



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

**MAINTENANCE WORK AT APARTMENT LAGUNA BIRU**

**Prepared by:**

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(PERAK)**

**MAC 2016**

It is recommended that the report of this practical training provided

**By**

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**entitled**

**Maintenance work at apartment Laguna Biru**

accepted in partial fulfilment of requirement has for obtaining Diploma In Building.

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**STUDENT'S DECLARATION**

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 AMAS FM Consultant Sdn. Bhd. for duration 3 months starting from 23 November and ended 26 February 2016. It is submitted as one of the prerequisite requirements DBG307 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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Date : 26 February 2016

## **Abstract**

Maintenance is a very important thing to elaborate, therefore this report will discuss about the maintenance work in high rise building located at Rawang, Selangor. Every building need to inspect to ensure all the building system under good condition. The objective report is to study the maintenance works at high-rise residential building and to identify the problem that occurs during the maintenance works at the selected case study building. Observations, surveys, readings and researches have been done in order to collect information regarding the building maintenance process. Finally, this report will discuss about the process of building maintenance for high rise residential house.

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# CHAPTER 1.0

## PREFACE

### 1.1 Introduction

Building maintenance aims at keeping the building and services fully utilizable through effective application methods. Maintenance requires numerous skills by competent workers that are tasked to repair and maintain the safety of a building. Organising and task division are both challenging works that only ones who are skillfull may manage to do. Getting feedbacks regarding maintenance must always be a continuous process in order to improve the designs and constructions of a building(The constructor, 2016)

Maintenance can be categorized into three groups which are Mechanical and Electrical Services, Civil and Structure Services, and General Building Services. Mechanical and electrical services include lift and escalators, electrical and lighting system and also fire preventive system, while the structure of the building and sewerage system are under the civil and structure services. The inspection must be frequently conducted either daily, weekly, or monthly to check the condition of all the building equipment.

Basically for this 17<sup>th</sup>-floor apartment, the maintenance involved the lift system, generator set room, motor and storage tank room, suction tank room, wet riser room and electrical outlet room. Geared traction system has been applied to the elevator system here at this apartment. The control panel is located on the 17<sup>th</sup>-floor. Generator set room is located on the ground floor next to TNB's room which functions to supply the electricity for the common area if there is power failure happened. Examples of the common areas are the lift, corridor light, water pump, wet riser, and streetlight. However for the electrical distribution system, this is the component that commonly used in for domestic building such as 100-

## **1.2 Objective**

The objectives of this report are as follows:

1. To study the maintenance works at high-rise residential building.
2. To identify the problem that occurs during the maintenance works at the selected case study building.

## **1.3 Scope of Study**

The scope of work that we make a practical training including:

- Maintenance works at high-rise residential building.
- Ensure all building services works perfectly.

## 1.4 Method of Study

To obtain and collect information for this report, several method had been used.

The methods used are:

(i) Observations

Observation was done to study the materials and tools that are used for building maintenance on site. By observation, it is easier to see clearly the process of building maintenance for the residential area instead of reading from books or do some research on the internet

(ii) References

To increase the level of knowledge about roadwork construction one should do some research on the internet, books and documents. This method is more productive to understand detail and know more about the building maintenance.

(iii) Interview

An interview have been made with the site supervisor, Mr.Kamarulzaman Bin Abdul Latip. He talked more about the building maintenance. Besides, interview with the skilled worker was also been carried out.

## **CHAPTER 2.0**

### **COMPANY BACKGROUND**

#### **2.1 Introduction of Company**

AMAS FM CONSULTANT SDN. BHD was established on 9<sup>th</sup> of August 2012 and is registered with the Ministry of Finance in the consultancy under Building Surveying section. AMAS FM is a consultant for Building Operation and Space Management Audit, Asset Inventory, Building Hand over and Building Condition Assessment. Our Objective is to share our vast knowledge and experience in Physical Asset Management in Malaysia. With the support of experience team members, we are responsive to present and future policy and economic.

AMAS FM CONSULTANT SDN. BHD is supported by knowledgeable and experienced personnel who are ready to provide services and cooperate with public and private sectors. In line with Malaysia's development to new paradigm, we plan to diversify our specialisation in the Built-Environment Industry.

