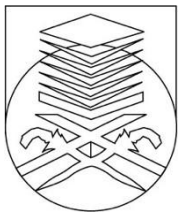

PROGRAMME IN BUILDING SURVEYING

DEPARTMENT OF BUILT ENVIRONMENT STUDIES AND TECHNOLOGY

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

PERAK BRANCH

SERI ISKANDAR CAMPUS

BUILDING CONDITION ASSESSMENT (BCA) FOR TYPICAL STRATA RESIDENTIAL UNIT

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BACHELOR OF BUILDING SURVEYING (HONS.)

PRACTICAL TRAINING REPORT

JANUARY 2022

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JANUARY 2022

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

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ABSTRACT

The purpose of this practical training is to give the student supervised opportunities to experience the essential practical tasks emphasized in their professional study and also to provide opportunities to apply their acquired skills and knowledge in working life. It also prepares university graduates to be able to exercise the administrative, leadership and specialized skills in the different fields of work and help the student to understand the work mechanism in the society. This report should contain 5 chapters which include the introduction, content of the report, case study, process or problem identify and the last chapter is the conclusion and recommendations. For the case study, it is focusing on typical strata residential unit and the case study that has been chosen is D'rapport Residences that located in Ampang. The methods of obtaining the information include site visit, proceed the inspection for Building Condition Assessment (BCA), and collect the data by referring to the report that was provided by the company. Through this practical training, it surely gives the best experience for the student.

ACKNOWLEDGEMENT

Assalamualaikum,

In the name of Allah, The Most Gracious, The Most Merciful, the most grateful to Allah because with His Mercy gives strength and guidance for me to complete this Practical Training (BSR666) for this semester. Besides, I would honour to thank my beloved parents for supporting me in terms of advice, financial and always supporting me to finish this task. My parents always become my morale boosting in whatever I do, and without them, I may not be able to complete this practical training well.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

In this chapter, all the necessary company details information has been stated. There are several things that have been explained which are about the company background, company mission, company core services, organization chart and also the key plan and location plan.

1.2 PRACTICAL TRAINING

Industrial training is a program that give students a working experience in a specified duration. As for the Department of Built Environment and Technology, the duration of industrial training were approximately 4 months (17 weeks) which is starting from 04th October 2021 until 30th January 2022. It is a real exposure that take place in real working environment where students can attain the practical as well as the theoretical value throughout the time of training. Basically, the industrial training provides students notable hands-on skills that can be useful in securing the future job opportunities and it also can lead to students' career pathway. Below is the purposes of industrial training:

i. To give exposure in real-world and corporate job framework.

ii. To enhance self-confidence, sense of responsibility and recognize our potential and competency.

iii. To improve and master the knowledge regarding the job scopes.

1.3 COMPANY BACKGROUND

Figure 1: Company logo

K & P Cove Consultancy Sdn. Bhd. is a company that is located at No. 9 2nd Floor, 2, Jalan Puteri 2/5, Bandar Puteri Puchong, 47100 Puchong, Selangor. This company was established on 29th June 2011, and it was formerly known as Cove Consultancy in conjunction with the expansion of various services to cater the current market demands of development industry services especially in Building Surveying and Building Management, or more precisely in building inspection.

The company comprises professionals who have attained the standard required by Royal Institute of Surveyors Malaysia (RISM). All the partners and employees in the organization are committed to conduct their operation with the highest level of professional integrity and ethics laid down by the Institute. The core business activity is building surveys, which is sometimes called as a condition survey. This is a comprehensive visual inspection on existing building stocks. Building survey is carried out to all types of property, including dwelling, commercial, institutional, historical, industry and warehouse buildings.Besides, the company also provide an extensive range of property inspection for residential and commercial buildings inclusive of pre-purchase, pre-auction, new construction stages, handover or whenever a building inspection is required.

1.4 KEY PLAN, LOCATION PLAN AND SITE PLAN

The figures (Figure 2, Figure 3, Figure 4) below show the key plan, location plan and site plan of company.

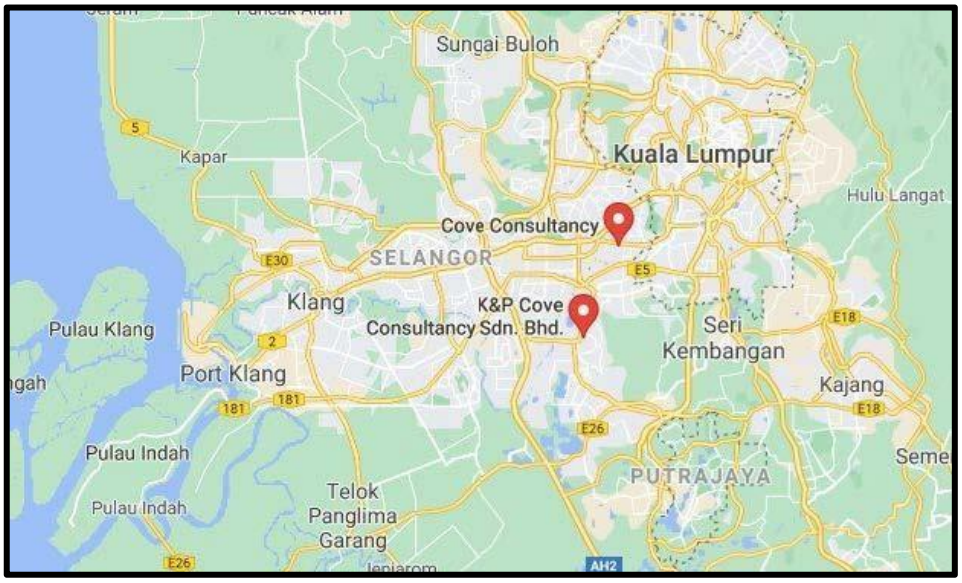


Figure 2: Key plan of Selangor

Figure 3: Location plan of Bandar Puteri, Puchong

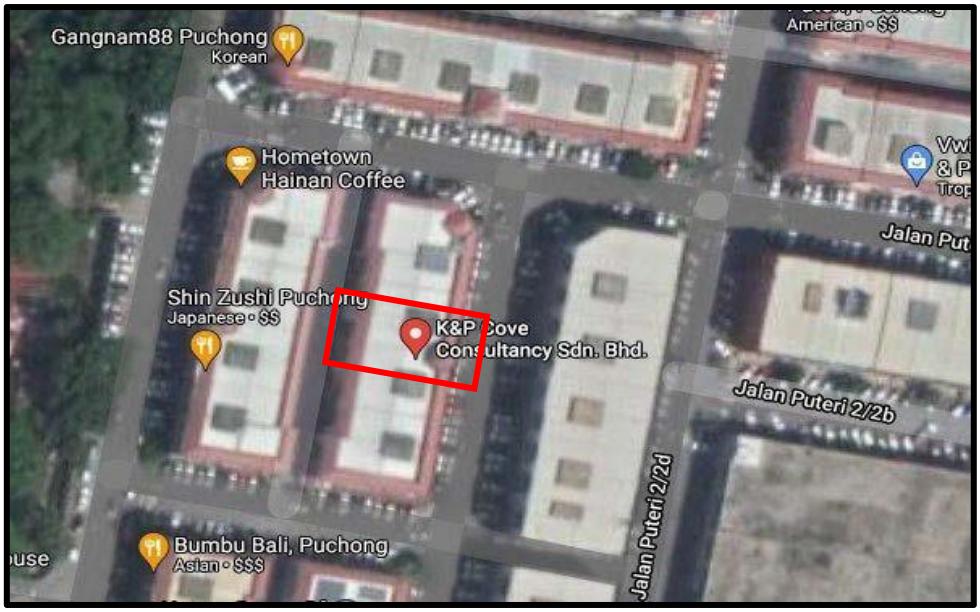


Figure 4: Site plan of K & P Cove Consultancy Sdn. Bhd.

1.5 COMPANY MISSION

Below are the mission to be accomplished by K & P Cove Consultancy Sdn. Bhd.:

i. To aid the client assess potential risk for their profit in investing a property.

ii. To merge resources and solution to deficiencies in current building system and workplace.

iii. To lay out an overview of current property condition to the client.

iv. To achieve excellent in building inspection by issuing a timely, efficient and thorough building inspection.

v. To boost the life quality, building quality and economic quality.

1.6 COMPANY POLICY

Below are the policy that need to be achieved by the company:

i. Client's satisfaction a must.

ii. Timely response to clients' needs

iii. Cost effective service.

1.7 COMPANY CORE SERVICES

As a competent building surveying consultant, there are several main services that provided by K & P Cove Consultancy Sdn. Bhd. The services that offered by this company regarding building surveying are Pre/Post Construction Condition Survey, Building Condition Assessment (BCA), Building Defect Investigation and Inspection, Due Diligence Inspection and others.

1.7.1 Pre/Post Construction Condition Survey

Pre/Post construction condition survey is also known as a dilapidation survey. Basically, this survey is carried out to in order to find the level of dilapidation of the adjoining properties, which is before the commencement of construction activities. It is also executed to determine the level of dilapidation of a building after finish of the tenancy period. The survey recorded and documented the condition of dilapidation of tenanted building.

