicating a moderate level. This signifies that the level of information on safety has been classified as intermediate. In general, labourers were unaware of all applicable laws regarding building site safety. They will, however, be labelled as a labour who is concerned about safety. Although their understanding is limited, they are aware of the dangers of accidents on construction sites. In this scenario, the employer plays a critical role in raising labour safety awareness. Besides that, the initiative taken by labourers also important to prevent any accidents during working should be practices. Although they are 2 workers who had poor knowledge, at least they have the basic knowledge on safety at construction sites.



Figure 3: Stressing on safety aspects to labourers by employers

Figure 3 shows the Bar chart of stressing on safety aspects to labourers by employer. Based on Bar chart above, there have 19 of respondents was agree that employer stressing on safety aspects while at work. Then, 9 of them indicate that the employer was ‘sometimes only’ stress on safety. Lastly, 2 of them were disagreeing about this issue. Majority of the respondents was agree because of monitoring and surveillance on safety and worksite usually stressing by Safety and Health Officer (SHO) and Site Supervisor or employers representatives.

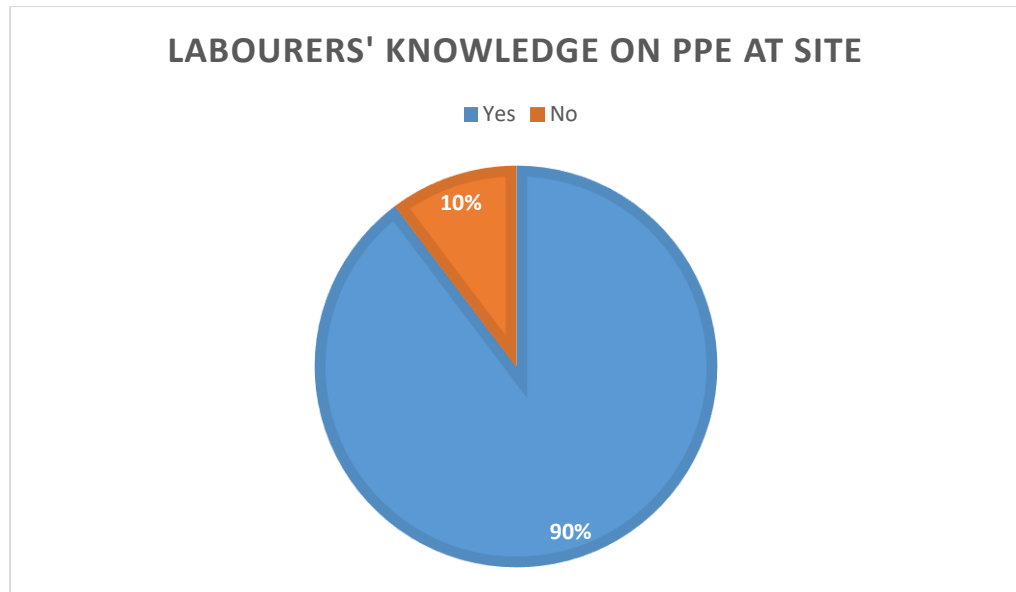


Figure 4: Labourers' knowledge on PPE at site

Figure 4 shows the Pie chart of labourers' knowledge on PPE at construction site. Based on Pie chart above, 90% of respondents were agreeing that they have knowledge about PPE on site. While 10% of respondents indicated that, they do not have knowledge on PPE. Definitely, those who had answer moderate and above have a greater knowledge into PPE. This is because they were given an exposure and initial safety training basic in the worksite. PPE is the important basis for safety at worksite.

However, it is impossible to determine whether workers are aware of this PPE while working or not. It is possible that they only wore the PPE equipment when directed to do so by the SHO or when an authority visited them. However, when surveillance and monitoring are not carried out, they breach the requirements indiscriminately, such as not wearing PPE equipment while working. While some respondents did not know about PPE, it is possible that they did not attend the CIDB course. Nonetheless, whether or not a worker has completed the training, an employer must supply PPE equipment regularly.

CHAPTER 5

**CONCLUSION AND
RECOMMENDATION**

5.1 Conclusion

The use of personal protective equipment (PPE) on construction sites benefits all parties, including employees, employers, and authorities. The usage of PPE should become a top priority in order to protect workers and avoid major accidents. When all parties worked together, this problem might be solved and the number of accidents in our country would be minimised.

5.2 Recommendation

Employees should be regularly reminded of the importance of PPE application. To ensure that personnel wear PPE while working, an efficient and effective action must be devised and implemented. As a result, all stakeholders (DOSH, CIDB, NIOSH, PWD, employer, etc.) should take the lead and collaborate to achieve the goals of ensuring PPE application among workers on the job.

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APPENDICES

Questionnaire given to labourers.

1. What are your level of knowledge on safety?

- a. Very poor
- b. Poor
- c. Moderate
- d. High
- e. Very high

2. Do employers stressing on safety aspects to you?

- a. Yes
- b. No
- c. Sometimes only

3. Do you have knowledge on PPE at site?

- a. Yes
- b. No