



**DEPARTMENT OF BUILDING  
UNIVERSITI TEKNOLOGI MARA  
(PERAK)**

**BUILDING MAINTENANCE ( BUILDING DEFECT)**

**Prepared by:**

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**DEPARTMENT OF BUILDING  
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING  
UNIVERSITI TEKNOLOGI MARA  
(PERAK)**

**AUGUST 2021-JANUARY 2022**

**By**

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**entitled**

**BUILDING MAINTENANCE (BUILDING DEFECT)**

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I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Bahagian Pengurusan Fasiliti (BPF), UiTM Cawangan Pera006B, Kampus Seri Iskandar for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfilment of the requirements for obtaining the Diploma in Building.

.....

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Date : 22/12/2021

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i would also like to give a special gratitude to my family for supporting my in whatever i do since day one until present. A family who will love us unconditionally no matter what. A family who will always have our back, cheer us on, support me in anyway especially financially in study and will sacrifice anything just to make me live happily and comfortably. It is because of my family that i have the strength to grow, take chances and opportunities, and live, because i knew they were have my back every step of the way. It is because of them that i were shaped into the person that i are today and continue to be.

Never forget to give a huge salutation and thanks to my friend for showing a full commitment and good teamwork to finish the task given by our lecturer. We were already divided into 6 group member and not complain while doing this task together. We were also willing to sacrifice our leisure and sleeping time just to form a study group during day and night to complete the task. Together in sickness and good times, loving and not hating each othe

## **ABSTRACT**

All actions required to keep a building functioning and liveable are referred to as building maintenance. A single building needs a professional team of many individuals with various maintenance skills such as electrical, plumbing, and HVAC. Building maintenance entails a number of tasks that contribute to the creation of a safe and comfortable work or living environment for the occupants of a building. Routine maintenance services range from anything within a building, such as cleaning toilets and maintaining electrical systems, to anything outside a building, such as lawn care and landscaping. The aim of this report was conducted for the maintenance works including the removal and the installation of the defect or damage unit throughout the required building in UiTM Cawangan Perak, Kampus Seri Iskandar. The objective of this report is to study the maintenance process of damage system as well as to determine the problems and solutions for each complaints received. The study will focus on the procedures and the types of air conditioner units involved including the method used for each maintenance works. In addition, this report also took a huge aspect regarding the element of damages and the status of work priority within the maintenance period to solve the problems.

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## CHAPTER 1.0

### INTRODUCTION

#### 1.1 Background of Study

Building maintenance refers to the operations that are carried out in order to preserve and restore the functionality of residential and commercial structures. Cleaning, gardening, and electrical system maintenance are examples of chores included. It strives to provide renters with a safe, functional, and comfortable environment at all times and also bring the communities together.

Property owners and managers owe it to building occupants to provide them with decent living and working surroundings. However, most people don't consider the labour that goes on behind the scenes to achieve these expectations. Maintenance workers examine, fix, and replace equipment parts on a regular basis to keep assets working. To ensure that operations continue, personnel may sweep snow from walkways, clean HVAC filters, and perform preventive maintenance (PM) chores on any given day (MAINTAINX. (2020, October 29). *what is building maintenance*. What Is Building Maintenance? As soon as occupants notice a plumbing issue, maintenance takes center stage. Translation: Maintenance is “out of sight, out of mind” until something goes wrong. For this reason, the best maintenance teams mostly go unnoticed because they prevent major breakdowns, inconveniences, and safety hazards from occurring with proactive maintenance that tenants may not notice.

One of the importance of air conditioners is that its can improve the quality of the air. Air conditioning units not only keep the right amount of moisture and temperature, but they also

improve the quality of the air. Air conditioners circulate filtered, clean air throughout a home. This clean air is free of dirt particles from the outside, excess dust, and even bacteria that enter through the doors and windows. This filtered air creates a healthier, cleaner environment, which is ideal not only for children and families, but also for commercial settings where large groups of people work together for long periods of time. Air Maxx, (2017). (The Importance of Air Conditioners - Air Maxx Heating & Air Conditioning [Online]. Available: <https://airmaxx.com/importance-airconditioners/> Retrieve on 11 October 2021.)

The care and preservation of equipment and systems that deliver electricity to a residential, industrial, or commercial facility is referred to as electrical maintenance. It might be done by the site's owner or management, or by an outside contractor. The work is often conducted on an as-needed basis or on a timetable dependent on the age of the building or the complexity of the electrical system. Power outlets and surge protectors, generators, and lighting systems are some of the most typical areas of basic electrical maintenance. These sources of supply are examined for structural integrity as well as internal stability. The maintenance plan often involves the repair of burned out fluorescent and incandescent lights on a regular basis. In recent years, many building managers have retrofitted their lighting systems with energy-saving bulbs and components. Damewood, C. L. (2021, May 19). *What is electrical maintenance?* Practical Adult Insights. Retrieved January 9, 2022,