1.7.2 Building Condition Assessment (BCA)

Building Condition Assessment (BCA) is one of the building surveying method which provide a detail inspection, examining, testing, review and report on the condition of a structure and system. Commonly, BCA inspect more on commercial type building, apartment and condominium.

The scope of work for BCA is covering the inspection of the whole building which includes of:

i. Finishes, architectural damages, fitting and appliances,

ii. Inspection and functional test for infrastructure,

iii. Inspection and functional test for mechanical and electrical system, fittings and appliances.

The outcome from the BCA inspection would be:

i. A report consisting the details types of defects and their location in the building,

ii. The identification for the seriousness of the defects,

iii. The identification of the possible causes and remedies for the defects,

iv. The estimated cost of repairs.

1.7.3 Building Defect Investigation and Inspection

The building defect investigation is carried out to find the fundamental cause of the defects. All the data and images of a defect will be put together. This type of investigation will provide a guidance on a proper recommendation for remedial works for the defects and also the estimated cost that involved.

1.7.4 Due Diligence Inspection

Due diligence inspection or survey is also known as a pre-acquisition inspection. This type of inspection will advise the client regarding the condition of the building before they proceed to purchase or rent a building. This is to avoid the mistake in investment that may leads to financial loss. As a consultant, recommendations will be given based on the method of construction, potential problems that may occur, existing defects, maintenance, utilization and others that may related. By conducting this, clients will be able to consider the worth of the property and the condition that they might be facing.

1.7.5 As Built Measurement

As-built measurement is one of the core services that provided by the company in order to measure the residential building, commercial, retails and medical which starting with the single unit and continue to cover an entire building. By using the Laser Technology and also the Computer Aided Design (AutoCAD), K & P Cove Consultancy is able to provide the client with existing building measurement that can help the property owner to figuring out the actual build up size of their property. Besides, through as built floor plans, the K & P Cove Consultancy will delivered the services according to the specific requirement that provided by the client and they also offer the cost-effective services to the client.

1.8 ORGANIZATIONAL CHART

Chart 1 below shows the organizational chart for K & P Cove Consultancy Sdn. Bhd.:

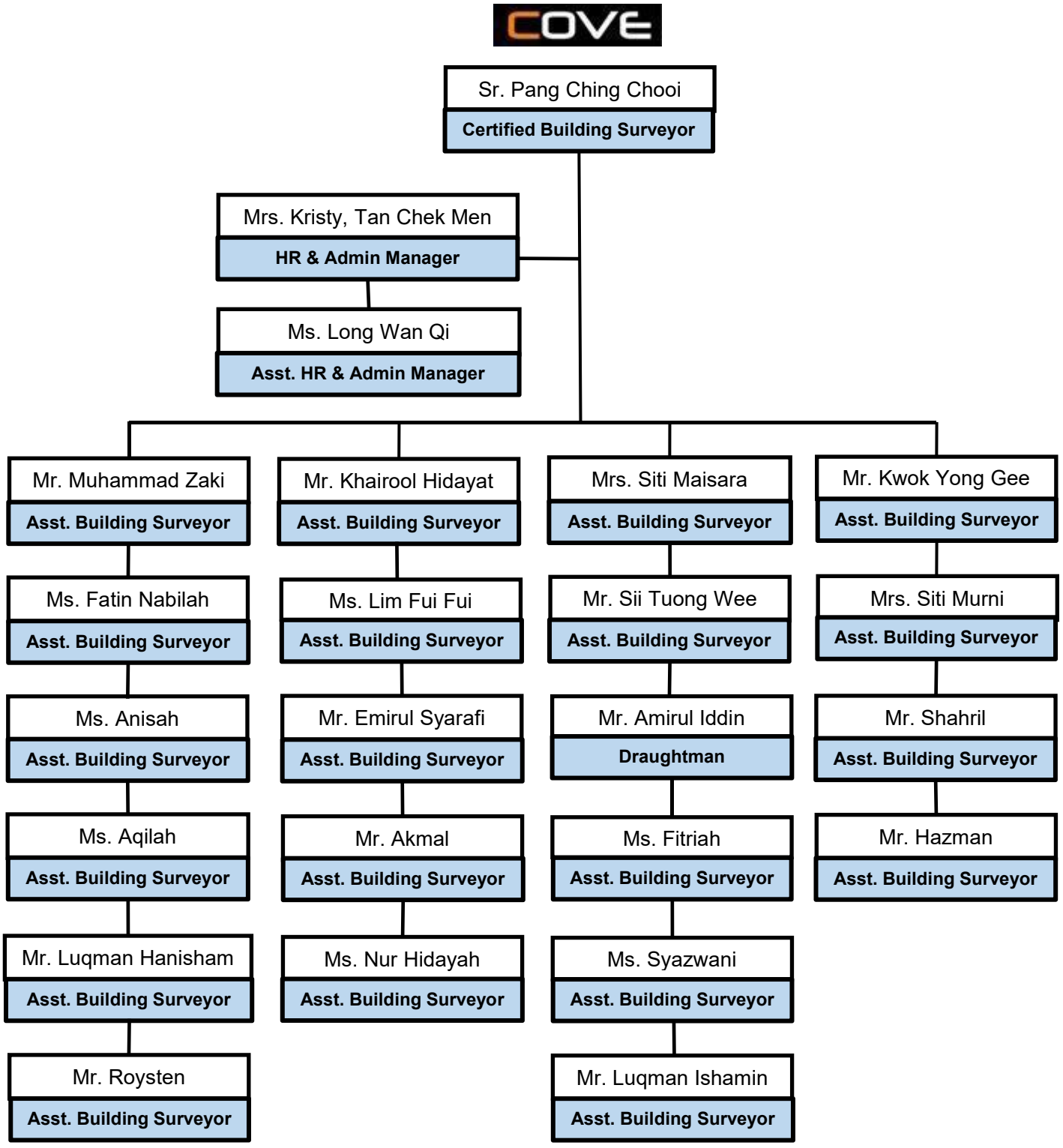


Chart 1: Company organizational chart

1.9 SUMMARY

In summary, this chapter has explained the overview about the detail of the company which shows first, the company background which is K & P Cove Consultancy Sdn. Bhd. with its mission and policy. Besides, through this chapter, we are able to know the core services that provided in this company which is Pre/Post Construction Condition Survey, Building Condition Assessment (BCA), Building Defect Investigation and Inspection, Due Diligence Inspection as well as As Built Measurement. Lastly, this chapter also providing the organization chart that stated the person involve in the K & P Cove Consultancy Sdn. Bhd.

CHAPTER TWO

CONTENT OF REPORT/ TOPIC TO BE DISCUSSED

2.1 INTRODUCTION

In this chapter, it will focus on the contents that will be included in the report and also about the topic that has been chosen. Basically, the selected topic is related to the Building Condition Assessment on typical strata residential unit. There are also discussions and detailed explanations about Building Condition Assessment (BCA) which includes the definition of BCA, benefits of conducting BCA, common types of defects and also the causes of defects.

2.2 DEFINITION OF BUILDING CONDITION ASSESSMENT (BCA)

A Building Condition Assessment (BCA) evaluates the condition of a building's envelope performance, structural foundation and superstructure, mechanical systems and also including heating and cooling. A BCA may also include the exterior elements of the property which including site grading and drainage, condition of roadway and lighting and also servicing infrastructure. Building Condition Assessment is sometimes also well-known as Property Condition Assessment and Facility Condition Assessment (Crozier Consulting Engineers, 2018).

Building Condition Assessment is a common part of any property's maintenance strategy. Generally, a BCA is requested by a property manager, owner, or board of directors when there are building or property issues which require improvements. Additionally, a building condition assessment should be completed (similar to a home inspection) prior to purchasing an existing property (Crozier Consulting Engineers, 2018).

According to Wahida et. al. (2012), the process of a BCA starts with site review, where surveyors collect photos, measurements, notes and information from property owners as data. Once this information is gathered, their team evaluates the data and delivers a final report with findings and

recommendations. These may be related to the building's existing condition, forecasts for future performance, a maintenance plan, and when required, recommendations for repairs to the building's envelope, structure, and mechanical systems. An opinion of probable costs or capital reserve plan may be completed to assist the client with determine the value of current deficiencies or forecasting future financial inputs and expenditures.

The data of the defects obtained from the process of inspection are useful to enhance and improve the condition of the buildings. In addition, the findings provide useful insight on the cause of defects, and type of defects tend to occur in the building element, which can be used as the input for maintainability and the use of building material during design stage. The defect data can produce a data access system and situate condition of the building easily and quickly for monitoring and decision-making purposes. Setting of priorities for maintenance work dealing with the risk of failure of the components is a way to tackle problems within limited of maintenance budgets (Yacob et. al., 2018).

By using the BCA, the actual condition of the component or buildings, maintenance planning, budgeting can be determined and recorded systematically and comprehensively. Furthermore, the captured and recorded condition of each building element can generate the list of the defects, rating and maintenance action, as well as deterioration curve for the building (Yacob et. al., 2018).

2.3 THE BENEFITS OF CONDUCTING A BCA

This BCA is so important in order to make sure the building can have a long of life span and avoid the damage or defect for each element or component in the building. Below is the chart that show the benefits of conducting a BCA and also the explanation.

