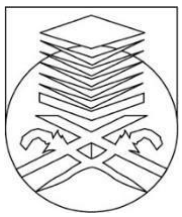

PROGRAMME IN BUILDING SURVEYING

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SERI ISKANDAR CAMPUS

MAINTENANCE MANAGEMENT OF PHILEO DAMANSARA 1

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BACHELOR OF BUILDING SURVEYING (HONS.)

PRACTICAL TRAINING REPORT

FEBRUARY 2021

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FEBRUARY 2021

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

PREPARED BY NAME	:	.....……
SIGNATURE SUPERVISING LECTURER	:	……
NAME	:	.....……
SIGNATURE	:	……
DATE	:	……

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Chapter 1

1.1 INTRODUCTION OF COMPANY BACKGROUND

1.1.1 HENRY BUTCHER MALAYSIA (MONT KIARA) SDN BHD

Figure 1 Logo of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd

Henry Butcher Malaysia (Mont Kiara) Sdn Bhd (HBMK) is a registered property and facility management company in Malaysia. HMBK have been registered under the Board of Valuers, Appraisers, Estate Agents and Property Managers (BOVAEP). HBMK have provide and managed a world-class real estate property since 1987.

The company also provide a real estate consultancy service in nationwide. HBMK have been manage over than 100 properties in Malaysia including of branded residencies, high-end corporate office, commercial building and special facilities with the support of 1,000 manpower of HMBK and service providers.

1.2 VISION AND CONCEPT

1.2.1 VISION

- To aspires to be Malaysia's leading property and facility management that can provide effortless excellence to property management services.
- HBMK envision to each member of the company as a strong key-player in their expertise and able to consult the clients with various aspects of property and facility management.

1.2.2 CONCEPT AND PRACTICE

a) Understanding client's need and objectives
b) Providing high-quality value-added services
c) Providing responsive, transparent and timely response

1.3 SERVICE PROVIDED

Below are the details of services that have provided by Henry Butcher Malaysia (Mont Kiara) Sdn Bhd:

i. Property Management

To assist client in order to achieve the effective property management. Thus, it will start with a conducive management office, number of personnel, relevant policies and standard operating procedures.

ii. Facility Management

To coordinate and ensure the functionality of the properties. HBMK will deliver the world-class facilities management services by fully leveraging on local expert together with the assistance from international partners as to ensure the facilities are in good condition.

iii. Maintenance Management

Providing a Planned Preventive Maintenance (PM) checklist for the property management as to ensure the property is well maintained all times.

iv. Tenancy Management

To bring the peace of mind for the parties involved. This can avoid the administrative stress and allowing client to focus on their own roles.

v. Financial Management

To assist clients about their financial management including the opening of accounts, administering, auditing, preparing annual budgets. This is to help the clients to achieve healthy and sustainable financial position.

vi. Administrative Management

HBMK have practice a systematic approach in the administrative management from the process of handling enquiries to keep the records of the documents which related to maintenance and management of the property.

vii. Insurance Management

To ensure the client's property is equipped with insurance coverage. HBMK also assist clients in insurance premium collection and insurance claims.

viii. Health, Safety and Emergency Management

HBMK help their client to identify the risk, safety issues which affect the property and take the measures to minimize the potential risk. It also to assist client in ensuring the statutory compliance related to health and safety of property.

ix. Handing / Taking Over Management

HMBK are experienced in process of taking and handing over a property. The well-trained personnel from HBMK will help to ensure the assets, document and record of maintenance and management of property are being handed or take over properly from others party.

x. Consultancy

HBMK offer an integrated property consultancy service from project inception to strategy formulation. The consultancy covers single building to estates and campus-wide master plans.

1.4 GOLDEN RULES

The golden rules are applied to all sites that assigned under the Henry Butcher Malaysia (Mont Kiara)

1) All cash / cheque received must be bank in within three (3) working days

2) Transfer money to sinking fund on a monthly basis

3) Attach Statement of Accounts together with the invoice or notice of general meetings

4) Submit Periodic Reports to client and HQ

5) Email management: Check, acknowledge and follow up

6) Always adhere to approval and expenditure procedures

7) Conduct morning briefing at 9am on a daily basis

8) Establish PPM checklist and enforce them

9) Set a reminder for licenses and insurance renewal

10) Do walkabout on a daily basis

1.5 ORGANIZATIONAL CHART OF BOARDS

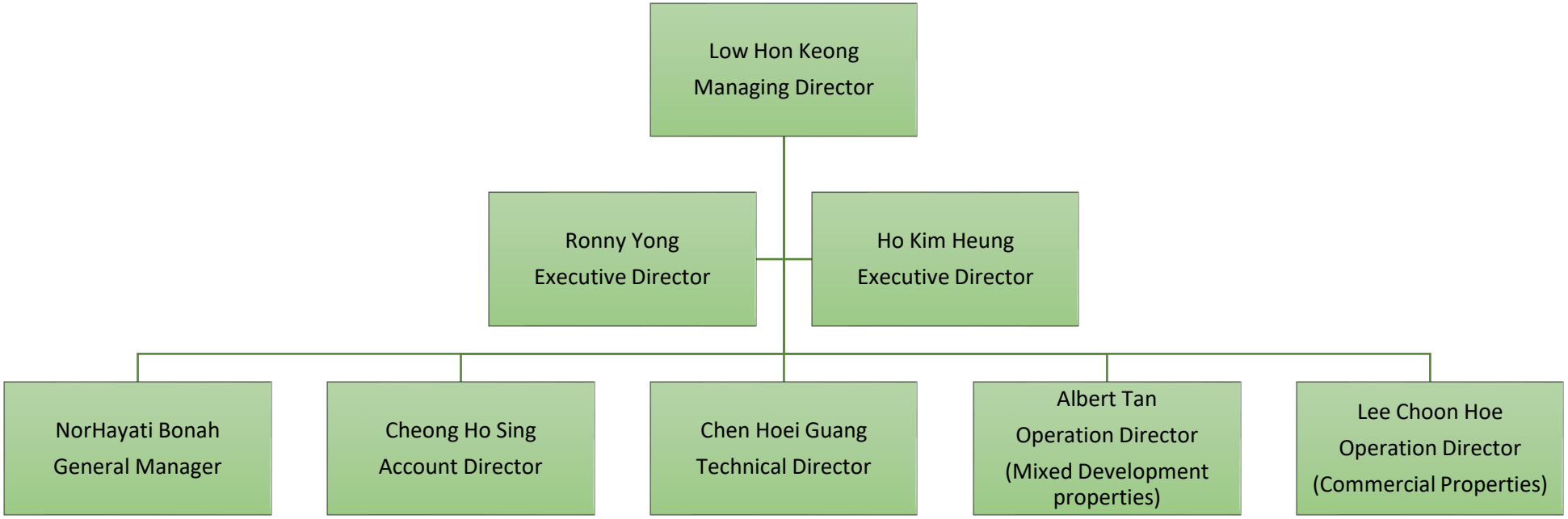

Chart 1 Organizational Chart of Boards

1.6 BUILDING LOCATION

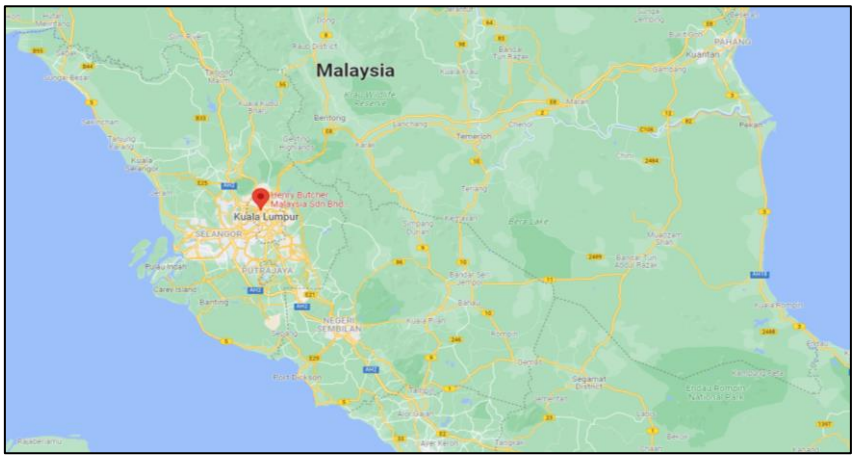

Figure 2 Key Plan of Headquarters of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd

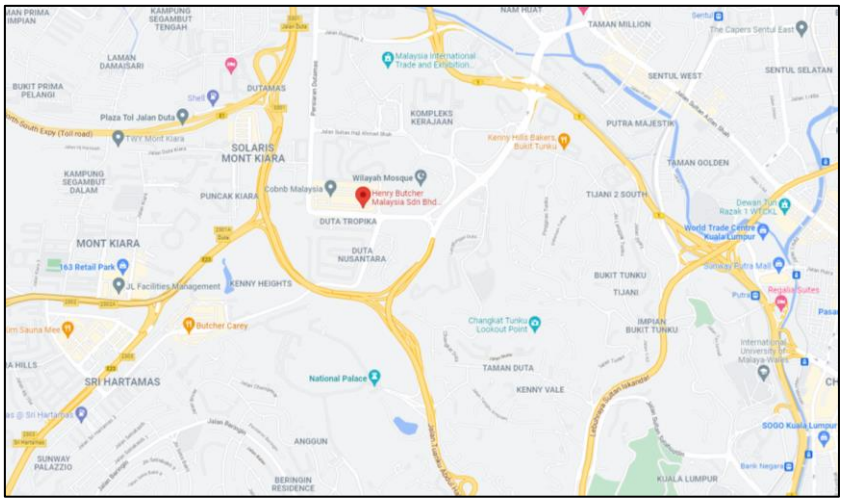

Figure 3 Location Plan of Headquarters of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd

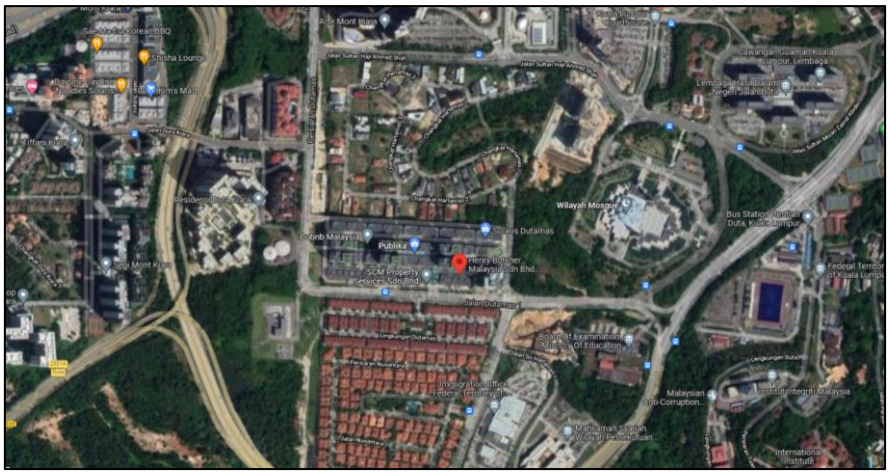

Figure 4 Site Plan of Headquarters of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd

1.7 TRAINING DESCRIPTION

Practical training placement company is Henry Butcher Malaysia (Mont Kiara) Sdn Bhd. HBMK have place me at Phileo Damansara 1 with supervision of Senior Building Manager, Ms Elaine Cheong. I have been placed under the building operation and management team. From that, I have learnt a new knowledge about the property management, and it can be use in my future career.