Minor flaws include non-structural cracks, wall dents, water leakage, corrosion, and general degradation pale in comparison to significant flaws like building settlement, soil erosion, and structural flaws. Minor flaws are not a serious concern and usually do not provide a safety risk in the near term; but, they may influence the structural integrity of a structure in the long run, eventually posing a safety danger. When smaller flaws are detected, these must be corrected as well. When it comes to significant building faults, prompt action and protections must be done without delay. Building Defect Assessment is similar to a "surgical investigation" for a building. IPM Professional Services has

extensive expertise in delivering Building Fault Assessment services, which include inspecting the building conditions, performing relevant investigations, and producing a defect evaluation report. If serious flaws are discovered during the Building Condition Assessment procedure, a Building Defect Assessment will be required. In a nutshell, building defects are errors in the construction or design, as well as the impacts of natural catastrophes on the structure, which reduces the life of a building. The fault may not only present cosmetic concerns, but it may also endanger the users' safety, resulting in the structure collapsing or catching fire in the worst-case scenario. As a result, it is critical to hire experienced consultants to undertake Building Defect Assessment in order to determine the main causes and potential solutions to building defect problem.

*Building defect assessment: Building audit & structural inspection.* IPM. (n.d.).

Retrieved January 9, 2022

## **1.2 Objectives**

- I. To study the building maintenance at FSPU Annex 1, Jabatan Senibina, UiTM Cawangan Perak, Kampus Seri Iskandar.
- II. To determine the problems and solutions for during maintenance process at section 3 and 4 in UiTM Cawangan Perak, Kampus Seri Iskandar.

## **1.3 Scope of Study**

This study is carried out in the compound of UiTM Cawangan Perak, Kampus Seri Iskandar, 32610, Seri Iskandar Perak. The main study focus is to study the maintenance for building defect In zone 3 and 4 as well as to determine the problems and solutions for each complaints received in this 2 section that involved. Besides, the study also includes the contractors, procedures and works involved.

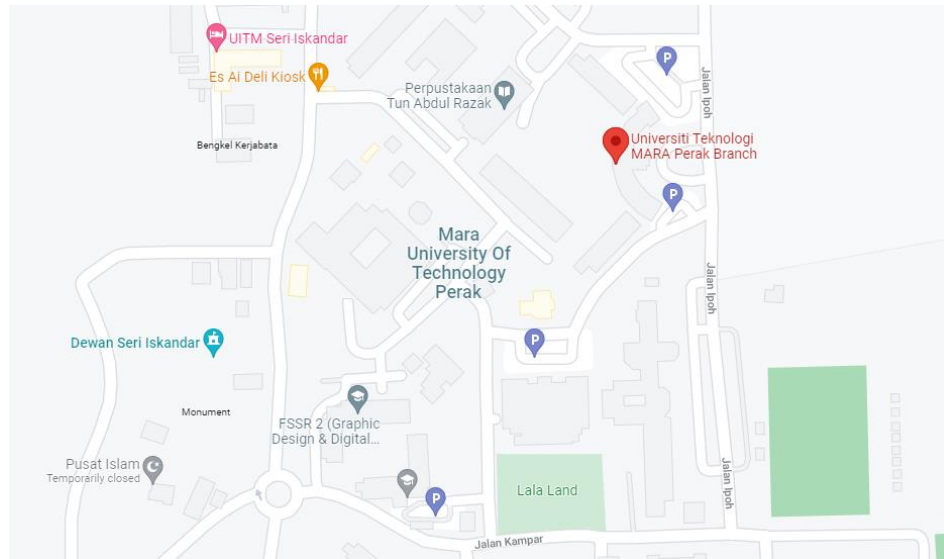


FIGURE 1.1 :UITM SERI ISKANDAR PERAK BRANCH

## 1.2 Methods of Study

- The method that i used to collect data is observational data

### I. Observational data

- First of all, the observation will conduct during the working hour. The maintenance work will be observed when the report from eaduan is out. To make sure the report is true, we need to observe the location that has been report on eaduan. The working hour is from 8 a.m. to 5 a.m. while to report the problem through eaduan is 24 hours. And every week I need to patrolling around zone 3 and 4 to make sure the building is well maintenance. During and after the maintenance works. There data were recorded by written notes in my notebook and also the notes application in my smartphone. Besides, some pictures of the process involved also taken to help my understanding about each of the methods applied.

## **COMPANY BACKGROUND**

### **2.1 Introduction of Company**

Bahagian Pengurusan Fasiliti (BPF) UiTM Cawangan Perak, Kampus Seri Iskandar have been operating for 24 years. BPF is a department under the management of UiTM Cawangan Perak, Kampus Seri Iskandar besides any other department such as faculties and colleges. BPF has done several cooperation with engineers and contractors company for each unit within the administration, contract, electrical and communication, mechanical and also the public unit. There are also general workers and skilled workers that were experienced in each units.