## 2.2.2 Service Provide by Amas FM

1. Asset Management
  - AssetRegister
  - AssetConditionAssessment
2. Facility Management
  - OperationandMaintenancePlanning
  - O&M Costing
3. Project Management
  - Refurbishment works
4. Space Management
  - Inventory
  - SpaceAudit
5. BuildingSurveying&BuildingAudit
  - BuildingInspection
  - BuildingConditionSurvey&BuildingAudit
  - DefectListing
  - BuildingDilapidationSchedule
  - Hand-over Building
6. FMTraining
  - AuditSpace
  - ManagementSpace
  - Inventory / Asset Listing /AssetRegister
  - Assessment / InspectionofBuildingConditions

### 2.2.3 Company Information

CompanyName : AMAS FMCONSULTANTSDN.BHD.

RegisteredAddress : No.55-AJalanUdangKara31,Off JalanHassan,  
Sungai Udang,41250KlangSelangor.

TelephoneNo. :

HandPhone :

FaxNo. : 03-33815444

EmailAddress : amasfm@gmail.com

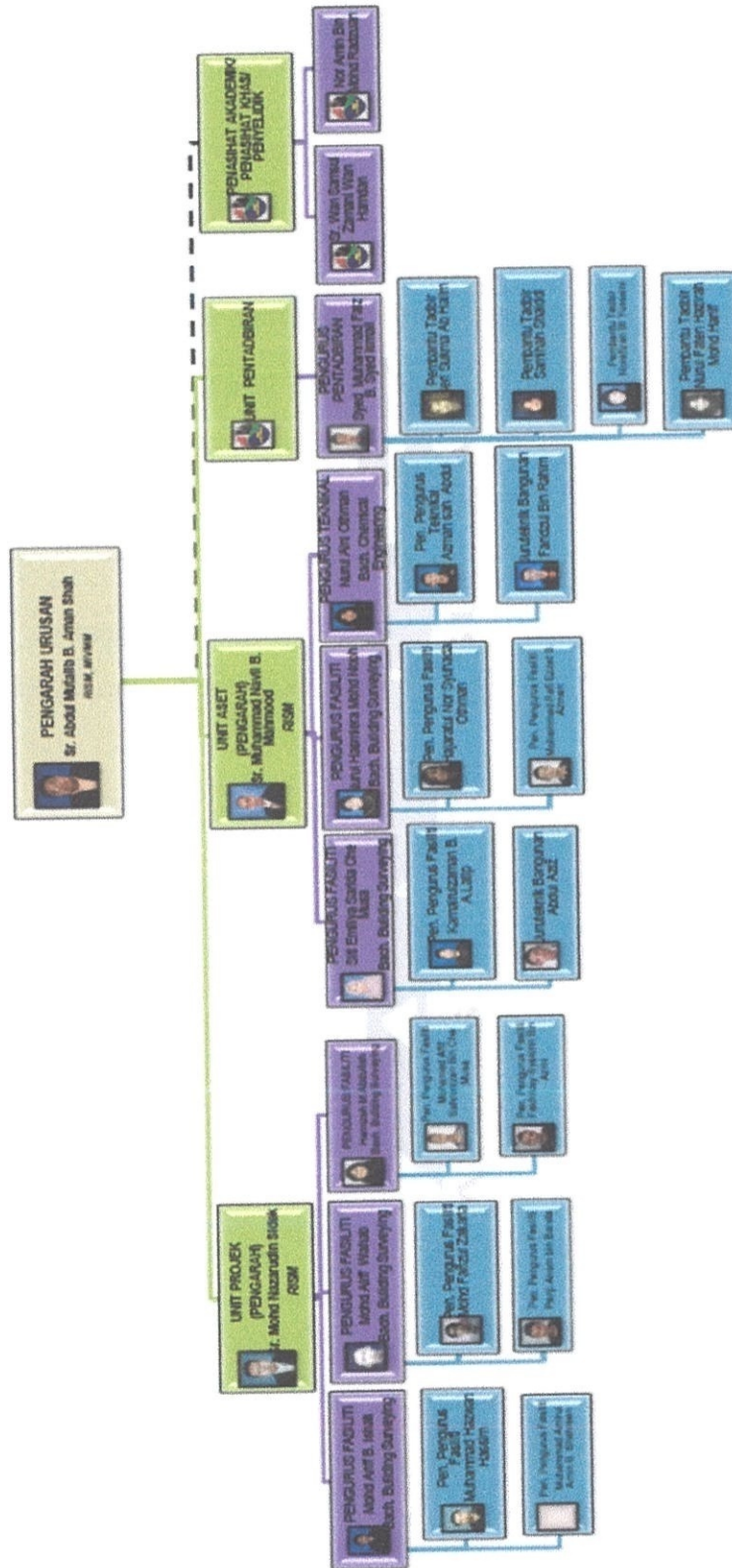
WebSite : www.amasfm.com

CompanyRegistrationNo. : 1013363W

ConsultantFirmRegistrationNo. : J22006724261075241



### 2.3 Organization Chart



Building Audit Consultancy Work For Etiqa Twin Tower	KFM Holdings Sdn. Bhd/ Maybank
Building Audit Consultancy Work For Academy Etiqa.	KFM Holdings Sdn. Bhd/ Maybank
Building Condition Survey For Mahindra Satyam Malaysia Global Solution Centre On Lot PT 12122, Persiaran Apec, Cyberjaya, Selangor Darul Ehsan.	Cyber view Sdn. Bhd
Building Management Consultancy at Akasia Apartment, 220 Unit at Setia Alam Selangor Darul Ehsan	JMB Akasia
Proposed Consultancy Services: Preparation Of Standard Operating Procedures: And Data Verification & Migration For Computerised Facilities Management System	Rekajaya Projek Sdn. Bhd

## **CHAPTER 3.0**

### **CASE STUDY**

#### **1.1 Introduction of Project**

This report is about the maintenance works At Apartment Sri Laguna Biru in Sungai Buluh. Apartment Laguna Biru is located in Kundang, Sungai Buloh, it was a finished building in the middle of 2012 and has 6 building blocks which are block A, B, C, D, E. Each building has 17 floors, pumps, storage tank room, suction tank room (which is located on the upper floor of each building), wet riser room, electrical outlet room, TNB's room and generator set room for each two building. This apartment was handed over to this company on 1<sup>st</sup> of April 2012 for the management and maintenance works.

Building maintenance is work undertaken to keep, restore or improve every part of a building, its service to a currently acceptable standard and to sustain the utility and the value of the facility. Maintenance needs to be done to preserve machinery, building and services in good operating condition by checking them frequently. Not only that, but to also restore it back to its original standards and to improve the facilities depending upon the development that is taking place in the building engineering. In order to identify the problem and to pursue better understanding of building materials and its mechanical, electrical system has to be studied thoroughly. Knowledge has to be gained from these processes so that in the future, fast and effective counter-measurements could be taken to repair any defected equipments.