Below are the lists of my tasks during the practical training at Perbadanan Pengurusan Philoe Damansara 1 (PD1):

Item	Description	Monitor By
Inspection	▪ Inspection before and after renovation for each unit ▪ Monitor and checking security's attendance and performance daily ▪ Inspection of accessory parcel of PD1 and Bangunan Yin ▪ Inspection of the existing drawing of	✓ Ms Elaine Cheong ✓ Mr Jason Voo

	basement PD1 and Bangunan Yin	
Operation	▪ Assist tenants for complaint thru phone call ▪ Prepare expenditure requisition and purchase order ▪ Assist contractor to get pass before doing work ▪ Assist owner/tenant about renovation process and documentation ▪ Helping owner/tenant for moving in/out procedures. ▪ Prepare agenda and slide presentation for MC meeting	✓ Ms Elaine Cheong ✓ Mr Jason Voo
Documentation	▪ Helping account team to sorting out the water and sewerage bills ▪ Organize and check unit filing ▪ Organize contractor record and occupancy update	✓ Ms Elaine Cheong ✓ Mr Jason Voo ✓ Ms Farahin ✓ Ms Hidayah

Chapter 2

2.1 INTRODUCTION

2.1.1 MAINTENANCE MANAGEMENT

Maintenance management is about the activities maintaining the assets of the building and make sure the assets are function effectively and efficiently. Maintenance activities are related with the repairing, replacement and servicing of the system that will disturb the production in future. Thus the maintenance management is associated with the direction and organisation of various resources such as cleaning, electrical and landscaping services as to control the availability and performance of the building. Nowadays there are a lot of building which are need a proper maintenance especially the high-rise building such as hotels, office company, institutional building, apartment and others building. This is because the maintenance can increase the value of the property and increase the performance of the building. So, a maintenance management are required to all the building. A maintenance manager should have in the company to help in managing the maintenance of the building. Maintenance manager should understand the building's processes. The understanding of the type of the building and the processes of the building will help the maintenance manager do a proper planning and schedule of the system in the building.

2.1.2 OBJECTIVES OF MAINTENANCE MANAGEMENT

The objectives of the maintenance management are:

- ✓ To control the future cost for replacement of the failure system
- ✓ To schedule the work that will done properly and efficiently
- ✓ To ensure the company have complied will all regulations
- ✓ To make sure all the maintenance staff know their scopes of work
- ✓ Minimizing the breakdown and failure of the system
- ✓ To extend the life cycle cost of the building
- ✓ Minimizing the loss due production stoppages
- ✓ Efficient use of maintenance equipment's and personnel
- ✓ To maximize the efficiency and economy in production through optimum utilization of available facilities
- ✓ To improve the quality of the system in the building
- ✓ To minimize the total maintenance cost which may consist of cost of repair, cost of preventive maintenance and inventory cost associated with the spare part or material for maintenance activities
- ✓ To improve the availability, reliability and maintainability

2.1.3 FUNCTION OF MAINTENANCE MANAGEMENT

- To develop the maintenance policies, procedure and standard for maintenance system
- To schedule the maintenance work after due consultation with the concerned maintenance department
- To document and maintain record of each maintenance activity
- To maintain and carry out repairs of the building, utilities, material handling equipment and other service facilities
- To prepare the inventory list of spare parts and material that needed for maintenance activity
- To ensure cost effective maintenance
- To forecast the maintenance expenditure and prepare a budget and to ensure that maintenance expenditure is as per planned budget
- To ensure a proper inventory control of spare part and material are required

2.2 MAINTENANCE STRATEGY

Maintenance strategy is adopted in order to extend the life cycle of the building and its fittings services. Maintenance personnel chose different maintenance strategies depending on allocation maintenance resources. A maintenance strategy should be a succinct document that will describe the systems and procedure to be used in planning and maintenance work, specify the types of maintenance to be carried out and why establish the order of priority for the maintenance activities nominate the means of resourcing and implementing maintenance. Other than that maintenance strategy is also a long-term plan that will covering all aspects of maintenance management which sets the direction for maintenance management and contains firm action plans for achieving a better maintenance function in future. For examples of the maintenance strategies are preventive maintenance, corrective maintenance and condition-based maintenance.

The maintenance strategies will provide a fixed and long-term references for congruency and changing decision criteria and a structure for relationship between maintenance environment variables.

2.2.1 PENALTY

Based on the KPI's which provide by the management the failure will comply with the criteria will cause a penalty or deduction charge based on the schedule payment to the out-sources contractor. The penalty provides a means of obtaining a metric that could judge the performance of predictive controllers as well as compare the performance and non-predictive controllers against the generalized predictive control standard due to formulation of control problems. The predictive optimization function includes a cost term on control action and can be readily modified to include constrain.

2.3 MAINTENANCE POLICY

Maintenance policy can be defined as a strategy within which decision on maintenance are taken. Building maintenance policy is a written document and provides a management framework to the maintenance personnel to determine appropriate maintenance strategy and standard. Maintenance policy is one of main aspects in management of building maintenance operation processes. Maintenance policy is a tool for maintenance personnel to plan their appropriate maintenance strategies. However, before a maintenance programme is prepared, maintenance personnel and top maintenance management of the building are required to agree on the maintenance policy because it requires strategic direction, as well as resources. The maintenance policy also will determine the structure of the maintenance organization and the duties of the maintenance staff.

The maintenance policy should typically include the following items:

- An outline of the maintenance strategy
- To set a target standard for asset performance and level of service
- Identification of the optimal maintenance to achieve the goals and managing the risk in future.
- To set the framework for the development of the maintenance strategy

2.4 MAINTENANCE STANDARD

Maintenance standard are established to ensure that asset are maintained to an appropriate condition. The determination of maintenance standard can be divide into two standards; quality standard and services standard.

1. Quality standard
   - A quality standard is a detail of the requirements, specifications, the various guidelines and characteristics to be able to meet its quality by the product in order to meet the purpose of the product, process or the service. ISO international standards are the most widely accepted set of quality standards adopted by majority firms across countries. In case if a company fails to meet its quality standard, it may end up losing the trust of the customer and henceforth its market share.
2. Service standard

   - Service standards are important for customers, potential customers, employees and management of a business. They help to define what a customer can expect and to remind management and employees of the challenge and obligations that they face.

   Service standards are usually defined in terms of:

   - Timeline

   'Delivery in three days' or 'calls answered in 20 seconds' are phrases that give the essence of a service standard that involves a timeline. These statements need to be defined precisely before they can be considered as true service standards.

   The complaint from the customers is the tool that measure whether the service standard is achieved or not.

2.5 MAINTENANCE PLANNING

Maintenance planning should start at the design stage of any building project and should continue throughout the life of the building. Maintenance planning can identify as what, why and how. These items allow the maintenance manager identify the potential issues and provide the information and materials to avoid the breakdown and failure of the system.

Planning consists of three key functions:

i. WHAT
   - Defines what work need to be done, who will done the work, what material, tools and equipment that will used. This will allow the maintenance department to identify if the failure can be done using the basic tools or need a specific tool to fix it.

ii. WHY
   - Defines as a reason why we have to fix the failure that have occurs. This will provide the individual maintenance staff's task.

iii. HOW
   - Defines how the work should be completed on the right time. This will ensure all the maintenance personnel know how to manage their maintenance planning.

2.6 MAINTENANCE SCHEDULE

Maintenance schedule is a process by which job are matched with resources and sequenced to be executed at a certain time. Scheduling deals with the specific time phasing of planned jobs together with the orders to perform the work, monitoring the work, controlling it, and reporting on job progress. A successful of planning needs feedback from maintenance schedule.

Reliable schedule must take into consideration:

i. A job priority ranking reflecting the critically of the job
ii. The availability of all materials needed for the work order in the plant
iii. The production master schedule
iv. Flexibility in the schedule

Maintenance scheduling can be prepared in 3 level

i. Long term maintenance
    - Long term maintenance will therefore seek to identify the major item of works cover up to 6 months to 3 years. The information is obtained from the past records showing when major repairs were last undertaken and from inspection of the current physical.
ii. Medium term maintenance
    - Medium term maintenance is known as an annual programme. The objectives of annual programming are to provide more accurate assessment of the amount of work to be carried out during the weekly and monthly.
iii. Short term maintenance
    - Short term maintenance is the coordination work is done in certain period such as daily. The maintenance work involves the checking and inspection programme of civil, mechanical and electrical work. The maintenance work depends on the condition of that matter.

2.7 MAINTENANCE PROGRAMME

Maintenance works should be carried out on time. Maintenance programme should be planned as far as possible. Any delayed should be kept to a minimum time only. From the scheduling the maintenance work, there will form a maintenance programme. The maintenance programme will easier to read and understand. Maintenance programme will be in a proper table. The maintenance programme will state more detail about an item that have to maintain in daily, weekly and monthly.