Bahagian Pengurusan Fasiliti (BPF) is a support service organization that has the responsibility to enhance the university's service delivery system. Next, in order to improve teaching and learning development in line with UiTM's mission to become a leading institution of higher learning.

Bahagian Pengurusan Fasiliti (BPF) 's policy is to conduct a comprehensive service delivery system and competitiveness, is in line with the latest technological developments in order to achieve a high level of capability to support teaching and learning activities of the University as well as creating a sustainable campus environment.

### **2.2 Company Profile**

Bahagian Pengurusan Fasiliti (BPF) UiTM Perak is deeply involved in services work for the facilities in UiTM Perak including the administrative building, academic and also the student residential area. The department were located at UiTM Cawangan Perak, Kampus Seri Iskandar, 32610, Seri Iskandar Perak Darul Ridzuan.



**Figure 2.2.1: BPF UiTM Perak**

The vision of BPF UiTM Perak is to be a professional Bumiputera facility management organization in line with the vision of university. Next, the main mission of BPF UiTM PERAK is to enhancing facilities management and optimizing the use of assets professionally using the best technology to provide the infrastructure for education. Besides that, BPF also focusing on to be a conducive as well as dynamic learning and research environment to the university.

## 2.3 Company Organisation Chart

### ORGANISATION CHART

#### BAHAGIAN PENGURUSAN FASILITI UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK, KAMPUS SERI ISKANDAR

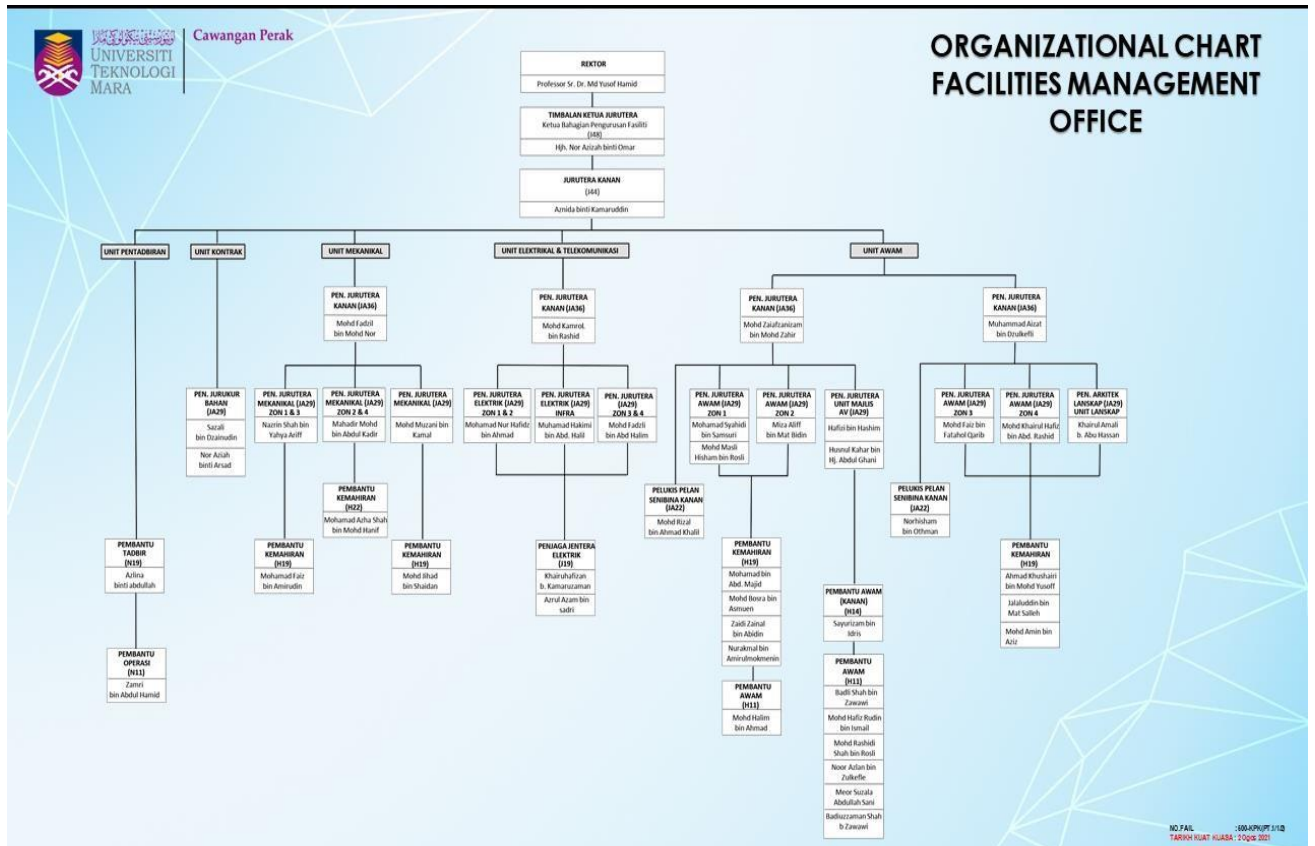


Figure 2.3.1: Organization Chart

Source : <https://perak.uitm.edu.my/clone/index.php/office/development-facilitymanagement/26-offices/development-facility-management/408-event-bpf>