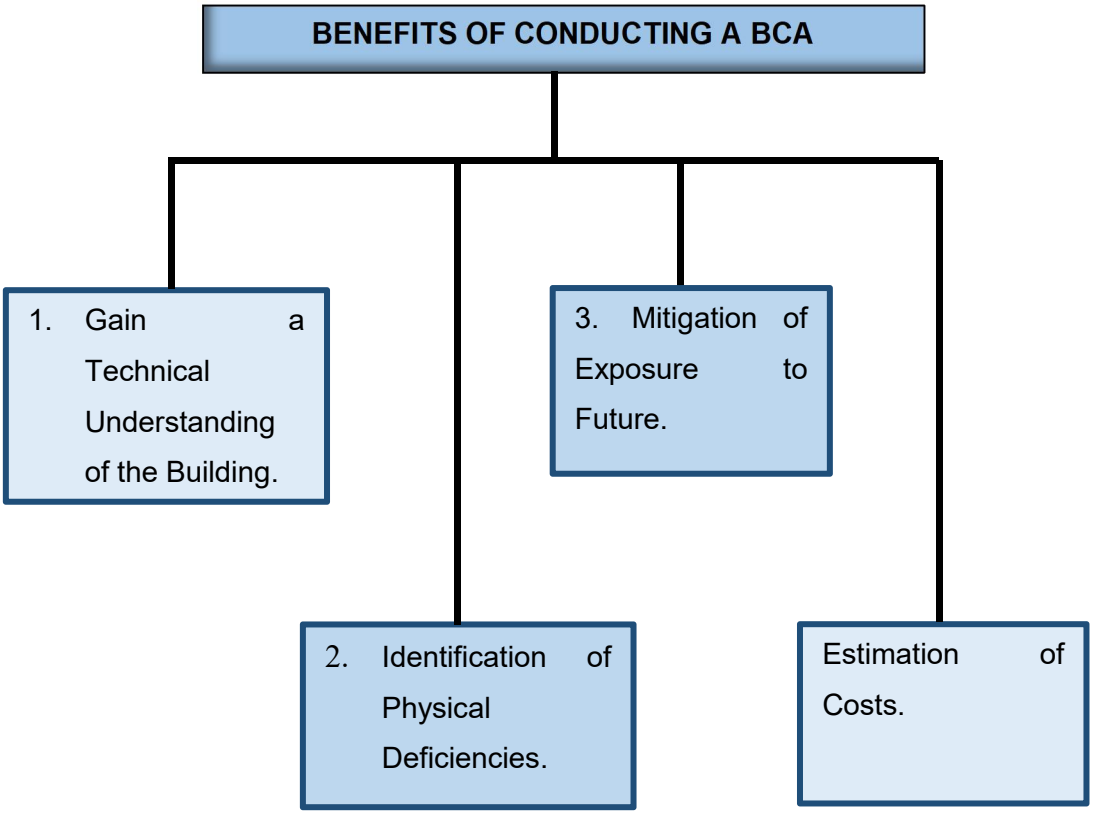


Chart 2: Chart of benefits of conducting a BCA

1. Gain a Technical Understanding of the Building.

The results of a BCA will help to understand how the building functions and make a more informed purchasing decision. If there are particular features of the building that are importance, this is the chance to evaluate them in detail. The BCA allows to more fully evaluate the risks associated with the building. This will also allow to further understand the technical aspects of the property, especially as it relates to future use (Sobhani S., 2016).

2. Identification of Physical Deficiencies.

A good BCA should list all the problems, both big and small, associated with a building. Some of deficiencies that smaller, easy to repairs become major that will be very expensive to correct because building owner do not take the action immediately. Additionally, a BCA may reveal design or construction problems, including structural issues, code violations, poor material quality, bad workmanship, and inadequately designed systems. These can all shorten the life of a building and be very costly to remediate (Stephen Sobhani, 2016).

3. Estimation of Costs.

A good BCA will estimate how much it is going to cost to fix all of the problems identified and lay out expectations for near term capital outlays. This may be the most important part of the BCA. These costs should be part of the calculations for the returns of expect to get from the property. There also need to be prepared for the current and future expense and capital outlays (Stephen Sobhani, 2016).

4. Mitigation of Exposure to Future Liability.

The inspection may identify potential health or safety hazards that could expose to huge liabilities later, but just as importantly if the inspection does not identify a particular hazard that causes injury later, the BCA becomes an excellent prophylactic against liability-evidence that the alleged hazard was not reasonably foreseeable. Through the BCA, it can be as prove if something bad happens in the future (Stephen Sobhani, 2016)

2.4 COMMON TYPE OF DEFECTS

There are many categories of defects can be found during BCA works. Below are the types of defects that are commonly found in the buildings.

2.4.1 Peeling of Paint

Figure 5: Peeling of paint (Bob Vila, 2015)

Peeling is a loss of adhesion where the paint film peels away from the surface like from wall, wooden, metal, and others. Peeling of paint is mainly caused by moisture on the surface, poor surface preparation, using an incorrect painting system. It is the swelling of a paint film caused due to loss of adhesion between one or more coatings or between primer and parent surface and moisture on the surface (Bakri et. al., 2014).

2.4.2 Cracking of Wall

Figure 6: Cracking of wall (Alisa Ivanova, 2016)

Cracks is a common defect occurrence in a building. A building component will develops the cracks whenever stress in the component is exceeding its strength. The crack is classified into structural and non structural categories. Aside from conveying loads from rooftops and floors to establishments, outer dividers might be unsafe to a building on the off chance that they are fundamentally unsound. Splits in divider, either vertical or corner to corner, are regular indications of basic unsteadiness (Okuntade T., 2017).

2.4.3 Erosion of Mortar Joints

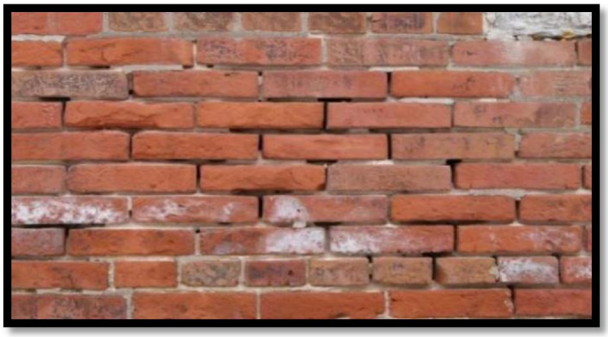


Figure 7: Erosion of mortar joints (International Masonry Institute, 2002)

Joints basically, the principle capacity of a mortar joint is to try and out abnormalities of individual squares, regardless of whether they are of stones or blocks. In the meantime, it gives some grip between the pieces. Rotted mortar can be expelled persuasively by the utilization of a mechanical plate or deliberately raked out by utilizing a blade or spike physically (Bakri et. al., 2017).

2.4.4 Honeycomb

Figure 8: Honeycomb (Dimuthuchat, 2016)

Honeycombing alludes to voids in cement caused by the mortar not filling the spaces between the coarse aggregate particles. It normally winds up noticeably clear when the formwork is stripped, uncovering a harsh and "stony" solid surface with air voids between the coarse total. Once in a while, be that as it may, a surface skin of mortar veils the degree of the deformity. Honeycombing may broaden some profundity into the part. Arrangement of honeycombing is because of the nearness of air and rise at the surface of formwork and results a detachment among totals and bond blend. This issue will harm the solid and more genuine assault the support bar in cement (Okuntade T., 2017).

2.4.5 Dampness

Figure 9: Dampness (Nurul Nadia Omar Bakri, 2014)

Dampness can be a genuine matter, especially to structures situated close to water sources. Water infiltration happens usually through dividers presented to winning wet wind or rain. With the presence of gravity, water may infiltrate through vessels or splits between mortar joints, and blocks or squares before working up trap dampness behind hard renders. Water may likewise drive additionally up the divider to rise at a more elevated amount. Clamminess additionally happens in dividers because of different components, for example, spilling canals or down funnels, faulty channels, burst pipes and buildup because of lacking ventilation (Bakri et. al., 2014).

2.5 THE CAUSES OF DEFECT

There are many reasons that lead to the occurrence of defects in the building. This is explained in detail as follows:

2.5.1 Peeling of Paint

According to Fredrick (2021), there are many causes that can lead towards the peeling of paint. The first cause is water. When water penetrates through the coats of paint, it causes the layers to separate and detach from the surface. The water can originate from a leaking roof, gutter, flashing, or soffit. It can also be the result of a permeable wall allowing water to penetrate to the inner surface.

The next cause is poor surface preparation. For a coat of paint to stick properly, the surface should be adequately prepared. If the paint is applied on an uneven or unprimed surface, it will not take long before the paint begins to blister and peels. Other causes, such incomplete joint compounds and improperly placed seam tapes, can also hinder the paint from sticking properly (Fredrick, 2021).

The other cause is the surfaces exposed to high temperature. Paint does not adhere quite well to surface with temperatures above the standard atmospheric range. High temperatures cause the paint to dry faster, preventing the layers from forming strong bonds (Fredrick, 2021).