The objective of maintenance programme:

a. To optimize the usage of the plant, machinery and tools
b. To optimize the usage of manpower in maintenance
c. To ensure smooth production flow
d. To minimize the maintenance cost in future

Chapter 3

3.1 INTRODUCTION

3.1.1 PHILEO DAMANSARA 1

3.1.1.1 BUILDING BACKGROUND

Figure 5 Phileo Damansara 1

Item	Description
Name of Building	Pusat Perdagangan Phileo Damansara 1
Address	No. 9, Jalan 16/11, Off Jalan Damansara, 46350 Petaling Jaya, Selangor Darul Ehsan
Types of Building	Office and Commercial Building
Year of Built	1997
Number of Block and Storey Height	1) Block A – 10 storeys 2) Block B – 12 storeys 3) Block C – 6 storeys 4) Block D – 12 storeys 5) Block E – 10 storeys 6) Block F – 8 storeys 7) Block G – 8 storeys 8) Bangunan Yin – 5 storeys
Total units	623 office units of sizes from 1,300 sq ft to 4,400 sq ft space
Amenities	1) Sime Darby Convention Centre 2) Hospital Universiti 3) Tropicana Shopping Mall

	4) Phileo Damansara MRT Station 5) Golf course 6) MRT Feeder Bus
Accessibility	1) SPRINT Highway (link with NKVE Highway, Penchala Link, LDP Highway) 2) Jalan Bangsar 3) Mont Kiara 4) Mutiara Damansara 5) Jalan Duta

3.1.1.2 BUILDING LOCATION

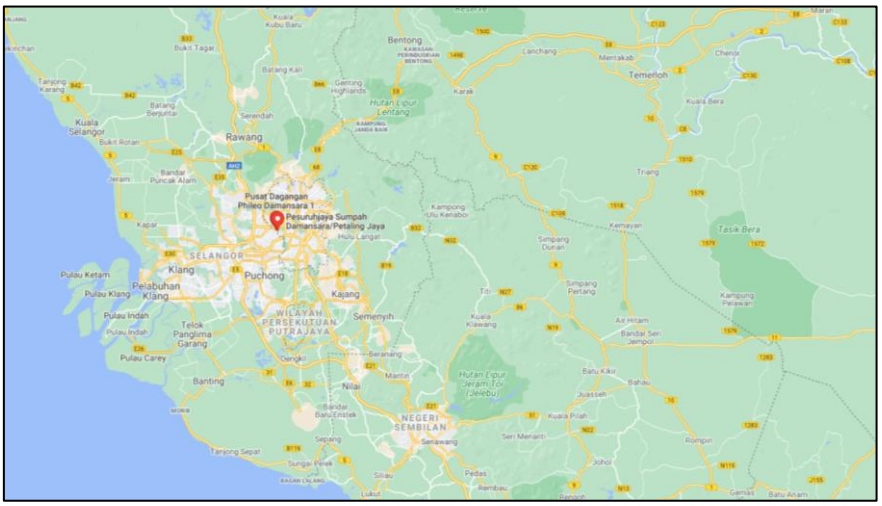

Figure 6 Key Plan of Phileo Damansara 1

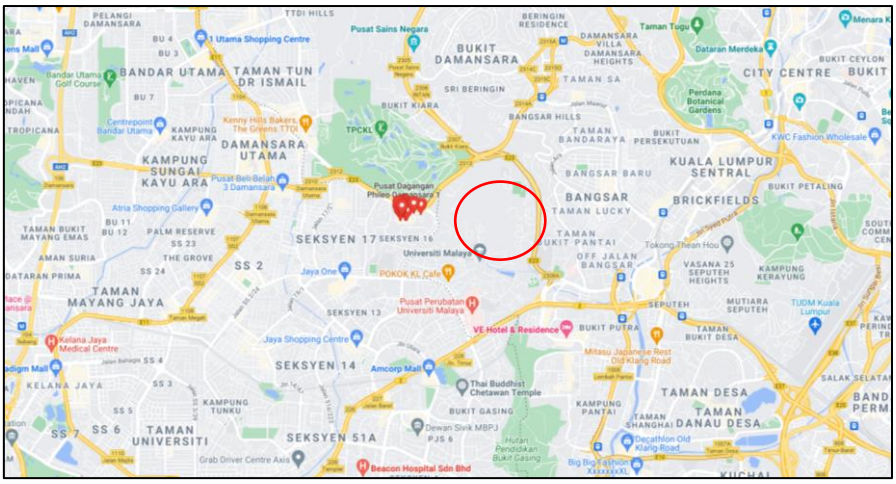

Figure 7 Location Plan Phileo Damansara 1

Figure 8 Site Plan Phileo Damansara 1

3.1.1.3 BUILDING VIEW

Figure 9 Block A of PD1

Figure 10 Block B of PD1

Figure 11 Block C of PD1

Figure 12 Block D of PD1

Figure 13 Block E of PD1

Figure 14 Block G of PD1

Figure 15 Block F of PD1

Figure 16 Block G of PD1

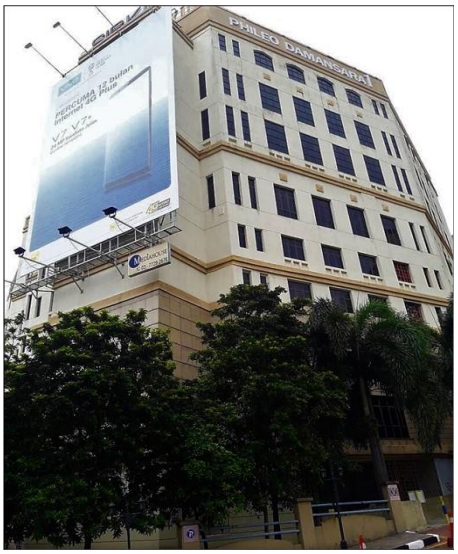

Figure 17 Bangunan Yin of PD1

3.1.2 PERBADANAN PENGURUSAN PD 1

3.1.2.1 BACKGROUND

Figure 18 Management Office of PD1

Phileo Damansara 1 (PD1) is a private building which required a management company to manage the building. Henry butcher Malaysia (Mont Kiara) Sdn Bhd (HBMK) is a responsible management company to manage the PD1 on behalf the MC committee and occupant. HBMK have structure and appoint a management team consists of senior building manager, building executive, admin executive, credit admin, account executive, chargeman and technicians. The management team named as Perbadanan Pengurusan PD1 (PPPD1). PPPD1 and appointed senior building manager from Henry Butcher Malaysia (Mont Kiara) Sdn Bhd are encouraged to enhance the maintenance and management of the development so the value of the PD1 will stable, in performance and the building name keep increasing in future.

The PPPD1 was started on 1st August 2015. HBMK was taking over the PD1 from the previous company known as KJ Property Management Sdn Bhd. The process of taking over is not easy because the previous company need to prepare all the document such as details of owners, tenant of the units, services providers, services agreement, insurance agreement, tenancy agreement, on-going project or completed projects and others.

In Phileo Damansara 1, the Perbadanan Pengurusan PD1 are responsible to manage the common area and the facilities provided in the PD1. The management of the parking are separated and it is not under the PPPD1 responsibility. The parking management is under responsible of PD1 Corporate Parking Sdn Bhd also known as SCP Parking Sdn Bhd.

The management of PD1 is run smoothly with help of in-house team and also out-sources maintenance team which is services provider.

3.1.2.2 ORGANIZATIONAL CHART OF PPPD1

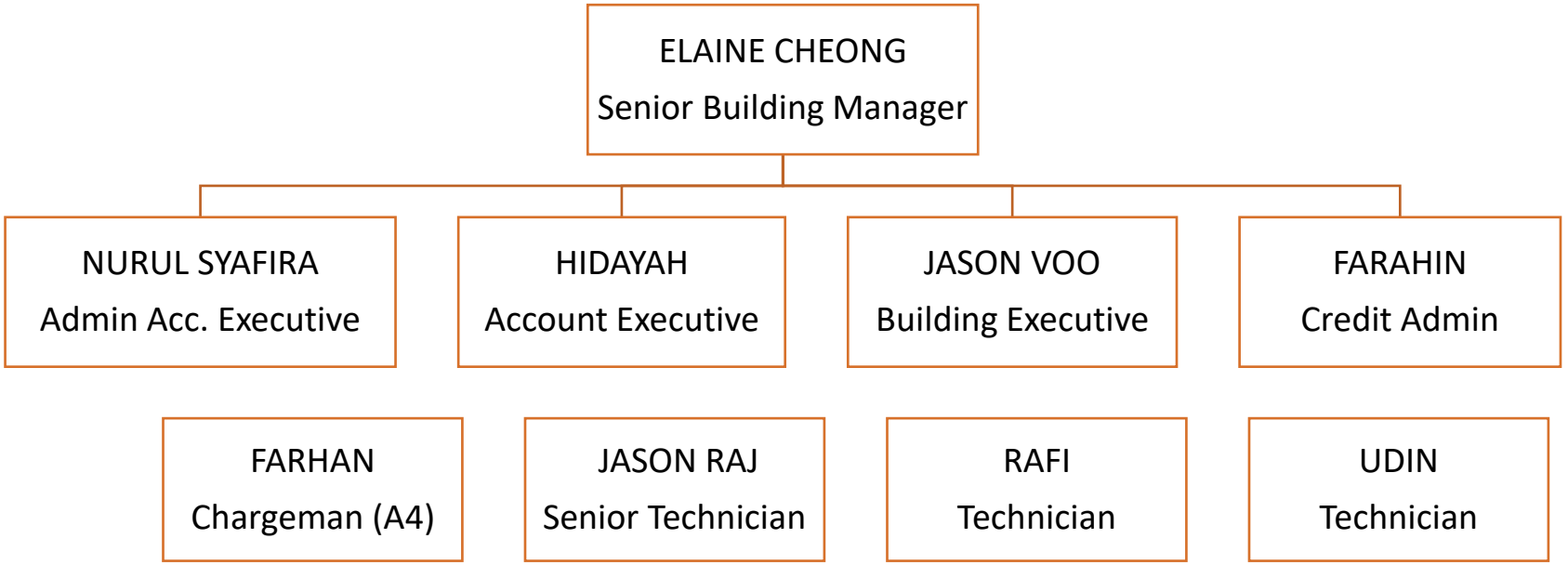

Chart 2 Organizational Chart of Management of PD1

3.1.2.3 MANAGEMENT CORPORATION MEMBERS

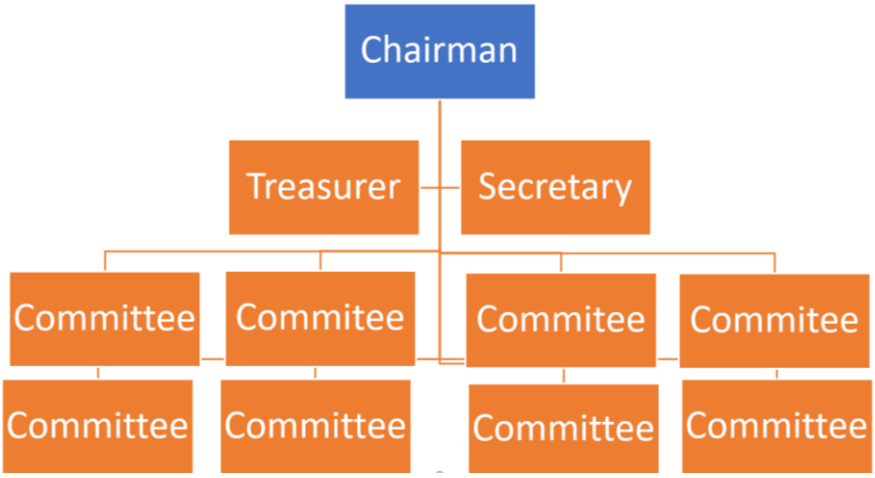

Chart 3 Organizational Chart of Management Corporation (MC) Member

The Management Corporation (MC) committee were elected during the annual grand meeting (AGM) by the owners' unit. The Management Corporation of PD1 was formed on 30th November 2017. The formation of the management corporation including 10 parcel owners which are nominated as MC committee of PD1. The MC committee consist of chairman, treasurer, secretary and 7 MC committee. Each of the members have the experience and knowledge in different areas which makes the whole MC team very versatile and competent. The MC committee are the representative from the others owners' unit in Phileo Damansara 1. They eligible to make any decision for the management of PD1 in the MC meeting. The MC meeting will be held in every 7 weeks.