## 2.4 List of Projects

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1.	Maintenance of college door, rusty door knob lock, (not critical) at Kolej Pasir Salak,Damar	No value stated	16/12/2021	18/12/2021	3 days	MOHAMAD AINUDIN BIN MOHD NOOR
2.	Maintenance of Clogged floor catch channel (not critical) at Kolej Indera Mulia ,Kekwa	No value stated	16/12/2021	18/12/2021	3 days	NURAZIRA BINTI ZAMALI
3.	Maintenance of leaking pipe head (not critical) at Blok Kekwa 1/ Pej. Pengurusan Kolej Indera Mulia	No value stated	08/12/2021	10/12/2021	3 days	MUKHAMAD KHAFIZ BIN ABDUL BASIR

**Table 2.4.1: Completed Projects**

### 2.4.2 Project in Progress

No.	Project Title	Project Value	Start Date	Completion Date	Project Duration	Client
1.	Maintenance of The sink pipe unplugged (Not critical) at Kolej Indera mulia ,kekwa	No value stated	11/12/2021	-	-	AINUR DANISHA BT JAAFAR

**Table 2.4.2: Project in Progress**



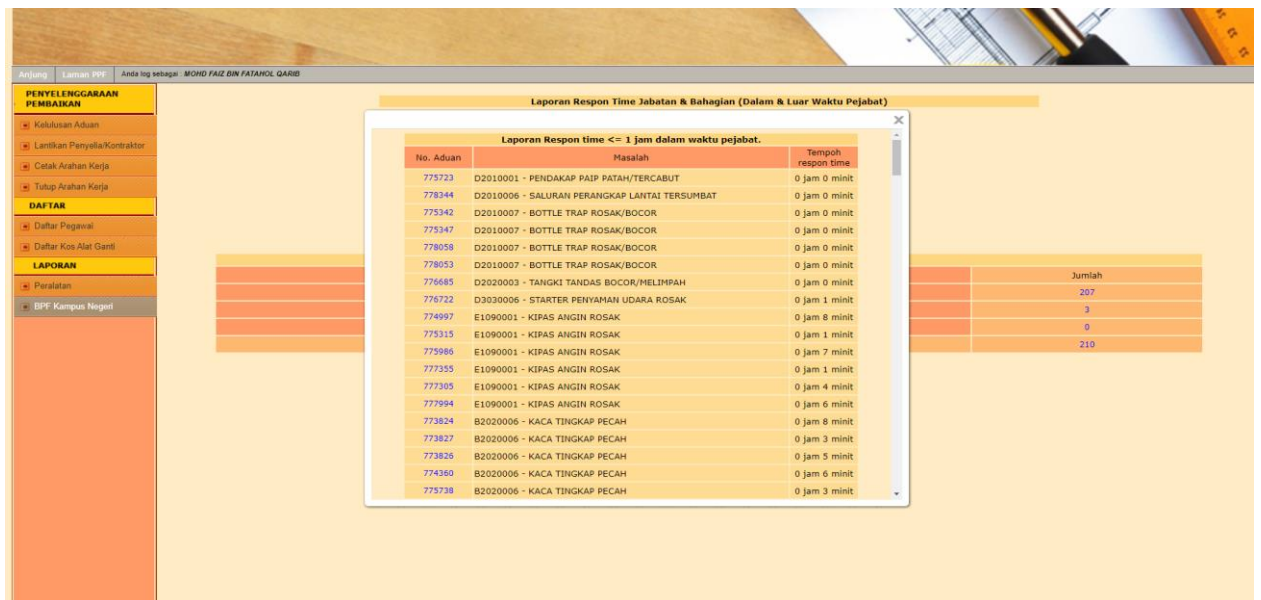
## CHAPTER 3.0

### Case study

#### 3.1. Introduction of case study

- II. In this case study, its about maintain the building structure and building equipment such as hose reel , toilet equipment , college door, fire extinguisher, electrical item, and etc and the maintenance process held to solve the problem from the report taken.
- III. To study the maintenance process of maintenance work at Kolej Pasir Salak, UiTM Cawangan Perak, Kampus Seri Iskandar.