2.5.2 Cracking of Wall

Andrew (2018) stated that there are many factors that may lead towards the occurrence of cracking of wall such as climate and seasonal changes. Climate and seasonal changes, such as drought and flood, can cause dramatic contraction and expansion of the soil or changes in the water table far below a property leading to wall cracking.

The other factor is excavation and constructions work nearest the building. If the building located at new housing estate or in close proximity to a construction site, it may experience wall cracking. The use of heavy machinery, vibration, excessive mechanical compaction of the soil or blasting

(the use of explosives to excavate) can all cause the walls to crack (Andrew, 2018).

2.5.3 Erosion of Mortar Joints

According to Hong, C. H. (2016), erosion of mortar joint can occurs in one building because of many causes. The first one is building movement. The tolerance for movement was not designed into structures. When movement or uneven settling of a building's foundation or walls, occurs, cracking of the masonry, usually at mortar joints will occurs. Repeated thermal cycling causes the masonry to expand and contract breaking the bond between the mortar and units.

The second cause that may lead toward the erosion of mortar joint is because of weather action. Weather such as wind, rain and sun is something cannot be avoid. Mortar lacking possible causes from acid rain (Hong, C. H., 2016).

2.5.4 Honeycomb

Based on study conducted by CE Schultz (2014), there are many common causes of concrete honeycombing, including the imbalances in the fine material added, allowing larger aggregate (rocks) to consolidate and also poor cement to water ratio, which can reduce the concretes work-ability.

Next, the other causes that may lead to honeycomb are inefficient means of vibration directly after the concrete is poured, improper reinforcing bar placement at vertical and horizontal grade beam transitions leading to poor concrete fill, adhesion or leakage of concrete at poorly braced form boards and maybe also because of low-quality or damaged form boards, which prevents firm contact with the concrete (CE Schultz, 2014).

2.5.5 Dampness

For the dampness, there are 5 major sources that can lead to the occurrence of this defect. The first one is due to capillary action which the water present in ground soil may rise above the ground level through the walls. If ground water table is nearer to the building foundation then also it can also become a source of dampness (Bakri et. al., 2014).

The next sources is condensation of atmospheric moisture. It can also be a source of dampness because this form of water gets deposited on different components and gradually find their way to penetrate into the building which causing the dampness (Bakri et. al., 2014).

Third, due to rain water. Rain water can penetrate through the roofs if the roof is of bad quality. Inadequate roof slopes or defective junction between roof slab and parapet wall may cause dampness (Bakri et. al., 2014).

Forth, this dampness may occur because of the presence of gutter near the building which will store the rain water and subsequently this water will create dampness in the external walls. And lastly, because of wet areas of buildings such as kitchens and bath rooms that having substandard plumbing fitting which can also be a source of dampness (Bakri et. al., 2014).

2.6 SUMMARY

This chapter has explained in detail about the types of defect that commonly occurs in the building such as peeling of paint, cracking of wall, dampness and others. Besides, it is also provided with the possible causes that may lead to the occurrence of the defect. If the causes for every defect can be identified, it can help the building surveyor to give the advice to the owner in order to fix the defects.

This chapter also provided the benefits that can be achieved by conducting the Building Condition Assessment. Basically, some of building can live exceeding its life span because of the good maintenance that have been carried out to the element, services and system that located in the building.

CHAPTER 3

CASE STUDY

3.1 INTRODUCTION

In this chapter, will be focusing on the case study to proceed the Building Condition Assessment. The building that have been choose is a unit in D'rapport Residences, Ampang, Kuala Lumpur.

In this chapter also, will covering on general information about the building chosen which include the building background and location plan. The tools and equipment that used during the inspection also will be mentioned in details including with the inspection's procedure that carried out.

3.2 CASE STUDY

Figure 10: D'rapport Residences, Kuala Lumpur

D'Rapport Residences is a Leasehold Condominium that located at Jalan Nipah, Ampang Hilir, 55000, Kuala Lumpur. This building was completed in year 2019 and the developer that involved is ACMAR GROUP. This building consists of 38 floors and a total of 1,099 units. The build-up size is 1,108 to 10,560 sqft. The facilities at D'Rapport include Sauna, Parking, Jacuzzi, Squash court, Cafeteria, Tennis court, BBQ, Playground, Wading pool, Jogging track, 24-hours security, Gymnasium, Swimming pool.

Located in a reputable area of Malaysia's capital city, Ampang is recognized as one of the more established luxury residential areas of Kuala Lumpur that is centrally located (about 3 km from KLCC and 8 km from the Sentral station). Although it is located in the heart of the bustling city, D'Rapport Residences is strategically situated, away from the high tempo of city life in the midst of matured and especially landscaped greenery.

Basically, this building was divided by 5 main Block which is Block A (167 units), Block B (150 units), Block C (166 units), Block D (162 units) and Block E (206 units). As for the units, there are 8 different types of units for every blocks which known as Type A1, Type A2, Type B, Type B-Twin, Type C, Type D1, Type D2 and Type D3. All of these unit types have a different layout in floor plan and different area size. Since D'rapport is the large building, only one unit from Block B that will be focusing as the case study in this report, which is a unit from Type C.

3.3 KEY PLAN AND LOCATION PLAN

Figure 11: Key plan of Kuala Lumpur

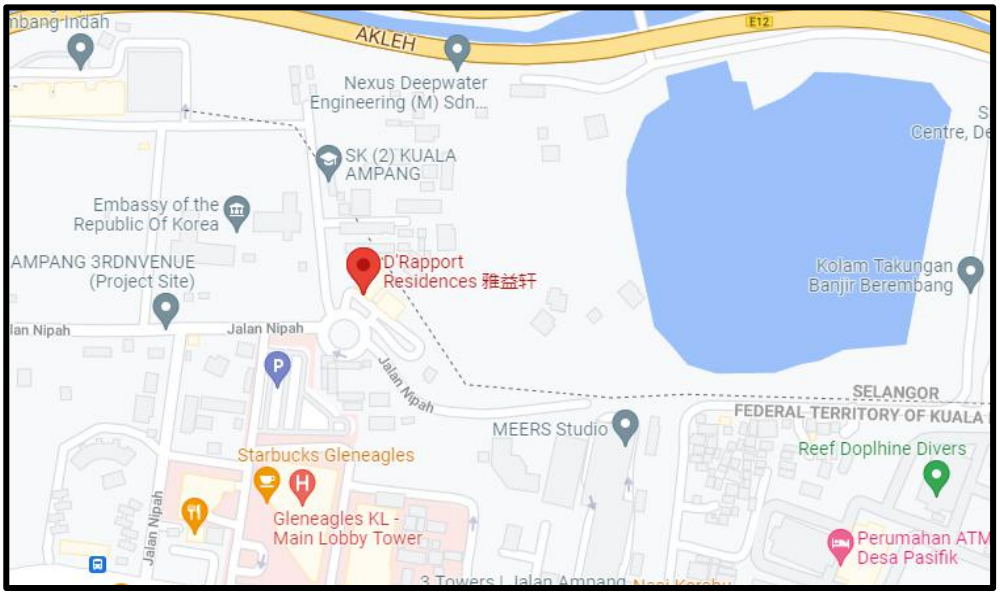


Figure 12: Key plan of D'rapport Residences

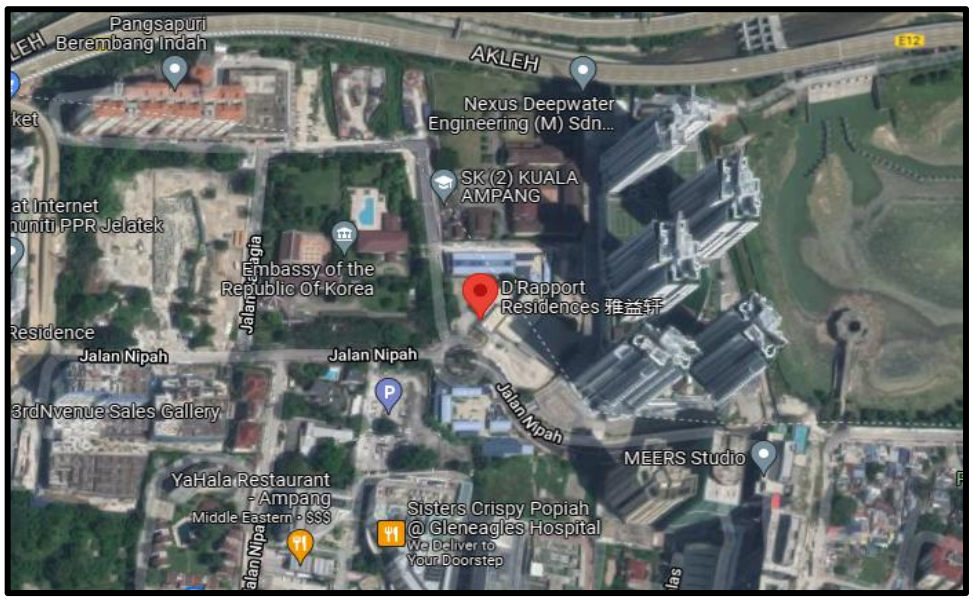


Figure 13: Location plan of D'rapport Residences

3.4 LAYOUT PLAN FOR CASE STUDY

As mentioned before, only one unit will be focused in this report due to the D'rapport Residences that consists of many units and covering large area. The unit that chosen is from Block B, which is the Type C unit.