The responsibility of the MC committee is to ensure the maintenance account and sinking fund account have been audited and identify the agenda. They are also responsible to propose the resolution of the annual general meeting. As the representative from the owners' unit of PD1, they are eligible to manage the building and also to appoint of the services providers such as the management company, cleaning company, security company and others. Other than that, the MC committee also can give instruction and permission for the management body to take any further action regarding the management of building.

3.1.2.4 LIST OF CONSULTANTS INVOLVED

No	Consultant	Address
1	**Developer** AAB Damansara	Kepong
2	**Architect** Arkitek Fajar	17A First Floor, Jalan Bandar 2, Pusat Bandar Melawati, 50400 Kuala Lumpur
3	**M&E Consulting Engineer** Perunding Mektrik Sdn Bhd	No. 8 Jalan SS2/103, 47300 Petaling Jaya, Selangor Darul Ehsan
4	**Main Contractor** Panbuilt Sdn Bhd	Level 13, Menara Phileo, 189 Jalan Tun Razak, 50400 Kuala Lumpur
5	**M&E Contractor** Panmech Sdn Bhd	Level 13, Menara Phileo, 189 Jalan Tun Razak, 50400 Kuala Lumpur

3.1.2.5 SERVICE PROVIDER

No.	Services	Schedule
1)	Security Services **GOLDEN EAGLE SECURITY SERVICES SDN BHD**	Service Hours: 24 hours Working Hours: 1) Day Shift (7am-7pm) 2) Night Shift (7pm-7am)
2)	Cleaning Services **USAHA BERSIH SDN BHD**	Service Hours: 10.5 hours Working Hours: 1) Normal Shift: 7.30am - 6.00pm (Mon-Sat) 2) Sunday / Public Holiday – 8.00 am-3.30pm
3)	Lift Maintenance **1) LNE ELEVATOR SDN BHD (PD1)** **2) KONE ELEVATOR (MALAYSIA) SDN BHD (B.YIN)**	Services Hours: 9hours Service Hours: Monthly
4)	Landscaping **NG YOKE HIN ENTERPRISE**	Working Hours: 9 hours Working Hours: 1) Mon / Saturday: 8.00am - 5.00pm
5)	Electrical Engineering **ST CHUA & ASSOCIATES**	Frequency: Once every 2 week
6)	Visiting Chargeman **IEE (M) SDN BHD**	Frequency: Once every 2 week
7)	Fire Protection System **TYCO FIRE, SECURITY & SERVICES MALAYSIA SDN BHD**	Frequency: Monthly Servicing & On call basis
8)	Pest Control **AURA PEST CONTROL**	Frequency: 1) Fogging (twice a month) 2) General pest control (monthly)
9)	Rubbish Disposal	Frequency: Daily

	CHIN WD SERVICES	
11)	Insurance Agent **MARSH INS BROKERS (M) SDN BHD (AXA AFFIN GENERAL INS BHD)**	
13)	Sewerage Line System **KEJURUTERAAN WAH NGAI**	Frequency: Quaterly service & On-call basis
14)	Cold Water and Sanitary Plumbing System **MAG LOTUS SDN BHD**	Frequency: On call & adhoc basis
15)	Air-Cond **CS AIR COND & STAINLESS-STEEL ENGINEERING**	Frequency: On call & adhoc basis
16)	CCTV **SECUREPLUS SOLUTION ENTERPRISE**	Frequency: Quaterly service & On Call basis

3.2 MAINTENANCE STRATEGY

In Phileo Damansara 1 (PD1), the maintenance strategy makes all the maintenance activity are done in right time. Maintenance strategy of the Perbadanan Pengurusan PD1 is to ensure all the facilities provided in or outside the building are ready and safe to be use by all of the occupant. The maintenance team either in-house or out-source maintenance team will standby and focus during the office hours as to give the fast response to the complaint from the occupant of PD1. This can ensure all of the maintenance strategy that have been planned can be achieved. For example, when the operation team at the Management Office PD1 received call for complaint for any issues such as lift not working, man trapped in lift, toilet clog, leaking or others, the operation team will directly via WhatsApp group or phone call ask the maintenance team take action. The fast action by the maintenance team will increase the safety of the occupant and also increase the satisfaction level of the occupant in the Phileo Damansara 1 (PD1).

There other maintenance strategy of Perbadanan Pengurusan PD1 are:

1. Ensure all the service provider give 100% commitment and cooperate with the in-house maintenance team at PD1
2. Ensure the facilities are in good condition and well maintained
3. Practice to be an excellent management team to all occupant of PD1
4. Ensure all the standard operation procedure (SOP) such as SOP for refund, renovation work, moving in / out by the management can be follow by all the occupant as to ensure the safety of other occupants.

3.2.1 PENALTY / DEDUCTION

Penalty or deduction is applied in Perbadanan Pengurusan Phileo Damansara 1. The penalty will be charge to the services provider or out-sources maintenance team in PPPD1. The penalty will be charge in monthly when the workers of the services provider make a mistake. The penalty of the wrong action or mistake by the services provider will deducting their monthly payment. The amount of deduction will follow the penalty scheme which are provided by PPPD1. Most of the penalty applied in the PPPD1 are workers of services provider is sleeping, drinking alcohol and playing mobile phone during duty.

Below are the examples of penalty scheme in PPPD1:

PENALTY SCHEME:

The following scale of penalty **per Security Staff per incident** shall be levied on the Contractor for any of the offences committed by the Security Staff. The penalty payable shall be deducted from the Contractor's invoice for the current month after written notice of the same to the Contractor **effective on 15th August 2016**.

No.	Type of Offence	Amount (RM)
1	Dressed in shabby manner	10
2	Frequently group together and chit-chatting	20
3	Non-compliance or reluctant compliance of provision in the Standard Operating Procedure (SOP) / specifications / standing orders / instructions from the Owner or its Agent	30
4	Playing mobile phone while on duty (for whatsoever reason it is no kept in the locked box by Shift Leader). Not applicable to Shift Leader.	50
5	Smoking (apart from break time)	30
6	Failure to spot via CCTV and take action on vandalism and illegal dumping of bulky items e.g. furniture, mattress, and other wrongdoings by residents or visitors	30
7	Gambling	50
8	Sleeping while on duty	50
9	Quarrelling or fighting	50
10	Drinking of alcohol	100
11	Reporting late for duty or departing early without giving the Owner prior notice so that a replacement Security Staff can takeover on time	a) Shift Leader : 10 per hour (or part thereof) b) Security Guard: 8 per hour (or part thereof)
12	Late replacement of absent security guards after 2 hours from shift commencement	a) Shift Leader : 15 per hour (or part thereof) b) Security Guard: 10 per hour (or part thereof)
13	No replacement of absent security guard	a) Shift Leader : 180 per shift b) Security Guard : 120 per shift
14	Accepting bribes from any persons including residents, contractors or any other persons	Immediate removal

Figure 19 Example of Penalty Scheme

3.3 MAINTENANCE POLICY

Every management should have a maintenance policy because maintenance policy will be a guideline and assessment to management in order to manage the building. In Perbadanan Pengurusan PD1 (PPPD1), the maintenance policy has been set up according to the HQ of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd. The policy can ensure the efficiency and effectiveness of the maintenance activities in PD1. The maintenance policy are:

1) Ensure all the inventory record is update

   The management are responsible to count and record of all the inventory as it will be the asset for the building and management. All the inventory data need to be stored at least for 7 years.

2) Cashless policy

   In PPPD1, the cashless policy has been applied as the pandemic COVID-19 is happening in Malaysia. The cashless policy is applied to all tenant or owner who willing to pay the water and sewerage bill or maintenance charges and sinking fund. This policy is to protect both parties; management team and tenant or owner from having a contact to each other. This can prevent from infected by the COVID-19.

3) In-house maintenance team should cooperate together with service provider

   The in-house maintenance team will help the service provider if they having problem during the maintenance activity. Every rectification work that will be done need to be discussed together to avoid miscommunication.

3.4 MAINTENANCE PLANNING

Perbadanan Pengurusan Phileo Damansara 1 (PPPD1), there are Plan Preventive Maintenance (PPM). The PPM is a schedule provide to management team in order to manage and maintain the facilities or services provided in Phileo Damansara 1. Based on my observation during the internship period, the Plan Preventive Maintenance (PPM) is not implemented correctly. The management staff will having a weekly staff meeting on Monday to discuss and planning their maintenance activities for the whole week. During the meeting, the operation team will take note with the maintenance activities that will be done for the whole week by the in-house maintenance team as to report it in the weekly and monthly report. The in-house maintenance team will always update their maintenance activities in WhatsApp group as to keep in track and ensure it done within the time frame given during the meeting. The system is less effective but the system has been implemented in the past first month of taking over management from the previous property management. Until now, the Perbadanan Pengurusan Phileo Damansara 1, can control and maintain the function of the facilities provided without any issues. Even though the system is not efficient, it still can ensure the safety of the occupant.

3.5 MAINTENANCE SCHEDULE

The headquarter of Henry Butcher (Mont Kiara) Sdn Bhd have been provided the maintenance schedule for each site. Maintenance schedule is one of process to identiThe maintenance schedule is use as checklist on the maintenance work that need to be done in daily, weekly or monthly. The maintenance schedule is to acknowledge and ensure all of maintenance team know their job scope. Below is the example of PD1 maintenance schedule for month September.

Maintenance schedule is a process by which job are matched with resources and sequenced to be executed at a certain time. Scheduling deals with the specific time phasing of planned jobs together with the orders to perform the work, monitoring the work, controlling it, and reporting on job progress. A successful of planning needs feedback from maintenance schedule

MONTH SEPTEMBER 2021

NO	DESCRIPTION	FREQ	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	M & E - DAILY INSPECTION CHECK LIST	Daily													√	√	√		√							√					√		
2	L.V ROOM CHECK LIST	Weekly						√											√								√						
3	GEN SET CHECK LIST	Weekly						√																			√						
4	LIGHTING (COMMON AREA)	Weekly																															
5	FIRE FIGHTING SYSTEM	Weekly																															
6	PUMP ROOM	Weekly																															
7	VENTILATION FAN	Weekly																															
8	GREASE TRAP	Weekly															√							√									
9	SUMP PUMP	Weekly															√							√									
10	WATER READING	Monthly																											√				
11	BILLING AIR COND	Monthly																									√						
12	ELECTRIC READING	Monthly																													√		
13	CCTV	Weekly																															

DATE OF CHECKING: √ **Prepared by :**

SUNDAY — Cuti umum
PUBLIC HOLIDAY — HARI MALAYSIA

Figure 20 Maintenance Schedule of Phileo Damansara 1

3.7 MAINTENANCE PROGRAMME

The template of maintenance programme of Perbadanan Pengurusan Philoe Damansara 1 is prepared by the Headquarters (HQ) of Henry Butcher (Mont Kiara) Sdn Bhd. The maintenance programme is applied to all sites of Henry Butcher. The appointed sites under Henry Butcher are allowed to change or amend the maintenance programme according to their suitability of the condition of sites. The maintenance programme provided by the HQ for in house maintenance team is only for mechanical and electrical maintenance programme. For the maintenance programme of other services are provided by services provider or out-sources maintenance team. But all the maintenance programme will be checked and verified by the management before the contract of services provider are awarded in PD1. The function of the maintenance programme is to ensure all the maintenance team and service providers are doing their works based on schedule. The maintenance activity done by service providers based on the maintenance programme will be check in monthly as to ensure all works are complete as in schedule.