#### Check the complains at Eaduan



Arjany | Laman PPF | Anda log sebagai: MOHD FAIZ DIN FATAHOL QARIB

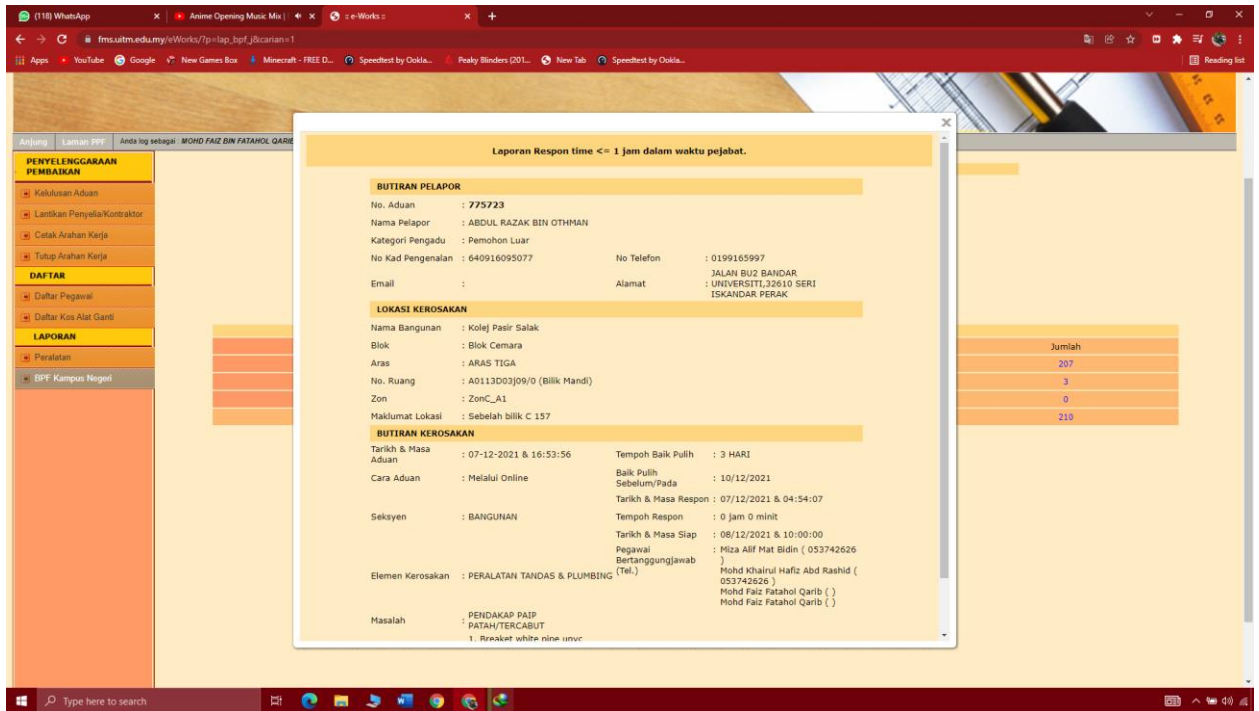
Laporan Respon Time Jabatan & Bahagian (Dalam & Luar Waktu Pejabat)

Laporan Respon time <= 1 jam dalam waktu pejabat.

No. Aduan	Masalah	Tempoh respon time
775723	D2010001 - PENDAKAP PAIP PATAH/TERCABUT	0 jam 0 minit
778344	D2010006 - SALURAN PERANGKAP LANTAI TERSUMBAT	0 jam 0 minit
775342	D2010007 - BOTTLE TRAP ROSAK/BOCOR	0 jam 0 minit
775347	D2010007 - BOTTLE TRAP ROSAK/BOCOR	0 jam 0 minit
778058	D2010007 - BOTTLE TRAP ROSAK/BOCOR	0 jam 0 minit
778053	D2010007 - BOTTLE TRAP ROSAK/BOCOR	0 jam 0 minit
776685	D2020003 - TANGKI TANDAS BOCOR/MELIMPAH	0 jam 0 minit
776722	D3030006 - STARTER PENYAMAM UDARA ROSAK	0 jam 1 minit
774997	E1090001 - KIPAS ANGIN ROSAK	0 jam 8 minit
775315	E1090001 - KIPAS ANGIN ROSAK	0 jam 1 minit
775986	E1090001 - KIPAS ANGIN ROSAK	0 jam 7 minit
777355	E1090001 - KIPAS ANGIN ROSAK	0 jam 1 minit
777305	E1090001 - KIPAS ANGIN ROSAK	0 jam 4 minit
777994	E1090001 - KIPAS ANGIN ROSAK	0 jam 6 minit
773824	B2020006 - KACA TINGKAP PECAH	0 jam 8 minit
773827	B2020006 - KACA TINGKAP PECAH	0 jam 3 minit
773826	B2020006 - KACA TINGKAP PECAH	0 jam 5 minit
774380	B2020006 - KACA TINGKAP PECAH	0 jam 6 minit
775738	B2020006 - KACA TINGKAP PECAH	0 jam 3 minit

Jumlah
207
3
0
210

Figure 3.1.1 : Eaduan website



**Figure 3.1.2 : Eaduan website detail**

e-Aduan system is an initiative set up to enable the public to question in connection with the Department of Environment and pollution complaints at any time without boundaries of time and distance easily and quickly. e-Aduan system is controlled by the Enforcement Division of the Department of Environment. Eaduan need to be check every hour by uitm staff that responsibility to ensure the rating and safety for student at college.