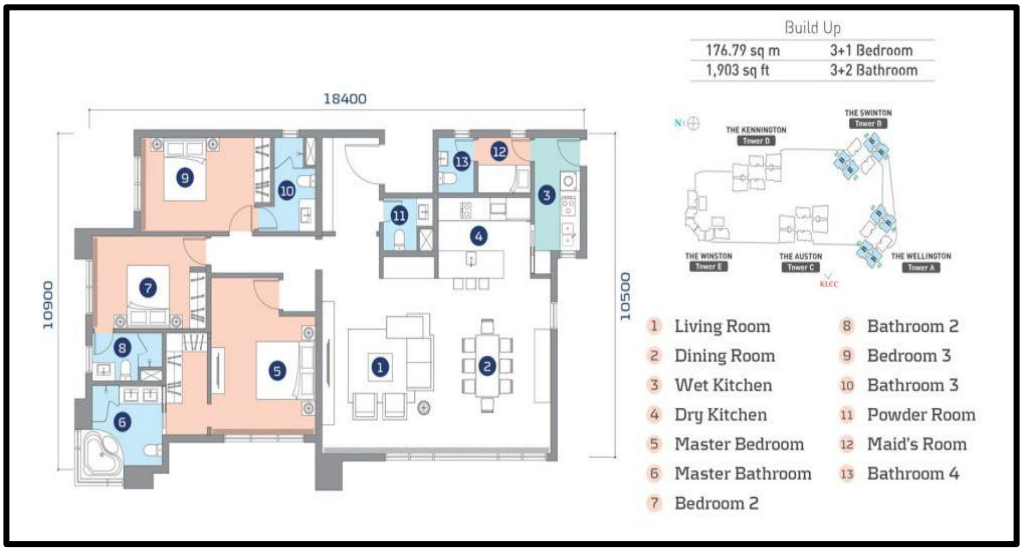


Figure 14: Type C unit

For the Type C unit, it is consisting of 13 main areas in one unit. As shown in Figure 8, the area includes of living room, dining area, wet kitchen, dry kitchen, master bedroom, master bathroom, bedroom 2, bathroom 2, bedroom 3, bathroom 3, powder room, maid's room and bathroom 4. The build up size for this Type C unit is 1,903 square feet (176.79 sq m) and it is can be categorized as one of the most accommodating unit in D'rapport Residences due to the large area and it was divided by many spaces.

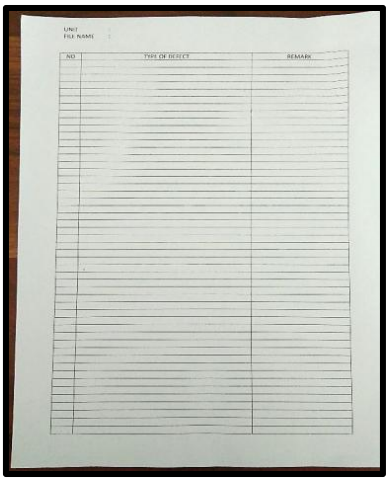
3.5 EQUIPMENT AND TOOLS

The equipment and tools is used to increase the inspection efficiency and accuracy in detecting different defects and issues that may not visible in normal view. With the use of equipment and tools while conducting the inspection, it will ease the work throughout the inspection. Table 1 shows the equipment and tools that were used during the inspection work.

Table 1: Equipment used for BCA inspection

NO.	EQUIPMENT/ TOOLS	FUNCTION
1.	 Figure 15: Measuring tape	To measure the distance or length.
2.	 Figure 16: Laser distance meter	To accurately measure the distance between two spans by using a laser.

3.	 Figure 17: DSLR camera	To take a clear and high definition defect photo.
4.	 Figure 18: Crack ruler	To measure the width of a crack on a surface
5.	 Figure 19: Tapping rod	To assess hollowness of tiles by tapping the rod to the wall tiles or floor tiles.

6.	 Figure 20: Sticker	To tagging defects and to eases the recognition of defect part.
7.	 Figure 21: Defect list	To took notes/list out defects on the location.

3.6 BUILDING DEFECTS AT D'RAPPORT RESIDENCES

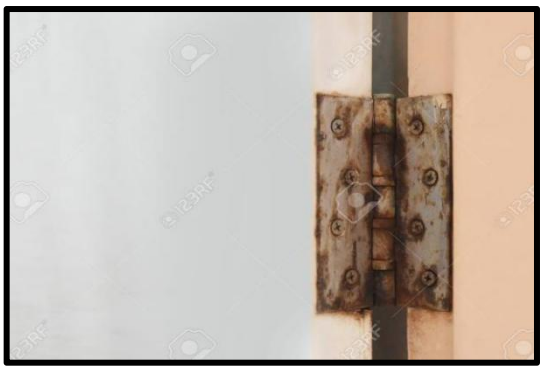
The building defects may occur due to the architect's design, manufacturers problem, faulty material, inappropriate installation as well as a failure of the contractor to follow the design.

Building defects can be categorized into two (2) which is major defects and minor defects. Major defect is a defect that may be considered as a dangerous defect on the location, particularly on key component of a structure, while the minor defect is a defect that can be repair or maintained.

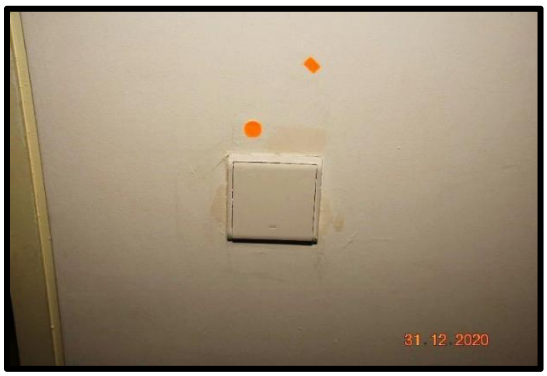
There are a few types of defects that commonly found during inspection at D'rapport Residences.

Table 2 shows the example of defects that found and some descriptions.

Table 2: Type of defects at D'rapport Residences

NO.	DEFECT	DESCRIPTION
1.	 Figure 22: Peeling of paint	It might be happened due to regularly wet by rain or dew on a particular wall location.
2.	 Figure 23: Rusting	Rusting of metal appliances seen on door hinges, screws, door lockset, tissue holder and others. It might be happened due to the presence of moisture at the location.

3.	 Figure 24: Crack	A wide crack might be happened due to the movement of earth, while a fine crack lines usually found on wall.
4.	 Figure 25: Detached	Detached of wall or floor tiles might be happened due to moisture that seep into the wall and cause the tile to detached from its position or less cement is laid during the installation.
5.	 Figure 26: Hollowness	Hollowness of a tile might be happened due to less cement is laid during the installation.

6.	 Figure 27: Patch mark	Patch repair mark observed on surface.
7.	 Figure 28: Broken	Broken ceiling observed.
8.	 Figure 29: Separation gap	Visible gap observed between door frame and floor tile, might be due to unsuitable size of door frame.

3.7 INSPECTION PROCEDURE

There are a few steps in conducting BCA inspection. According to K & P Cove Consultancy Sdn Bhd, the inspection will start by following the clockwise rotation. First, we have to identify and tagging the defects. We visually identify the defect with the help of proper equipment or tools to test the occurrence of defect. Next, tagging the defect is the step where a sticker is placed on the identified defect. Figure 30 and Figure 31 below show the process of identifying and tagging the defect found.

Figure 30: Process of identifying hollowness of floor tiles by using a tapping rod

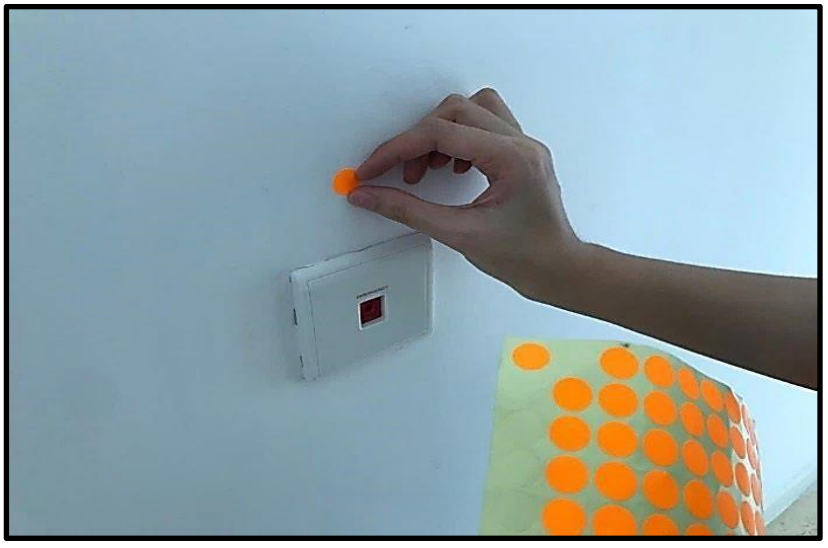


Figure 31: Process of tagging a repair patch mark on the wall

Secondly, the tagged defects were recorded by taking a picture of the defect by using a DSLR camera as shown in Figure 32.