3.5.1 MAINTENANCE PROGRAMME FOR MECHANICAL

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
1.0	**AIR – CONDITIONING AND MECHANICAL VENTILATION SYSTEM**							
1.1	**Air Cooled Split Unit**							
1.1.1	**Evaporator (Cooling Unit)**							
	a. Inspect unit for any abnormalities. Trace the faults and rectify as necessary.				✓			
	b. Inspect and clean all air filters.				✓			
	c. Inspect leakage or clogging at drain pan and drain line. Clean, flush, repair / replace as necessary				✓			
	d. Chemical cleaning for all coils.						✓	
	e. Inspect refrigerant leaks at joints, fittings and piping. Repair and top up refrigerant as necessary.				✓			
	f. Inspect remote control. Replace as necessary.						✓	
	g. Inspect and cleaning blower and motor blower. Replace as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
1.1.2	**Condenser**							
	a. Inspect the suction and discharge pressures of all refrigerant compressors. If abnormal, trace the faults and rectify as necessary.				✓			
	b. Inspect refrigerant leaks at joints, fittings, piping and compressors. Repair, refill or replace as necessary.				✓			
	c. Inspect all fans and motors as necessary. Repair / replace as necessary.				✓			
	d. Inspect condensing coil. Repair or replace as necessary. Clean coil and comb the fins as necessary.				✓			
	e. Inspect filter dryer. Replace as necessary.				✓			
	f. Inspect compressor units. Replace as necessary.				✓			
	g. Inspect rubber padding. Replace as necessary.				✓			
	h. Cleaning for all coils.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	i. Inspect bracket/ hanger. Repair or replace as necessary.						✓	
1.1.3	**Electrical Switchboard / Control Panel**							
	a. Inspect the condition of the panel and its housing. Repair or replace as necessary.					✓		
	b. Inspect and test the control wiring and circuitry. Retighten, repair or replace as necessary.					✓		
	c. Inspect the operation of selector switches. Repair or replace as necessary.					✓		
	d. Inspect the operation of auto-manual selector switches. Repair or replace as necessary.					✓		
	e. Inspect the operation of stop-start buttons. Repair or replace as necessary.					✓		
	f. Inspect or replace indicating bulbs and covers.					✓		
	g.							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	Inspect the routine operation of all electrical starters, electrical control gears and ancillary electrical apparatus. Repair or replace as necessary.					✓		
	h. Inspect all electrical contactors. Clean and retighten all loose connections.					✓		
	i. Clean or replace electrical contactors as necessary.					✓		
	j. Inspect electric fuses. Replace as necessary.					✓		
	k. Inspect the condition of the conduits, supports and wires. Replace as necessary.					✓		
1.2	**Other Components or Equipments of The Air-Conditioning System**	As per manufacturer's schedule						

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
2.0	**FIRE FIGHTING SYSTEM**							
2.1	**General**							
	Manage and supervise the Fire Detection and Alarm, Fire Monitoring and Fire Fighting System operation which shall include:-							
	a. Control and monitoring of all fire systems.				✓			
	b. Inspect, repair / replace and test the operation of the complete fire fighting system.				✓			
	c. Test run fire fighting system and simulate fire alarm to ensure all systems are in good working order. Ensure the BOMBA link is operating.				✓			
	d. Conduct fire drill for each block / complex.					✓		
2.2	**Hose Reel System**							
2.2.1	**Pump Room**							
	a. Inspect pump room cleanliness.				✓			
	b. Inspect for correct labeling.						✓	
	c. Inspect emergency light.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	d. Inspect condition of door				✓			
	e. Inspect light intensity.				✓			
	f. Inspect floor trap / drain to ensure good water flow.				✓			
	g. Inspect pump circuit diagram (Laminated & framed) are up to date.				✓			
	h. Inspect pump layout diagram (Laminated & framed) are up to date.				✓			
2.2.2	i. Inspect portable fire extinguisher (CO2) **Tank (Storage)**				✓			
	a. Inspect for integrity of structure.				✓			
	b. Inspect for leaks. Repair / replace as necessary.				✓			
	c. Inspect for rust. Repair / replace as necessary.				✓			
	d. Inspect operation of ball valve. Repair / replace as necessary.				✓			
	e. Inspect water tank level indicator. Repair / replace as necessary.				✓			
	f. Inspect electrode and clean. Repair / replace as necessary (if equipped).				✓			
	g. Inspect for sediment. Clean and flush. Do water sampling.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	h. Inspect internal and external cat ladder. Repair / replace as necessary.						✓	
2.2.3	**Pumps**							
	i. General							
	a. Inspect condition of pumps (cleanliness / appearance)				✓			
	b. Test run each pump on automatic and manual mode.				✓			
	c. Inspect the correct cut-in/ cut-out auto mode operation of the pressure switch. Check pressures.				✓			
	d. Inspect all pump bearings for excessive noise, vibration & wear. Lubricate with oil or grease. Replace as necessary.				✓			
	e. Inspect all motor bearings, lubricate with grease. Replace as necessary.				✓			
	f. Inspect carbon brushes and slip rings of all motors. Clean, repair / replace as necessary				✓			
	g. Inspect safety devices fitted to all motors. Clean, adjust, lubricate, repair / replace as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	h. Inspect all seals for leakages. Repair or replace as necessary.				✓			
	i. Adjust, re-pack and replace pump glands as necessary.				✓			
	j. Inspect each pump / motor alignment, mountings and correct rotation. Adjust or replace as necessary.				✓			
	k. Inspect all rubber couplings between pumps and drive motor. Replace as necessary.						✓	
	l. Inspect and tighten all bolts and nuts. Replace as necessary.				✓			
	n. Inspect and test pressure switches and gauges. Repair / replace as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	ii. Control Panel							
	a. Inspect the condition of the panel and its housing. Repair / replace as necessary.					✓		
	b. Inspect and test the control wiring and circuitry. Retighten, repair / replace as necessary.					✓		
	c. Inspect electric pump starter operation, ensure that the starting sequence is correct. Repair / replace as necessary.					✓		
	d. Inspect the operation of selector switches. Repair / replace as necessary.					✓		
	e. Inspect the operation of auto-manual selector switches. Repair / replace as necessary.					✓		
	f. Inspect the operation of stop-start buttons. Repair / replace as necessary.					✓		
	g. Inspect indicating light for trip and run. Replace as necessary.					✓		
	h. Inspect indicating light for pump on auto and pump manual. Replace as necessary.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	i. Inspect ammeter and voltmeter. Replace as necessary.					✓		
	j. Inspect and retighten all loose connection of all electrical contactors.					✓		
	k. Clean and replace electrical contactors as necessary.					✓		
	l. Replace electric fuses as necessary.					✓		
	m. Inspect the condition of the conduits, supports and wires. Replace as necessary.					✓		
	n. Inspect / replace indicating bulbs and covers.					✓		
2.2.4	**Piping and fittings**							
	a. Inspect the condition of every pipe. Repair / replace as necessary.						✓	
	b. Inspect the condition of the pipe supports, brackets, pipe sleeves and piping joints. Repair or replace as necessary.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	c. Inspect the condition of every valve and fitting. Repair / replace as necessary.						✓	
	d. Inspect and clean strainers. Repair or replace as necessary.						✓	
	e. Inspect for correct labeling. Clean, repair / replace as necessary**.**						✓	
	f. Brush pipes to clean of accumulated dust.						✓	
2.2.5	**Hose Reel Drums. Cradles, hoses, Nozzles, etc**							
	a. Inspect that the landing valve, canvas hose and hose reel are obstruction free.				✓			
	b. Inspect any missing, damaged or deteriorated parts on the landing valve, canvas hose, diffuser nozzle, cradle, hose reel drum & hose reel. Repair or replace as necessary.				✓			
2.3	**Fire Detection and Alarm System**							
	a. Inspect fire detection and alarm system. Trace the faults and rectify as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	b. Inspect and test all main power supply and earthing. Adjust, retighten, repair or replace as necessary.				✓			
	c. Inspect and test all battery charger units. Repair / replace as necessary.				✓			
	d. Inspect all battery.				✓			
	e. Inspect and test illumination lamps and LEDs. Repair or replace as necessary.				✓			
2.4	**Fire Suppression Systems**							
2.4.1	**Cylinders, Hoses, etc.**							
	a. Inspect the pressure gauge reading of each cylinder. Refill or replace as necessary.				✓			
	b. Inspect any missing, damaged or deteriorated parts on the cylinders, hoses, etc. Repair or replace as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	c. Inspect the condition of the discharge valve and the tamper seal. Repair or replace as necessary.				✓			
2.4.2	**Pilot Cylinder**							
	a. Inspect and test gas discharge abort switch. Repair, refill / replace as necessary.				✓			
2.4.3	**Panel**							
	a. Inspect and test control panel. Repair or replace as necessary.				✓			
	b. Visually inspect condition of components, resistors wires, zone cards, etc. Repair or replace as necessary.				✓			
	c. Inspect and test AC & DC supply, conduct current voltage continuity and earthing test.				✓			
	d. Inspect and test of change over switch. Repair or replace as necessary**.**				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	e. Inspect and test indicator bulbs. Repair or replace as necessary**.**				✓			
	f. Inspect condition of battery chargers. Repair or replace as necessary**.**				✓			
	g. Inspect the condition of the battery and its terminal. Repair or replace as necessary**.**				✓			
2.4.4	**Devices**							
	a. Inspect and test the control wiring and circuitry. Retighten, repair or replace as necessary.				✓			
	b. Ensure that the detectors are free from obstructions, dust, dirt and cobwebs. Clean as necessary.				✓			
	c. Inspect the condition of the manual key switch/ pull handle. Repair or replace as necessary.				✓			
	d. Conduct simulation test (minus gas discharge).					✓		
	e. Inspect to ensure that the time delay for the CO^2 discharge is within 25 – 30					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	seconds, adjust. Repair or replace as necessary.							
	f. Inspect and test the correct operation of interface trip and fire curtain. Repair or replace as necessary.					✓		
	g. Inspect and test the correct operation of the bell and warning light. Repair or replace as necessary.					✓		
	h. Inspect the condition of the manual key switch / pull handle. Replace glass as necessary.				✓			
2.5	**Portable Fire Extinguishers**							
	a. Obtain Bomba certification upon expiry date.						✓	
	b. Inspect any missing, damaged or deteriorated parts on the cylinder, pressure gauge, hose connector, discharge valve, handle, cylinder safety pin, seal and cylinder holder. Repair or replace as necessary**.**				✓			
	c.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	Inspect fire extinguisher cabinet. Repair or replace as necessary**.**							
	d. Inspect the condition of the content. Refill / Replace as necessary.				✓			
3.0	**COLD WATER SUPPLY AND BOOSTER PUMP**							
3.1	**Pump Room**							
	a. Inspect pump room cleanliness.				✓			
	b. Inspect for correct labeling.						✓	
	c. Inspect emergency light.				✓			
	d. Inspect condition of door.				✓			
	e. Inspect light intensity.				✓			
	f. Inspect floor trap / drain to ensure good water flow.				✓			
	g. Inspect pump circuit diagram (Laminated & framed) are up to date.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	h. Inspect pump layout diagram (Laminated & framed) are up to date.				✓			
	i. Inspect portable fire extinguisher (CO2).				✓			
3.2	**Tanks (Storage)**							
	a. Inspect for integrity of structure.						✓	
	b. Inspect for leaks. Repair / replace as necessary**.**						✓	
	c. Inspect for rust. Repair / replace as necessary**.**						✓	
	d. Inspect operation of ball valve. Repair / replace as necessary**.**						✓	
	e. Inspect water tank level indicator. Repair / replace as necessary**.**						✓	
	f. Inspect electrode and clean. Repair / replace as necessary (if equipped).						✓	
	g. Inspect for sediment. Clean and flush. Do water sampling.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	h. Inspect internal and external cat ladder. Repair / replace as necessary**.**						✓	
3.3	**Pumps**							
	i. General							
	a. Inspect condition of pumps (cleanliness / appearance).				✓			
	b. Test run each pump on automatic and manual mode.				✓			
	c. Inspect the correct cut-in/ cut-out auto mode operation of the pressure switch. Check pressures.				✓			
	d. Inspect all pump bearings for excessive noise, vibration & wear. Lubricate with oil or grease. Replace as necessary.				✓			
	e. Inspect all motor bearings, lubricate with grease. Replace as necessary.				✓			
	f. Inspect carbon brushes and slip rings of all motors. Clean, repair / replace as necessary.				✓			