# Work instruction form



## BORANG ARAHAN KERJA

**BUTIRAN PELAPOR**

No. Arahan Kerja : 1111894813  
 No. Aduan : 760418  
 Tarikh & Masa Aduan : 18-OCT-21 - 05:05:53pm  
 Kategori Pengadu : INISIATIF  
 Nama : MOHAMMAD AZHA SHAH BIN MOHD HANIF  
 Jawatan : PEMBANTU KEMAHIRAN KANAN  
 Jabatan/Bahagian :  
 No. Bilik : (-)  
 Email : moham248@uitm.edu.my

No. Telefon Pejabat : 05-3742626  
 No. Sambungan :  
 No. Telefon Bimbit : 019-4651670

**LOKASI KEROSAKAN**

Bangunan : FSPU Annex 1  
 Blok : FSPU - Jabatan Senibina  
 Aras : ARAS DUA  
 No. Ruang : A0127A02024/0 ( Bilik Pensyarah )  
 Zon : ZonB\_A1  
 Maklumat Lokasi : AP1 010

**BUTIRAN KEROSAKAN**

Seksyen : MEKANIKAL  
 Elemen Kerosakan : PENYAMAN UDARA  
 Masalah : PENYAMAN UDARA ROSAK  
 Status Keutamaan Kerja : Tahap 3 (Tidak Kritikal)  
 Tempoh baik pulih : 3 HARI  
 Keterangan Kerosakan : Tidak Ekonomi untuk dibaiki.  
 Sebab Kerosakan :  
 Jenis Peralatan : ()  
 Jenama :  
 No. Model :  
 No. Siri :

**BUTIRAN TINDAKAN**

Tarikh Respon Aduan : 18-OCT-21  
 Masa Respon Aduan : 05:06:06pm  
 Tarikh Respon Tapak :  
 Masa Respon Tapak :  
 Nama Penyelia : Mahadir b. Mohd Abd. Kadir  
 Tarikh Siap :  
 Masa Siap :  
 Kos Pembaikan/Gantian : RM 0.00  
 Demerit : -  
 Keterangan Kos :

**BUTIRAN PENGESAHAN**

<p>Disiapkan oleh :</p>  <p><b>KNC MASTER ENGINEERING</b>          (No. Pendaftaran 011398349-A)          Kompleks Ailing SME Bank          Tingkat 21, Jalan Pauschana Kledang Utara 6          Masa : Kledang, Perak, Malaysia          Penitahan Pengadu : Darul Ridzuan          H/P: 012-5012811</p>	<p>Diperiksa &amp; Disahkan:</p>  <p>MAHADIR B. MOHD ABD. KADIR          Pengurusan Fasiliti</p> <p>Nama :          Tarikh :</p>	<p>Mengambil Maklum Kerja Telah Selesai          Dibuat :</p>  <p>MOHAMMAD AZHA SHAH MOHD HANIF          Pengadu</p> <p>Nama :          Tarikh :          Masa :</p>
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NOTA : Pengguna dianggap berpuashati sekiranya tidak membuat penilaian

Figure 3,2,1 : Work Intruction form

## Detail Maintenance work

**ARAHAN KERJA / PEMBAIKAN PROJEK KECIL ZON 2&4 (OKTOBER 2021)**

**Perkara :** Membekal, Memasang, Mengganti & Mengujiterima Satu (1) Unit R410A Non-Inverter Wall Mounted Split Unit Air Conditioning System di FSPU (Jabatan Seni Bina)

**No. Arahkan :** 04/2021 **Tarikh Mula :** 20/10/2021

**Tarikh :** 18/10/2021 **Tarikh Siap :** 26/10/2021

**BUTIR-BUTIR**

Untuk diisi, ditandatangani dan diberi tarikh oleh Jurutera Kanan/Penolong Jurutera/UiTM yang berkenaan

Lokasi	Bil	Keterangan Kerja Dan Bahan-Bahan	JUH	Bil & Dimensi				Unit	Qty	Kadar	Jumlah (RM)
				Bil	P	L	D				
Bilik Pensyarah (27A 01 024/0) AP1 010	75	To complete dismantle split unit air conditioning system and transport to store as directed by the S.O. b) 1.0 hp	E11/8					no	1	105.00	105.00
	88	To supply, deliver and install the complete R410A Non-Inverter Wall Mounted Split Unit air conditioning system c/w refrigerant pipe (back to back /less than 10 feet) wired remote and drain pipe to nearest drain, pipe insulation, control & power wiring inclusive iron bracket, hanger and make good the defect area to match surrounding and colour c) 18,000 Btu/hr	E11/9					no	1	2,618.00	2,618.00
<b>JUMLAH KESELURUHAN</b>											<b>2,723.00</b>