The maintenance work includes the whole building especially for the common area section which are sewerage, drainage, storage tank, corridor light, timer switch, and manhole. Inspection or checking activity needs to be regularly done to identify if there is a problem and also to ensure all of the components are in a

good condition. Usually, the actions said will be taken after receiving complaints from the residents. For example, if the lift is out of service or the corridor light is still switched on, exceeding its supposed timeline.

## 1.2 Maintenance works for inspection chamber at block A

Problem: Manhole clogged and over flow sewage all over the floor

Action has been taken:

1. Usually, this will happen when garbage and things that are not supposed to be in the sewage get stuck which then leads to overflowing of water from the manhole.



*Photo 3.1: garbage and debris blocks the sewage*

2. Photo 3.2 shows a bendable rod and shovels to shove the garbage out of the sewage. The things that are found are comb, plastic bags, soap bars, leftovers, and toothpaste lid.



*Photo 3.2: bendable rod*

3. The first step that needs to be taken is to use the elastic rod and shove it into the main streamline which is connecting the manhole of the building and the manhole from Indah Water. Water comes gushing out from the manhole because the main streamline is clogged.



*Photo 3.3:pushing process*

4. When the elastic rod has been inserted into the main streamline,insert the second rod and push as hard as you can so the clogged garbage around the streamline will break.There are times when the amount of garbage is too much,that four rods have to be used in order to break the garbage.



*Photo 3.4:pushing process*

5. Using the shovels, separate the garbage and put it inside a plastic bag. This step has to be taken so the same problem will not occur again.



*Photo 3.5:separate wastage process*



*Photo 3.6:separate wastage process*

### 1.3 Maintenance works at generator set room

Problem: cable jointer from battery to the generator cannot functioning well.

Action has been taken:

1. Remove the cable wire from the battery, it is for safety so there is no electric current flow. The generator was functioned to supply the electric power if the was no supplied from TNB. But this machine can only cover a power for the common area but not for the residential house.



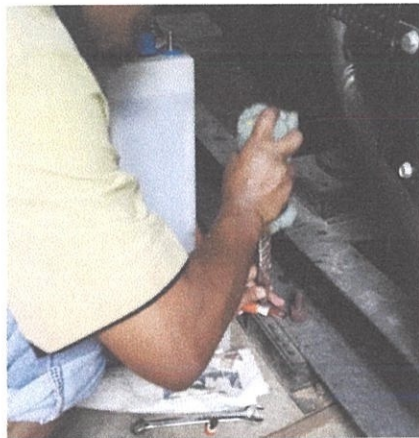
*Photo 3.7: Remove cable from battery*

2. Cut around the beginning of the cable and install the new cable jointer which connected to the copper wire.



*Photo 3.8: cutting cable wire*





*Photo 3.9: installation cable jointer*

3. Tape around the cable jointer and the cable to avoid a leaking of electric current. Photo 3.9 shown the taping process.