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	g. Inspect safety devices fitted to all motors. Clean, adjust, lubricate, repair / replace as necessary.				✓			
	h. Inspect all seals for leakage. Repair / replace as necessary.				✓			
	i. Adjust and re-pack and replace pump glands as necessary.				✓			
	j. Inspect each pump / motor alignment, mountings and correct rotation. Adjust or replace as necessary.				✓			
	k. Inspect and tighten all bolts and nuts. Replace as necessary.				✓			
	l. Inspect and test pressure switches and gauges. Repair / replace as necessary.				✓			
	ii. Control Panel							
	a. Inspect the condition of the panel and its housing. Repair / replace as necessary.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	b. Inspect and test the control wiring and circuitry. Retighten, repair / replace as necessary.					✓		
	c. Inspect electric pump starter operation, ensure that the starting sequence is correct. Repair / replace as necessary.					✓		
	d. Inspect the operation of selector switches. Repair / replace as necessary.					✓		
	e. Inspect the operation of auto-manual selector switches. Repair / replace as necessary.					✓		
	f. Inspect the operation of stop-start buttons. Repair / replace as necessary.					✓		
	g. Inspect indicating light for trip and run. Replace as necessary.					✓		
	h. Inspect indicating light for pump on auto and pump manual. Replace as necessary.					✓		
	i. Inspect ammeter and voltmeter. Replace as necessary.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	j. Inspect and retighten all loose connection of all electrical contractors.					✓		
	k. Clean and replace electrical contactors as necessary.					✓		
	l. Replace electric fuses as necessary.					✓		
	m. Inspect the condition of the conduits, wires and supports.					✓		
	n. Inspect / replace indicating bulbs and covers.					✓		
3.4	**Piping and Fittings**							
	a. Inspect the condition of every pipe. Repair / replace as necessary.						✓	
	b. Inspect the condition of the pipe supports, brackets, pipe sleeves and piping joints. Repair / replace as necessary.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6 M	Y	2Y
	c. Inspect the condition of every valves and fittings. Repair / replace as necessary.						✓	
	d. Inspect and clean strainers. Repair / replace as necessary.					✓		
	e. Inspect for correct labeling. Clean, repair / replace as necessary**.**						✓	
	f. Inspect plumbing, pipe-works & fittings and pipe supports. Repair / replace as necessary.						✓	
	g. Brush pipes to clean of accumulated dust.						✓	
3.5	**Pressure Vessel**							
	a. Inspect and test pressure vessel / hydro-pneumatic vessel for leaks. Replace diaphragm as necessary.				✓			
	b. Inspect and test system pressure. Adjust as necessary.				✓			

3.5.2 MAINTENANCE PROGRAMME FOR ELECTRICAL

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
1.0	**MAIN SWITCHBOARD / SUB-SWITCHBOARD AND LOW VOLTAGE COMPONENTS**							
1.1	**Switch Room Including Riser Room**							
	a. Cleaning of switch room & riser rooms.			✓				
	b. Cleaning of cable trench / condition of cable trench (ensure clean, water free and slab cover – ok).			✓				
	c. Cleaning and repairing doors, locks and repainting (as required).							✓
	d. Ensure that "No Smoking", “No Admittance" & "Danger Signs",”Treatment Shock Card" & Schematic Drawing are in good condition and are visible / readable and replace if damaged.			✓				
	e. Ensure fire-extinguisher and C02/halon system are in good working condition, expiry date not due and take the necessary action.			✓				
	f. Ensure no moisture underneath rubber mate in front of the main switch board-replace if damaged.			✓				

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	g. Ensure all electrical spares are sufficient and stored in order and maintain in good condition.							✓
	h. Ensure anti vermin wire mesh is in good condition - repair if damaged.			✓				
	i. Inspect the roof / floor above to ensure no leakage / damaged - repair if leakage / damaged.			✓				
	j. Ensure no water flowing into Switch Room / Riser room – repair / making good if necessary.			✓				
	k. Ensure wiring and electrical fittings, power points, light fittings and exhaust fans working properly.			✓				
	l. Ensure duct seals is in good condition – repair if damage.			✓				
1.2	**Main Switch Board / Sub-Switch Boards**							
	a. Ensure all indicator light, selector switches, voltmeter, ammeter, power factor meter working properly – replace if faulty.			✓				

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	b. Verify and retighten all screws, contactors, etc.			✓				
	c. Inspect cables for burn marks, insulation leakage and other abnormal conditions.			✓				
	d. Record readings for maximum current, voltage, power factor, etc into the log book and take necessary action.			✓				
	e. Ensure cable insulation, cable box cable terminations and other related connections in good condition. Repair / replace as required.			✓				
	f. Ensure earthing system and all terminations, connections working properly- repair / replace if faulty.			✓				
	g. Testing, calibration & resetting, all earth fault & overcurrent relays inclusive of current transformers, voltage transformers, etc.							✓
	h. Check copper busbars and ensure that is in good condition -replace / repair if damage.			✓				
	i. Carry out load balancing.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	Balance to ± 5% of load.							
	j. Ensure capacitor bank is in good condition and working properly - replace if faulty.			✓				
	k. Ensure contactor capacitors working properly- replace if faulty.			✓				
	l. Ensure P.F. meter and ensure P.F reading working perfectly and is better than 0.85 lagging- replace if faulty.			✓				
	m. Verify and retighten cable connector.				✓			
1.3	**Air Circuit Breakers (ACB)**							
	a. Clean arc chute and arc contacts and replace if faulty.						✓	
	b. Clean all insulating parts.						✓	
	c. Adjust & calibrate circuit breaker- replace if faulty.						✓	
	d. Grease all moving contacts and related components condition.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	e. Test tripping mechanism to ensure that it is in good working.						✓	
	f. Inspect and retighten all wiring and connections.						✓	
1.4	**Fuse Switches / Switch Fuses**							
	a. Inspect cover for any damage – replace or repair if damage.						✓	
	b. Ensure switch handle is in good condition, replace if damage.						✓	
	c. Continuity test on fuses – replace with correct rating if damage / faulty.						✓	
	d. Retighten fuse carriers.						✓	
	e. Clean contacts with clean dry cloth to ensure good contact.						✓	
	f. Retighten all connections / termination to prevent from any sparking when loaded.						✓	
1.5								