Figure 32: Process of capturing the defect photo

Thirdly, the defect should be measured where necessary, manually listed and indicated on the floor plan. It is to ease the report writing. Figure 33, Figure 34 and Figure 35 show the process of measuring the defect, process of listing the defect on defect list and process of indicate the defect on floor plan.

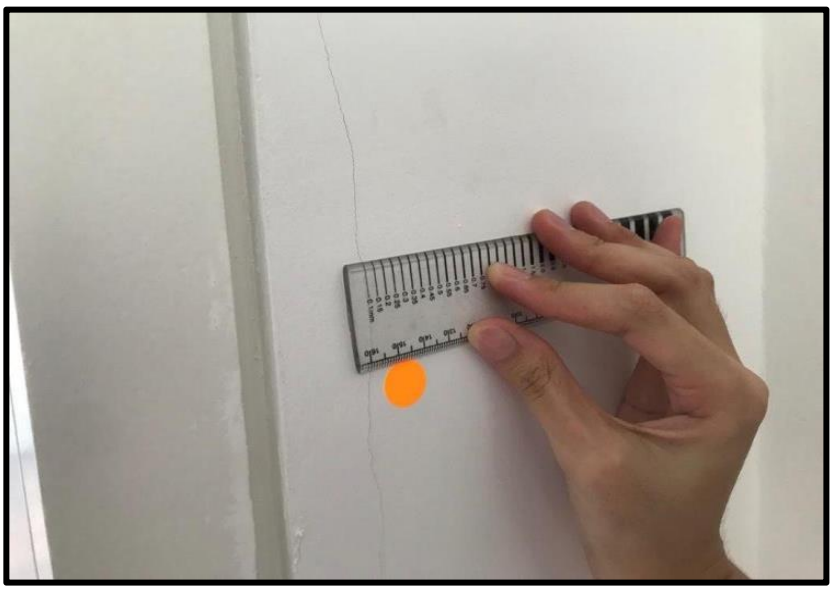


Figure 33: Process of measuring a defect

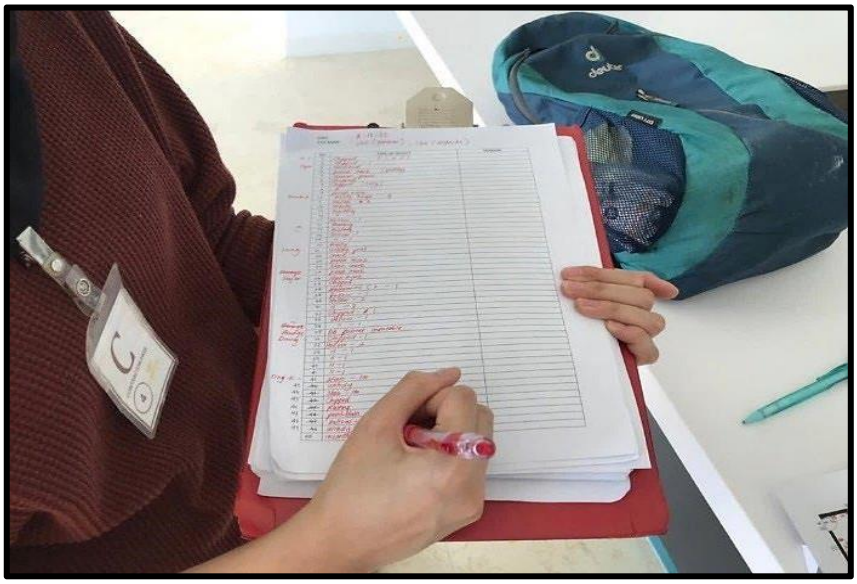


Figure 34: Process of listing the defect in defect list

Figure 35: Process of indicate the defect on floor plan

Example of defect indication on floor plan

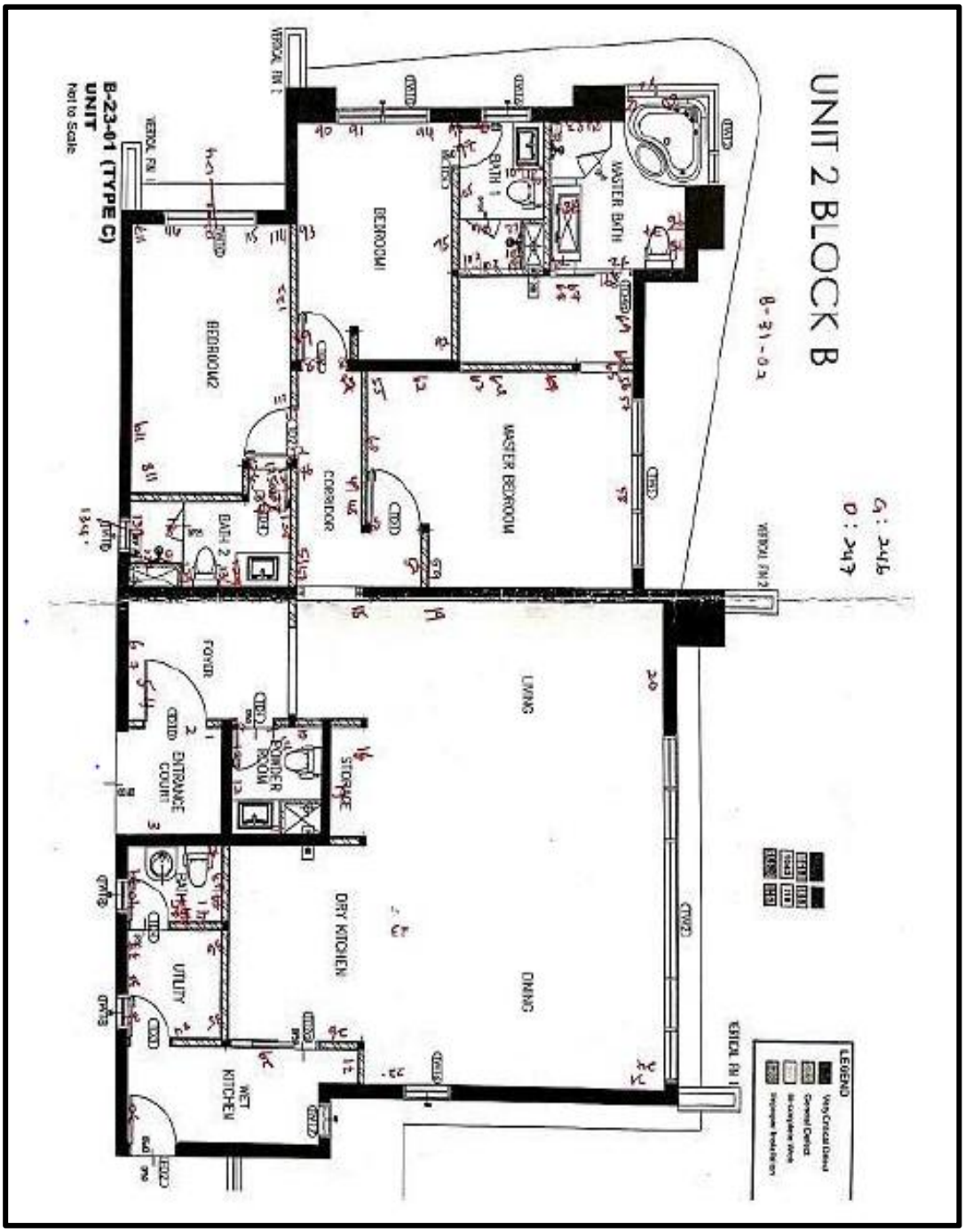


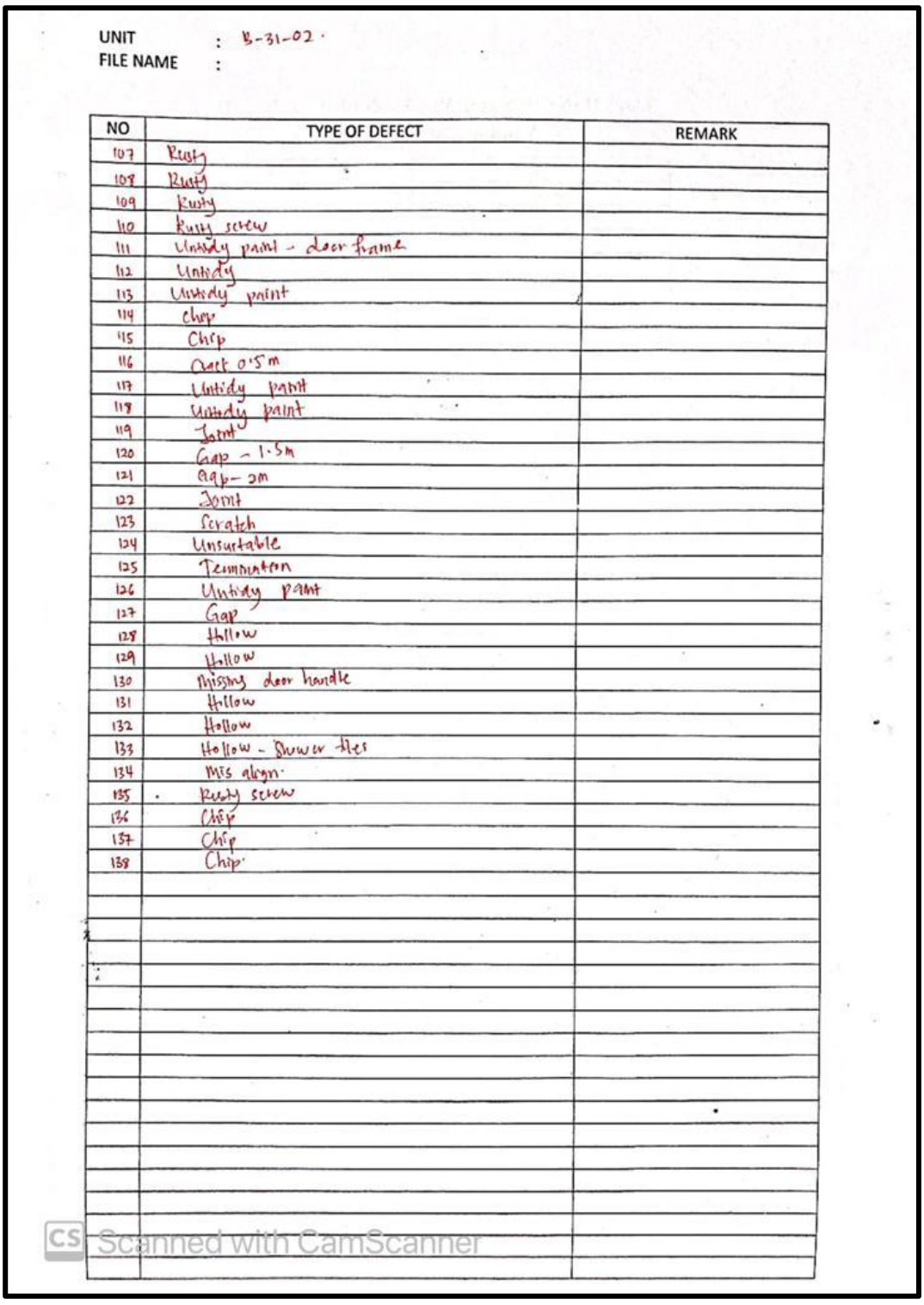
Figure 36: Defect indication

Example of listing the defect in defect list

UNIT : B-31-02
FILE NAME :

NO	TYPE OF DEFECT	REMARK
1	untidy	54 chip.
2.	Hollow	55 untidy paint
3.	Hollow	56 crack - 1m
4	Door scratch	57 crack - 1m
5	Scratch	58 chip
6	Stain	59 gap - 1m
7	Gap	60 gap - 1.5m
8	Termination	61 ~~stir~~ joint
9	Gap	62 gap
10	Hollow	63 joint
11	Hollow	64 Scratch
12	Hollow	65 crack - 0.5m
13	Hollow	66 crack - 0.5m
14	Grouting	67 chip
15	Crack	68 crack.
16	Stain - cabinet.	69 gap - 1m
17	Def Stain - cabinet	70 gap - 1m
18	Joint	71 chip
19	Sealant	72 chip - d/frame
20	Gap	73 termination
21	Sealant.	74 Hollow
22	Gap	75 Hollow
23	Hollow	76 Hollow
24	Chipped	77 Uneven
25	Crack - 2m	78 chip
26	Untidy	79 Hollow