*Photo 3.10: taping work*

4. Join the cable on the battery back after the change process of the cable jointer.



*Photo 3.11: tied process*

#### 1.4 Maintenance works at sewage pipe for house E-1-6

Problem: sewage pipe clogged and overflow the wastage water all over the corridor

Action has been taken:

1. Photo 3.4.1 shows a stagnant corridor of block E. This happens because the sewage pipe of the toilet from room E-1-6 is clogged and water has flown out of the corridor. This event becomes more serious when the house is not stayed by anyone.



*Photo 3.12: stagnant corridor*

2. Photo 3.4.2 is a picture of the floor slab of the toilet from house number E-1-6.



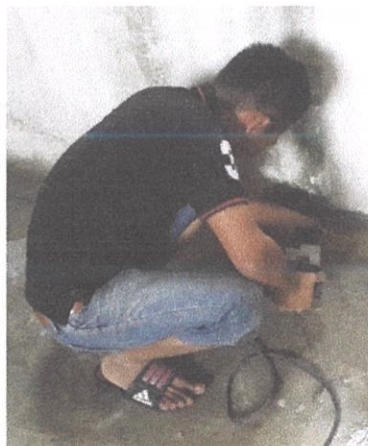
*Photo 3.13: leaking on floor slab*

3. Next step is to open the lid of the sewage pipe.this is the reason why the sewage is clogged.once the lid is opened,the wastes that are stuck inside the lid will be released.



*Photo 3.14:open the cover pipe*

4. In the meantime,drilling works are done at the pipeline so that the stagnant water can flow straight to the drainage.enlargement of rain pipeline by using a drill machine as the photo show



*Photo 3.15:drilling works*



*Photo 3.16: drain hole for corridor*

5. Photo 3.4.7 shows stain resulting from the overflow of house E-1-6. the water that was left stagnant in the corridor and also bad pipeline were to blame for the decay of the ceiling



*Photo 3.17: broken ceiling*

6. Photo 3.4.8 shows wastes that cause the sewage line to clog.



*Photo 3.18: wastes*

### 1.5 Maintenance works for suction tank in block A

Problem: The water sensor stopper fail to function and causes water gushing out.

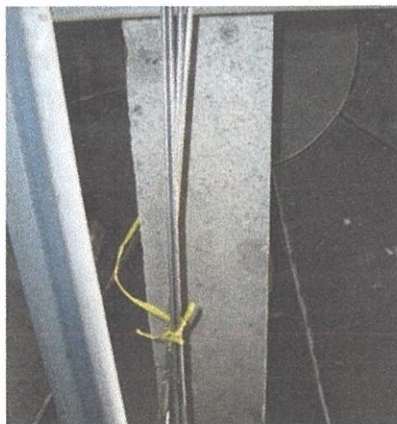
Action has been taken:

1. The pipe lets out a tremendous amount of water from the suction tank and causes an overflow inside the water tank room. This is caused by the stopper sensor rod that fails to work due the rod has become rusty and incidentally the sensor can't sense the rusty rod. Thus can't detect when water has reach its optimum level.



*Photo 3.19: overflow pipe*

2. Photo 3.5.2 shows a new sensor electrode replacing the old and rusty sensor electrode



*Photo 3.20: electrode*

3. The first step that has to be taken is to change the control switch of the motor pump from automatic to manual. In order to do this you will have to go to the water tank room on the ground floor and look for the control box.



*Photo 3.21: checking control panel*

4. After that, the changing of the rods takes place in the suction tank room on the highest floor of the building. By using a screw driver, take the rod out from the base to be replaced with a new one. The rust from the rod prevents the sensor to sense the rod.



*Photo 3.22: removable electrode*



5. Before the new electrode is to be installed, cut the rod with the same height as the old electrode. The height of the stopper rod must also be greater than the overflow valve so that water will not gush out.



*Photo 3.23: cutting electrode*

6. After finishing with the electrode installation, each rod has to be wiped with sand paper to get rid of the rust and stain



*Photo 3.24: remove rust*

## REFERENCE

### WEBSITE

- i. The Constructor (2016). Building Maintenance <http://theconstructor.org/building/building-maintenance-objective/6901/>