Saya memperakui bahawa kualiti dan kadar harga yang dibutirkan di dalam permintaan ini telah diperiksa dan didapati betul :

<p><b>Disediakan Oleh :</b> Pegawai Yang Bertanggungjawab (Penolong Jurutera)</p> <p><i>[Signature]</i></p> <p>Nama : .....</p> <p>Cop : .....</p> <p>Tarikh : <u>18/10/2021</u></p> <p><b>Dipersetujui Oleh :</b> Kontraktor (Pengurus/Wakil Syarikat)</p> <p><i>[Signature]</i></p> <p><b>KNC MASTER ENGINEERING</b> (No. Pendaftaran 001398340-A) Koridor 5, Kiling SNE Bank Lot 21, Hala Perusahaan Kletang Utara 6, Kawasan Perindustrian Meritoba 31450 Menglembu, Perak Darul Ridzuan. H/P: 012-5012871</p>	<p><b>Dimaklumi Oleh :</b> Pegawai Yang Bertanggungjawab (Penolong Jurutera Kanan)</p> <p><i>[Signature]</i></p> <p>Nama : .....</p> <p>Cop : .....</p> <p><b>Disemak &amp; Disahkan Oleh :</b> Pegawai Yang Bertanggungjawab (Penolong Jurutera)</p> <p><i>[Signature]</i></p> <p>Nama : <u>MAMAD HANI ABDUL KADIR</u></p> <p>Cop : .....</p> <p><u>22/10/2021</u></p>	<p><b>Disahkan Oleh :</b> Pegawai Yang Bertanggungjawab (Jurutera Kanan/Timbalan Pengarah PPF)</p> <p><i>[Signature]</i></p> <p><b>AZNIDA BT KAMARUDDIN</b> Jurutera Kanan Bahagian Pengurusan Fasilitas UiTM Cawangan Perak Kampus Seri Iskandar 32610 Seri Iskandar, Perak Darul Ridzuan.</p> <p>Tarikh : <u>18/10/2021</u></p>
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\* Maklumat Penting : Pihak Kontraktor perlu memastikan telah mempersetujui tarikh kerja yang telah ditetapkan. Sebarang kelewatan kerja akan dikenakan Denda mengikut klausa 21.3 mukasurat B5/11 didalam syarat-syarat kontrak

Figure3.2.2: Detail Maintenance work

work instruction is various but can be summarized as a document or record that describes the sequential steps to perform the work set to meet the standards and principles of safety on machines and users.

Before the maintenance work start, the work instruction letter needed to be printed and need to get the signature from KNC MASTER ENGINEERING and other staff that associated in this project to get approval to start the maintenance work.

### **Before and after the maintenance work**

installed in a properly vented system, a trap provides a liquid seal that prevents gas backflow without interfering with the flow of sewage or waste water through the system.

### **Clogged Sink and no bottle trap under the sink.**



**Figure 3.3.1 : the sink cannot be use**



Figure 3.3.2: The bottle trap is not installed or has been remove.

### **Installation of bottle trap**

Remove the inlet nut, or the largest nut attached near the lavatory, from the body of your bottle trap. Make sure the seal is inside the inlet nut. Place the body of the bottle trap around a tailpiece then tighten the inlet nut with clean strap wrench until it is flush against the bottle trap body. The outlet nut is the largest but near the pipe. Make sure to measure the length of drain stub-out to the outlet nut innermost edge. In less then 12 inch, cut with the hacksaw to get the accurate length. Insert at least 1 inch of pipe inside the outlet nut to ensure a proper compression fit. Slide the outlet nut with its ring and seal onto the pipe, with the y threads facing the bottle trap's body. Insert the pipe into the body of bottle trap and tighten the outlet not with wrench. Turn on the main water supply. Let the water run through the drain and check if there are leaks.



**Before maintenance of exposed wire located at Damar block**



Figure 3.3.3 : The steel panel Cover for the wire missing



Figure 3.3.4 : excess dangling wire.

### After maintenance of exposed wire located at Damar block



Figure 3.3.5: The steel panel has been installed and painted with white colour

There should be no exposed wire on a socket or electrical cord. Exposed wires can cause electric shock or electrocution. When connecting an open front plug to an electrical outlet, you run the danger of coming into touch with live wires. This also raises the possibility of electric shock or electrocution.



**Before the maintenance of toilet door at Kolej Pasir Salak Cemara B block**



Figure 3.3.6: No door and frame has been eaten by termites at toilet door Cemara  
B



Figure3.3.7 : the door has been removed to do the maintenance

the removed door will be taken to a maintenance place to repair the damage to the door and then painted with blue oil paint for the door to last a long. then the door will be taken to a place where there is no door to be replaced with a new one.