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	Residual Current Device (RCD) (Including RCCB)							
	a. Retighten all connections, termination, etc. Ensure all electrical connection are working perfectly.						✓	
	b. Ensure switch handle is in good condition.						✓	
	c. Tripping test ON RCD.			✓				
	d. Test for earth continuity.						✓	
	e. Retighten all earth electrode terminations.						✓	
	f. Test RCD tripping time and sensitivity.			✓				
1.6	**Moulded Case Circuit Breaker (MCCB)**							
	a. Check switch handle and ensure that it operates “ON” and “OFF”.						✓	
	b. Retighten all connections, termination, etc.						✓	
	c. Ensure ELR functions / tripping properly.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
1.7	**Distribution Board (DB)**							
	a. Check condition and clean / vacuum internal part of the DB.						✓	
	b. Ensure that DB no. / name plate, “Danger” and updated schematic diagram are available and readable / visible.						✓	
	c. Inspect and ensure spares ways are available in the DB.						✓	
	d. Retighten fuse handle- replace if necessary.						✓	
	e. Test on continuity of fuses- replace if faulty.						✓	
	f. Tripping test for MCB-ensure that is working perfectly - replace if faulty.						✓	
	g. Retighten all connections, terminations, etc. ensure all electrical connection working perfectly.						✓	
	h. Clean internal part of the distribution board.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
1.8	**Surge Suppressors**							
	a. Ensure all surge suppressors function properly.			✓				
2.0	**LOW VOLTAGE DISTRIBUTION SYSTEM**							
2.1	**XLPE or PVC Insulated Armoured Underground Cables**							
	a. Ensure cable insulation in good condition and working properly.						✓	
	b. Test cable continuity in good condition.						✓	
	c. Phasing out test.						✓	
	d. Retighten all connection, terminations, etc.						✓	
	e. Inspect all cable route markers – replace if found missing / damaged.						✓	
	f. Inspect labeling.						✓	
	g. Inspect cable end terminations and cable end boxes.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
2.2	**Sub Main Risers In Trunking / Cable Tray.**							
	a. Inspect and ensure that trunking is clean and in dry condition.						✓	
	b. Inspect and ensure that no condensation present in the trunking.						✓	
	c. Test for cables insulation and continuity.						✓	
	d. Ensure busbars support in good condition– replace as required.						✓	
	e. Ensure fire barriers working properly – replace if damaged / faulty.						✓	
	f. Retighten all electrical connections, terminations, etc - ensure all electrical connection working properly.						✓	
	g. Ensure that trunking is mounted properly and safely.						✓	
	h. Ensure trunking covers intact - replace / repair if damage.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
2.3	**Fire Rated Cable**							
	a. Test for insulation and continuity.						✓	
2.4	**XLPE / PVC Insulated Type Cable On Cable Tray.**							
	a. Inspect and ensure that cable tray is clean in dry condition.						✓	
	b. Inspect and ensure that no condensation present within the cable tray.						✓	
	c. Ensure XLPE / PVC insulated cable in good condition including for cable insulation between cables and continuity.						✓	
	d. Ensure cable tray earth copper tape is in good condition - replace if damage.						✓	
	e. Ensure cable supports in good condition – replace if damaged.						✓	
	f. Check fire barriers – replace if damaged. Ensure fire barriers in good condition / working properly- replace if damaged.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	g. Retighten all connections, terminations, etc. Ensure all electrical connectors working properly.						✓	
	h. Ensure that cable tray is mounted properly and safely.						✓	
3.0	**LUMINARIES, SWITCHES AND SOCKET OUTLETS, FANS, P.A. SYSTEM, MOTORS AND WATER PUMPS AND OUTDOOR LIGHTING**							
3.1	**Luminaries**							
	a. Inspect components of light fittings i.e cable, lamp holder, lamps, control gear, etc.						✓	
	b. Ensure that "KELUAR" sign is in good working condition- repair / replace if faulty.				✓			
	c. Test emergency light working properly- repair / replace if faulty.				✓			
3.2	**Fluorescent Luminaries (Including SL & PL Type)**							
	a. Inspect and ensure the tube is in good condition.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	b. Inspect and ensure no black mark or oil trace.						✓	
	c. Inspect and ensure no burnt marks at both ends of the tube.						✓	
	d. Ensure the capacitor function perfectly - replace if faulty.						✓	
	e. Ensure all luminaries is working properly - replace if faulty.						✓	
	f. Ensure no noise generated from the ballasts – replace if faulty/ noise.						✓	
	g. Ensure starters are in a good working conditions.						✓	
	h. Retighten all connection, terminations etc. Ensure all electrical connection is working properly.						✓	
	i. Inspect other luminaries (incandescent) – replace if faulty.						✓	
3.3	**Switches and Switch Socket Outlets**							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	a. Ensure no damage from visual inspection - replace if faulty.						✓	
	b. Open, clean and retighten all connections, termination, etc.						✓	
3.4	**Fans (Ventilating & Exhaust)**							
	a. Check and clean fan including ventilation & exhaust fan.						✓	
	b. Ensure continuous rotation or functionality.						✓	
	c. Ensure no noise being generated – repair / replace if faulty/noise.						✓	
	d. Inspect safety wire rope - ensure safety wire tape in good condition.						✓	
	e. Ensure that the exhaust fan is not blocked.						✓	
	f. Ensure that all bolts and nuts, connections, suspension rod, rubber mounting are in good condition.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	g. Ensure regulator function perfectly- replace if faulty.						✓	
	h. Test for insulation and earthing.						✓	
	i. Inspect regulator and ensure no noise generated during operation.						✓	
	j. Ensure all electrical connections for the fan working properly.						✓	
	k. Ensure auto louvers in working condition.						✓	
3.5	**Public Address (PA) System**							
	a. Ensure PA system working properly.					✓		
	b. Clean amplifier, loud speakers, microphone mixer, tuner, players and other related equipment.					✓		
	c. Ensure all electrical connections working perfectly.					✓		
	d. Ensure battery / battery charger working perfectly.					✓		
3.6	**Fireman's Switch**							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	a. Inspect & test fireman switch – replace if faulty.					✓		
	b. Record all activities & reading in the relevant room's log book.					✓		
4.0	**ELECTRICAL TESTING (TO ENSURE COMPLIANCE WITH B.S. 7671:1992-16TH EDITION IEE WIRING REGULATIONS MS.IEC 60364-1996)**							
4.1	**General Testing**							
	a. Inspect the condition of electrical equipment by usual inspection to check for fault indication on switches, socket outlets light points, light fittings, etc.						✓	
	b. Test and verify the accuracy of all meter- ensure all meter working perfectly (in switchboards and control panels).						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	c. Ensure main / sub switchboards is in good condition / working perfectly.						✓	
	d. Ensure conditions of distribution boards are in good condition / working perfectly.						✓	
	e. Ensure all circuit breakers and fuses working properly.						✓	
	f. Retighten all connections, termination, etc.						✓	
	g. Record locations for each final circuit, check with record available at distribution board and update when necessary.						✓	
4.2	**Final Circuit Continuity and Protection Circuit Tests**							
	a. Ensure the protective conductor is in good condition.						✓	
	b. Ensure all the wiring installation is in good condition and capable to working properly / function perfectly.						✓	
	c. Ensure copper tape for trunking is in good condition.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	e. Ensure final circuit continuity function properly. Shall be done every 5 years after installation.			✓				
	f. Ensure the insulation test shall be done every 5 years after installation.			✓				
4.3	**Installation Impedance Measurement**							
	a. Ensure all circuit breakers and fuses working properly - replace if faulty.						✓	
	b. Measure and record into log book insulation impedance between conductors and between conductors to earth.						✓	
	c. Record locations for each final circuit, check with record available at distribution board and update when necessary.						✓	
	d. Retighten all electrical connections, terminations, etc.						✓	
4.4	**Identification of Polarity**							
	a. Ensure electrical wiring polarity for light points, switches, power points,							✓

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	etc is in good condition and capable to working perfectly.							
4.5	**Measurement of Earth Fault Loop Impedance**							
	a. Test & record earth fault loop impedance.							✓
4.6	**Testing of Residual Current Devices (RCD)**							
	a. Ensure residual current circuit breaker function perfectly.						✓	
	b. Tripping test & record for RCD including tripping, sensitivity into log book.						✓	
4.7	**Measurement of Earth Electrode Impedance**							
	a. Test & record for earth conductor continuity.						✓	
	b. Retighten connections, terminations for earth electrode.						✓	
	c. Ensure that concrete inspection box for earth electrode in good condition.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	d. Test measure & record electrode impedance.						✓	
5.0	**HIGH VOLTAGE SYSTEM**							
5.1	**High Voltage Switchboard (11kV and Above)**							
	a. Test insulation at 5kV and record in megaohms.						✓	
	b. Ensure all connections, conductors, busbars, switch contacts, fuse contacts, etc. is in good condition / working properly-tighten.						✓	
	c. Ensure all cable boxes are in good condition.						✓	
	d. Clean and vacuum inside switchboard.						✓	
5.2	**Vacuum Circuit Breaker (VCB)**							
	a. Inspect and clean VCB for contamination, moisture and corrosion.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	b. Inspect the spring operating mechanism, condition of the lubrication on rotating and sliding bearing surfaces.						✓	
	c. Test the breaker pole with vacuum interrupter for any suspected damage.						✓	
	d. Ensure auxiliary switch, shunt releases/ blocking magnets, charging motor and D.C. rectifier in functional order.						✓	
5.3	**Metering (Voltmeter and Ammeter)**							
	a. Ensure meters condition inclusive of glass covers.					✓		
	b. Ensure that the pointer is at zero when not in use.					✓		
	c. Ensure that the reading indicated by the meters is correct – recalibrate if in accurate.					✓		
	d. Record voltmeter and ammeter maximum readings to ensure correct readings and no occurrence of overload.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
5.4	**Protection Relays**							
	a. Recalibration of over current and earth fault relays.							✓
	b. Recalibration of transformer protection and temperature control devices.							✓
5.5	**Direct Current (D.C) Supply**							
	a. Record voltage output of each cell.					✓		
	b. Ensure batteries electrolyte level is as per required level - top up if below level.					✓		
	c. Measure S.G of electrolyte (if lead acid type).					✓		
	d. Clean terminal from acid corrosion.					✓		
	e. Maintain cleanliness of cells.					✓		
	f. Clean, retighten vent plug.\					✓		
	g. Ensure connection between cells for cleanliness and lubricate with petroleum jelly.					✓		