27	Crack	80 Hollow
28	Untidy	81 Hollow
29	Paint mark	82 Hollow
30	Chipped	83 Hollow
31	Hollow	84 Rusty
32	Lining	85 Rusty
33	Untidy paint	86 Rusty screw
34	Hollow	87 Termination
35	Hollow	88 Gap - door frame
36	Hollow	89 Chip
37	Hollow	90 Crack - 1m
38	Hollow	91 Crack - 0.3m
39	Lining	92 Untidy
40	Rusty.	93 Gap - 3m
41	Missing screw.	94 Gap - 1.5m
42	Chip	95 Unsuitable
43	Hollow	96 untidy.
44	Hollow	97 Termination
45	Hollow	98 Hollow
46	Untidy	99 Hollow
47	Crack 2m	100 Hollow
48	Untidy	101 Rusty
49	Joint	102 Hollow
50	Joint	103 Hollow
51	Gap 1.5m.	104 Chip
52	Gap	105 Rusty - towel rail
53	Joint.	106 Rusty

Figure 37: Defect list



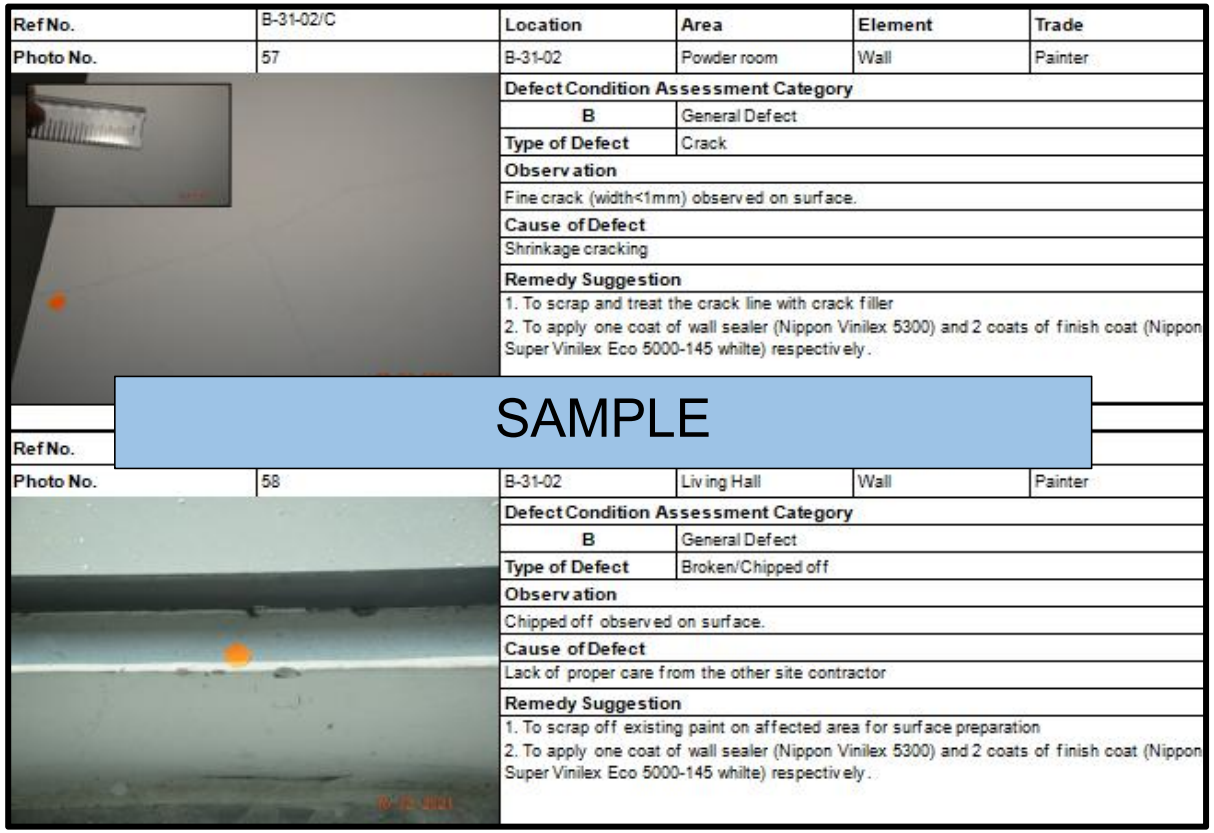
UNIT : B-31-02
FILE NAME :

NO	TYPE OF DEFECT	REMARK
107	Rusty	
108	Rusty	
109	Rusty	
110	Rusty screw	
111	Untidy paint - door frame	
112	Untidy	
113	Untidy paint	
114	Chip	
115	Chip	
116	Crack 0.5m	
117	Untidy paint	
118	Untidy paint	
119	Joint	
120	Gap - 1.5m	
121	Gap - 2m	
122	Joint	
123	Scratch	
124	Unsuitable	
125	Termination	
126	Untidy paint	
127	Gap	
128	Hollow	
129	Hollow	
130	Missing door handle	
131	Hollow	
132	Hollow	
133	Hollow - Shower tiles	
134	Mis align	
135	Rusty screw	
136	Chip	
137	Chip	
138	Chip	

Figure 38: Defect list (cont'd)

3.8 REPORT WRITING

After the process of identifying, tagging, recording, listing and indicating the defect at the site, the data will be inserted into a defect sheet as shown in Figure 39 and Figure 40 below.