**After the maintenance of toilet door Kolej Pasir Salak Cemara B block**

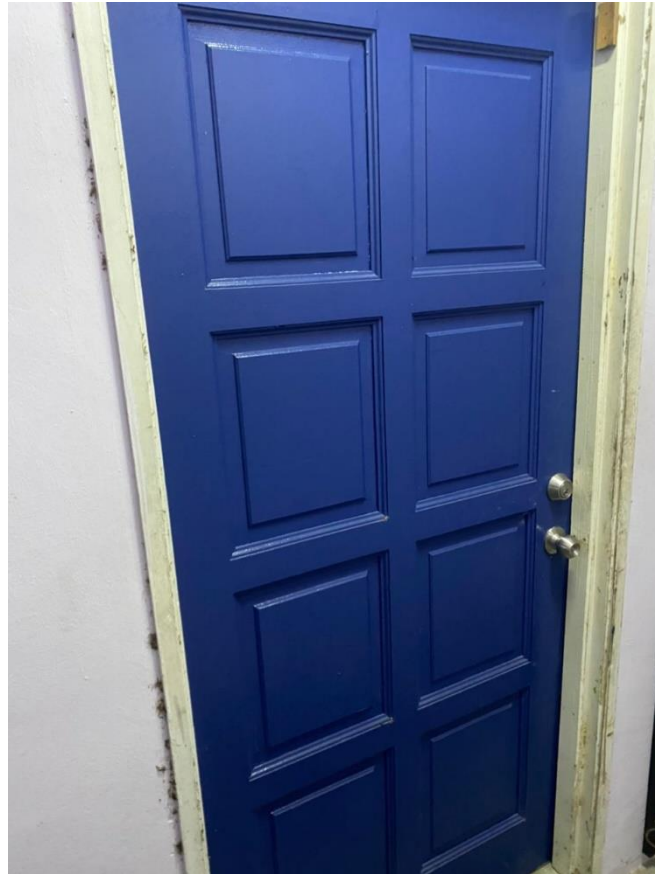


Figure 3.3.8: The new frame and door has installed

Termites may be avoided by scheduling regular expert inspections, which can help discover indicators of infestations sooner, minimising damage and lowering restoration costs. Any competent termite management strategy should destroy termites while also preventing future termite infestations and preventing termite damage.

**Before the maintenance of Distribution board at Kolej Pasir Salak, Damar A block**



Figure 3.3.9 : the steel plate on distribution box is removed

**After the maintenance of Distribution board at Kolej Pasir Salak, Damar A block**



Figure 3.3.10: the steel plate on distribution box has been installed

The steel plate were placed to the distribution box and screw where the screw need to be place. The steel plate is important as a second water proofing to prevent water from rain or leaking pipe into the distribution box

### **3.3 To determine the problems and solutions for during maintenance process at UiTM Cawangan Perak, Kampus Seri Iskandar.**

**Problem:** clogged sink.

Food and substances that do not break down, such as fibrous food, egg shells and non-food items, along with grease and oil, will build up in the pipes and create a clog in the drain over time. This can cause clogged sink that will block the water from entering the pipe and the sink will be fully with water.

**Solution:** Use hot water in the clogged sink

Fat, grease ,or other oil is full in the pipe especially in the kitchen. The old oil will became a butter in the pipe and will block the water. Using hot water will make it melt and the water will go through the pipe without any problem.

**Problem :** Expose wire in the steel plate at distribution board

The steel plate was removed but not installed back after the maintenance. Expose wire will result a fatal injuries to anyone if not being careful.

**Solution:** repair the expose wire and install the steel plate.

Make sure all the wire is safe and continue to install the steel plate to the wire to secure electricity getting damaging from the water and safety for others.

**Problem:** The door bold rusty

Rusty can cause a significantly damage to the steel if not prevent from the beginning. The door might be hard to twist because of rust already on the steel. Furthermore, rusty can reduce a lifespan on equipment or the product. It will cost a lot of money to replace with the new one.

**Solution:** Use sand paper or liquid that have carbonate and phosphoric acid.

Rusty can be remove by rubbing the steel or alloy that have been expose with the rust. Using Coca-Cola also work as stain remover which allow it to dissolve with metal oxide and break up rust on variety of metal and alloy. Phosphoric acid is effective as a boosting power to achieve high performance on removing the stain.

## **CHAPTER 4.0**

### **4.1 CONCLUSION**

In culmination, maintenance and replace is two different thing and it very crucial part in every life in the building . Every development necessitates the discipline of building upkeep. It is because the building must be carefully maintained in order for the property's worth to be preserved. Furthermore, the structure will continue to serve its purpose and provide convenience to the tenants and occupants.

The whole maintenance process in this area took around 2 days for the works held at Kolej Pasir Salak, UiTM Cawangan Perak, Kampus Seri Iskandar. The works started 16 November 2021 until 18 November 2021. All the works completed within the time estimated by the engineer.

All the method that were use in this process is similar to the theory that been taught. The process has no different method use to all the worker that has the experience to complete the task that have been given with no complicated method. To conclude, all the process were taken easily by the professional worker and finish the work follow by the deadline.

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