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	h. Remeasure and record cell output voltage after maintenance.					✓		
	i. Ensure ventilation in battery room.					✓		
	j. Ensure all meters functional.					✓		
	k. For nickel cadmium batteries release air bubbles trapped in the batteries to prolong battery life time.			✓				
5.6	**Transformer (Resin / Dry Type)**							
	a. Verify the winding temperature and instrumentation circuits within operational range.						✓	
	b. Ensure the cooling fan is operational.						✓	
	c. Conduct visual inspection of coils, wiring and monitoring equipment for any suspected damage.						✓	
	d. Ensure all connections for correct degree of tightness.						✓	
	e. Test and measure insulation resistance. Record all measurement.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	f. Clean and remove dust /contamination from transformer.						✓	
	g. Observe for any abnormally high temperature / noise level and rectify.						✓	
	h. External surface to be cleaned and to touch up with paint if corroded.						✓	
	i. Ensure that no digging being done near underground cable route.						✓	
	j. Test cable insulation.						✓	
	k. Ensure cable markers are visible.						✓	
5.7	**11kV Cable (& Cables>1kV)**							
	a. Inspect condition of XLPE cable for any abnormal condition.						✓	
5.8	**Earthing System**							
	a. Retighten all connections, terminations, earthing.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	b. Retighten all earth electrode terminations and ensure corrosion free.						✓	
	c. Test and measure earth electrode impedance.						✓	
	d. Ensure marking & tagging of earth electrode in tag.						✓	
5.9	**H.T. Switch Room**							
	a. Cleaning of switch room.					✓		
	b. Cleaning of cable trench / condition of cable trench (ensure clean, water free and slabs are covered).					✓		
	c. Cleaning and repairing doors, locks and repainting if faded.						✓	
	d. Ensure that “No Smoking”, No Admittance” & “Danger Signs”, “Treatment Shock Card” & Schematic Drawing are in good condition and are visible/readable and replace if damaged.						✓	
	e. Ensure no moisture below rubber mat in front of the main switch board - replace if damaged.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	f. Ensure anti vermin wire mesh is in good condition – replace / repair if damaged.						✓	
	g. Ensure the roof / floor above free from leakages – repair if damage / leaking.						✓	
	h. Ensure no water flowing into Switch Room / Riser room - repair if damage / leaking.						✓	
	i. Ensure all electrical wiring function perfectly including electrical and fittings, power points, light fittings and exhaust fans - repair if faulty.						✓	
	j. Ensure duct seals is in good condition- repair if damage.						✓	
6.0	**LIGHTNING PROTECTION SYSTEM**							
	a. Visual inspection of all components of lightning protection system e.g. air termination, downdrop, connections, test connections, etc. to ensure that						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	they are in good working condition – replace/repair if damaged. Proprietary type lightning protection systems included.							
	b. Ensure that all finial / copper tape i good condition – if damaged, replace repair.						✓	
	c. Ensure structural support for system & check support saddles for copper tape- ensure securely fixed.						✓	
	d. Ensure all connections termination points to down conductors are in good condition – replace or repair if damaged.						✓	
	e. Check down conductors from test joints to earth chambers – ensure present and secured in place.						✓	
	f. Clean earth chamber (internal and external).						✓	
	g. Clean surface of connections, joints, terminations of conductors from oxidation and test for continuity to earth electrode.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	h. Test conductors for earth continuity and ensure that the overall earth impedance does not exceed (10 ohms).						✓	
	i. Record counter device reading.			✓				
7.0	**TELECOMMUNICATION SYSTEM**							
7.1	**Telephone System**							
	a. Ensure Key Phone System is functional.						✓	
	b. Ensure telephone sets/system is functional.						✓	
	c. Visually inspect telephone cabling / wiring system.						✓	
	d. Inspect telephone DP– Boxes, replace if damaged.						✓	
	e. Inspect telephone Riser cables securely clamped.						✓	
	f. Ensure MDF & IDF systems are functional.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	g. Ensure lightning / surge arrestors are functional.						✓	
	h. Ensure telephone earthing system connection / termination / inspection chambers in good condition.						✓	
	i. Test telephone earthing system ensure low impedance, instal additional chamber c/w earthing rod i damaged.						✓	
	j. Record all activities and reading in the relevant room's log book.						✓	
8.0	**ICT SYSTEM**							
8.1	**ICT ACTIVE SYSTEM**							
	a. Test system functionality.			✓				
	b. Manufacturer's recommendation to be complied with – all times.							
8.2	**STRUCTURED CABLING AND NETWORK EQUIPMENT FOR ICT SYSTEM**							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	a. Inspect closets of structured cabling system & telecommunications systems.				✓			
	b. Test all cables for functionality.							
	i) Fibre							✓
	ii) UTP						✓	
	c. Clean equipment rack, network switches and other related equipments.					✓		
	d. Test all network switches, patch coard, wireless access point for functionality.					✓		
	e. Ensure UPS system is operational.				✓			
	f. Other items :- (Manufacturer's recommendation to be complied with)							
9.0	EXTRA LOW VOLTAGE SYSTEM							
9.1	CCTV SYSTEM							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	a. Test system functionality.			✓				
	b. Manufacturer's recommendation to be complied with – all times.							
10.0	COMPUTERISED MAINTENANCE MANAGEMENT SYSTEM (CMMS)							
	a. Setup the CMMS with the help of the supplier.			✓				
	b. Setup Help Desk facilities to manage CMMS including telephone line to receive complaints and fixed internet access computer via broadband.	✓						
	c. Record work request, issue and close work orders for complaints.	✓						
	d. Prepare monthly report as per UMT format.			✓				
11.0	**STREET LIGHTINGS / COMPOUND LIGHTING**							
11.1	**Routine Inspections**							
	a. Carry out scheduled inspection of every street lighting / compound			✓				

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	lighting which shall be energized to ascertain the number of faulty lamps.							
	b. Check and ensure the correct operation time for all street lightings / compound lighting.			✓				
	c. Check, take photo and document detail of damaged pole resulting from accidents / damaged cables resulting from earth works by others if necessary.			✓				
11.2	**Lamps**							
	a. Check luminaries canopy, hinges operation/ clips for lamp cover, bowl and gasket. Repair if necessary.				✓			
	b. Replace all faulty lamp (refer to item 17.1 (a) above) if necessary.			✓				
	c. Check waterproofing status and IP compliance.				✓			
	d. Clean light fitting enclosure housing and glass cover (bowl).				✓			
	e.							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	Check lamp holder condition and associated supports / brackets. Repair if necessary.				✓			
11.3	**Lamp Control Gears**							
	a. Check and maintain all components : Ballast, igniter, capacitor, etc.				✓			
	b. Check and retighten all connections.				✓			
11.4	**Poles**							
	a. Straighten all slanting / fallen pole.						✓	
	b. Maintain service door, service door lock and hinges on all poles. Ensure they are in good condition.						✓	
	c. Check and maintain electrical components at service compartment such as earthing terminal, etc.						✓	
	d. Check, clean and retighten cable terminations.						✓	
	e. Check connection for rust / crack at arm bracket and base plate. Ensure						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	devoid of rust and repaint (touch-up) if necessary.							
	f. Check for rust at bolt / nut and tighten if necessary.						✓	
	g. Check and maintain labeling for all poles. Ensure they are in good condition and readable.						✓	
	h. Ensure no destructive pest and use suitable chemical repellant if necessary.						✓	
	i. Keep clean of all grass / shrubs / rubbish near pole for an area of 1m around the pole.						✓	
11.5	**Feeder Pillar.**							
	a. Measure and record incoming supply voltage and operation current.					✓		
	b. Check the functionality of circuit breaker, time switch, contactor fuse, MCB, MCCB, bypass auto / manual selector, etc.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	c. Check moisture level and take necessary actions.						✓	
	d. Check anti-vermin / insect netting and repair if necessary.						✓	
	e. Check, clean and test all equipment / accessories / components at the Feeder Pillar and restore in working condition if necessary.						✓	
	f. Check and retighten all connections, terminations and cable lug. Repair if necessary.						✓	
	g. Check for rust, damage, leakage and repaint if necessary.						✓	
	h. Apply lubricating grease for hinges and locks.						✓	
	i. Check functionality / operation of padlock. Change if necessary.						✓	
	j. Keep clean of all grass / shrubs / rubbish for an area around 1m of Feeder Pillar.						✓	
	k.							

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	Ensure no destructive pest and use chemical repellant if necessary.						✓	
11.6	**Cable and Wiring.**							
	a. Check and retighten all connections, cable terminations and wirings.						✓	
	b. Ensure all cables labeling are in good conditions.						✓	
	c. Check all underground cable markers in accordance to the actual cable route. Replace if found missing / damage.						✓	
	d. Test insulation wiring from control gears to lamp. Record and certify the result.						✓	
	e. Test insulation for every underground cable and wiring at lamp. Record and certify the result.						✓	
11.7	**Earthing System.**							
	a. Ensure all earthing connections bonding in good condition including connection for copper electrode, main earthing terminal, earth circuit cable, etc.						✓	

No.	Description	Maintenance Frequency						
		D	W	M	3M	6M	Y	2Y
	b. To check and retighten all connections, cable terminations and wirings.						✓	
	c. Check and maintain earth chamber.						✓	
	d. Test continuity test between earth electrodes to main earthing terminal at the controller. Record and certify the result.						✓	
	e. Measure, test, and record earth electrode impedance.						✓	
12.0	**INSPECTION OF ELECTRICAL SERVICES ABOVE CEILING.**							
	a. Inspect for proper electrical installation and wiring.					✓		
	b. Inspect for conduit, trunking and cable tray in good condition.					✓		

Chapter 4

4.1 INTRODUCTION

Building maintenance management or building facilities management is a bit tough job scope. If the building has a good management team, the tough job scope can be tackled and solve. The scale and age of the building also can affect and give problem to the management team. The problem happen can be minor or major. All the problems must be a solution to overcome. Therefore, the property management team need to take action in order to ensure the problem are solved and it will not interfere the occupants' safety and the quality of the building performance. In this chapter, there will be a discussion on the problem arisen during the internship period and the recommendation will be propose as to overcome those problems.

4.2 PROBLEM AND RECOMMENDATION

NO	PROBLEM	RECOMMENDATION
1	**No structural drawing** - The previous property management company, KJ Property Management did not handover the document to the Henry Butcher after they pull out from Phileo Damansara 1. - The BOMBA inspection failed due to no structural drawing provided at site.	The management team should hire new architect and structural engineer to analyze and draw the new structural drawing as the local authority and developer does not have any copies of the drawing.
2	**Usage of maintenance programme and schedule** - The management team does not apply the maintenance programme and schedule during managing the Phileo Damansara 1 even though the HQ have provided it to all site - Some of the facilities are not maintain according to the maintenance programme.	The Perbadanan Pengurusan Phileo Damansara 1 (PPPD1) should practice to implement the maintenance programme in their management because the maintenance programme can ensure the lifespan of the facilities provided in the Philoe Damansara 1.
3	**Communication between contractor and management** - The management team always miscommunication with the appointed contractor for rectification project. The appointed contractor always gives a last-minute information	The building manager should warn and remind the appointed contractor to provide a schedule of the project and provide information early as to ensure the management team can serve notice on time. The building manager also should share any information regarding

	and only communicate with the building manager. The last-minute information will delay the management to serve the notice to unit. For example, there will be a water distribution on Sunday, the contractor only informs the management on evening Friday or Saturday.	to the rectification project to all management team.
4	**Report of Services** The in-house maintenance team did not make the services report even though the building manager have asked them to do. They only depend on services report from the service provider or contractor. For examples, building manager ask them to do report of faulty sump pump and the replacement of the pump. They take a long time to do it.	The in-house team should do the report as the report will be the record of the services in future. The report can use as a track to identify when the last time of services, the condition of the facilities and others.

Chapter 5

5.1 CONLUSION

In conclusion, maintenance management is very important especially in the high-rise building. The maintenance management can increase the performance of the facilities, protect the building occupant, and expand the life cycle of the building. The maintenance management can be successful with the proper planning by the management team of the building. There are a lot of benefits when the management team or property management company can maintain the building well with the proper maintenance planning.

Perbadanan Pengurusan PD1 (PPPD1) is appointed property management team from the Henry Butcher Malaysia (Mont Kiara) Sdn Bhd. The property management team; PPPD1 have a maintenance strategy, maintenance planning, and maintenance programme. All the planned maintenance are provided by the Headquarters of the Henry Butcher Malaysia (Mont Kiara) Sdn Bhd. The planned maintenance is provided as to ensure all the facilities in the building are maintain on time. This can ensure the safety of the building occupant.

Based on the observation during the internship, the maintenance management by the Perbadanan Pengurusan PD1, are not using the maintenance planning and programme which is prepared by the HQ of Henry Butcher Malaysia (Mont Kiara) Sdn Bhd. But, PPPD1 have create their own planning in the maintaining the facilities in Phileo Damansara 1. Even though not using proper planning, the management team still can maintain the building.