Ref No.	B-31-02/C	Location	Area	Element	Trade
Photo No.	57	B-31-02	Powder room	Wall	Painter
		Defect Condition Assessment Category			
		B	General Defect		
		Type of Defect	Crack		
		Observation			
		Fine crack (width<1mm) observed on surface.			
		Cause of Defect			
		Shrinkage cracking			
		Remedy Suggestion			
		1. To scrap and treat the crack line with crack filler 2. To apply one coat of wall sealer (Nippon Vinilex 5300) and 2 coats of finish coat (Nippon Super Vinilex Eco 5000-145 whilte) respectively.			
Ref No.					
Photo No.	58	B-31-02	Living Hall	Wall	Painter
		Defect Condition Assessment Category			
		B	General Defect		
		Type of Defect	Broken/Chipped off		
		Observation			
		Chipped off observed on surface.			
		Cause of Defect			
		Lack of proper care from the other site contractor			
		Remedy Suggestion			
		1. To scrap off existing paint on affected area for surface preparation 2. To apply one coat of wall sealer (Nippon Vinilex 5300) and 2 coats of finish coat (Nippon Super Vinilex Eco 5000-145 whilte) respectively.			

Figure 39: Defect sheet

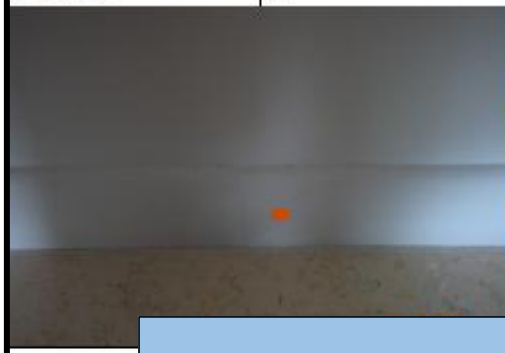
Ref No.	B-31-02/C	Location	Area	Element	Trade
Photo No.	59	B-31-02	Living Hall	Skirting	Timber specialist.
		**Defect Condition Assessment Category**			
		C	In-Complete Work		
		Type of Defect	Separation gap		
		Observation			
		Untidy joint between timber skirtings.			
		Cause of Defect			
		1. No touch up work after installation.			
		Remedy Suggestion			
		1. To prepare the surface and apply wood filler to fill the gap. 2. Scrub the surface with sand paper 3. To prepare the surface and apply one coat of Nippon Super Vinilex Eco 5000 - 145 white			
Ref No.					
Photo No.	60	B-31-02	Living Hall	Skirting	Timber specialist.
		**Defect Condition Assessment Category**			
		C	In-Complete Work		
		Type of Defect	Separation gap		
		Observation			
		Visible gap observed between timber skirting and marble			
		Cause of Defect			
		Inadequate adgesive applied.			
		Remedy Suggestion			
		1. Clean up the affected area free any dust and let dry. 2. Apply silicone sealant to fill the gap. 3. Wipe off excessive sealant before let it dries.			

Figure 40: Defect sheet

Below is the example of costing sheet to show the rate of the defects and their rectification suggestion (Figure 41). The rate or cost for rectifying is based on current prices from specific contractor. The price is also likely to change from time to time.

Ref No.	Photo No.	Location	Area	Element	Trade	Type of Defects	Observation	Building Condition Assessment Categ	Unit	Qty	Rate (RM)	Estimated Rectification / Replacement Cost Based on Current Market 2021 (RM)				Cause of Defect	Rectification Suggestion	Remark
												Very Critical Defec	General Defec	In-Complete Work	Non-Conformance Work			
B-31-02/C 	1	B-31-02	Entrance Court	Ceiling	Painter	Untidy	Inconsistent painting work for groove line.	In-Complete Work	m	1.50	11.00			16.50		Poor coordination and supervision during site work.	1. To clear the groove line surface from any debris or exessive plaster. 2. To apply one coat of Nippon Super Vinilex Eco 5000-145 white.	
B-31-02/C 	2	B-31-02	Entrance Court	Floor tiles	Tiler	Hollowness	Hollow sound when tapping	Non-Conformance Work	m²	0.18	294.00				52.92	1. Inadequate cement screed applied. 2. Shrinkage of cement screed forced losses.	1. Hack the affected and necessary floor border tiles. 2. Supply border tiles - Niro (GWV02) size 600x300mm. 3. Cut and lay tiles including cement screed and cement grout to match the existing.	
B-31-02/C 	3	B-31-02	Entrance Court	Marble												ment ement screed forced losses.	1. Hack the affected and necessary marble. 2. Supply and lay floor marble - Spain Marble (Crema Marfil) size 600x600mm including cement screed and cement grout. 3. Polish to match the existing.	
B-31-02/C 	4	B-31-02	Foyer	Main door	Door Installer	Scratch	Scratched mark observed on surface	Defect	nos	1.00	17.00		17.00			Effects from surrounding activities	To prepare surface and apply wood filler to match existing.	
B-31-02/C 	5	B-31-02	Foyer	Main door	Door Installer	Chipped off	Chipped off observed on surface.	Defect	nos	1.00	17.00		17.00			Effect from surrounding activities.	To prepare surface and apply wood filler to match existing.	

Figure 41: Example of costing for the defect

After the costing sheet is done, the defect will be analyzed to show the percentage of defects that occurs at the location. Figure 42 below shows the example of a pie chart for a defect analysis.

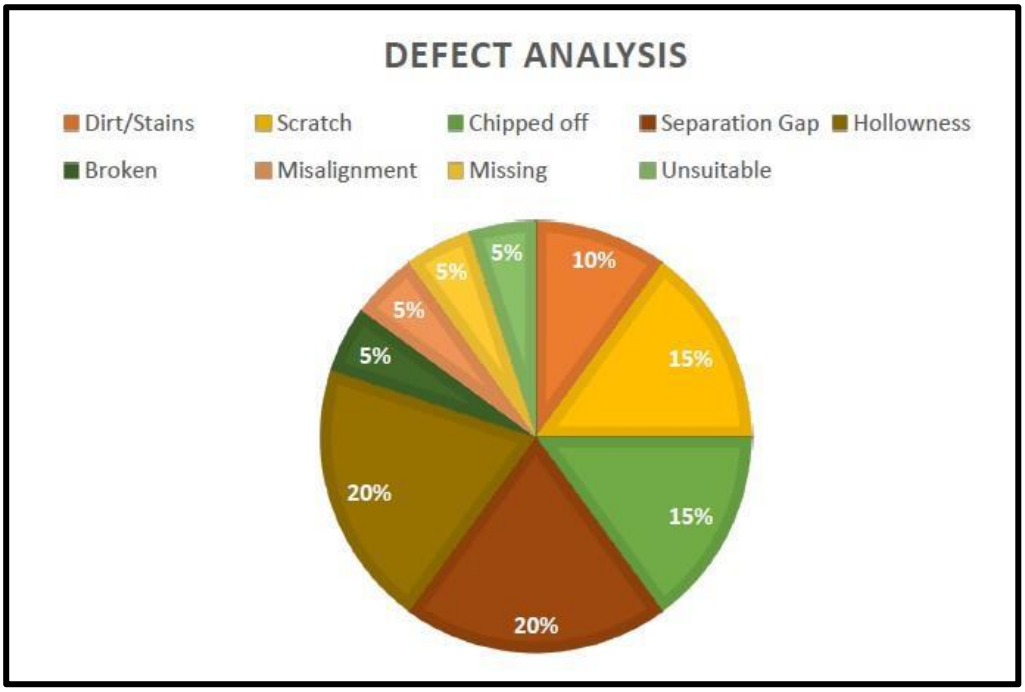


Figure 42: Example of pie chart for defect analysis

3.9 SUMMARY

This chapter has discussed in details about the Building Condition Assessment at the case study. Besides that, this chapter also has explained the method on how to carry out the inspection in the building according to the proper procedure and sequences.

Through this chapter, many types of defect that found at the case study can be identified and the remedies that suitable to treat the defects also can be figured out. This chapter is really help to improve the knowledge about the Building Condition Assessment and give the opportunities to learn more about the defects.

CHAPTER FOUR

PROCESS/ PROBLEMS IDENTIFY

4.1 INTRODUCTION

This chapter will explain in details about the problems that occur at the case study and the recommendation to fix every problem. Through this chapter also, it will encourage the student to think about how to overcome every problem that occur and automatically will show this industrial training also can teach the real life in work for building surveyor. Through this chapter, it shows that all problem that occur at the case study either the long term problem or the short term problem can be solve in proper ways.

4.2 PROBLEM AND RECOMMENDATION

Based on the inspection that carried out at the D'rapport Residence, Ampang, there are few problems that found during the inspection process. Besides, the suitable recommendation also are provided according to the problems identified.

1. No electricity in the units while conducting the inspection.

The first problem that identified is no electricity in the units during the inspection was carried out. Due to the building that vacant, the electricity only functioning at the certain area in the building. This is to avoid the wastage since D'rapport Residences is the large building that consisting many units and the inspection need to covering all the units in D'rapport Residences. Due to this problem, the surveyor from K & P Cove Consultancy Sdn. Bhd. facing a problem in identifying all the defects that exist in the unit because some areas in the unit are dark without natural lighting. As for the recommendation, the torch light or head lamp might be useful to overcome this problem. Besides, the surveyor may open the windows to allow ventilation and also conduct the inspection with a partner to avoid the risk of danger due to being alone.

2. Lifts were out of service.

The second problem that identified is lifts at D'rapport Residences were out of service. As this building consisting of 38 floors, it is quite difficult for the surveyors to reach one floor to another floor to carry out the inspection for every unit and this might take extra time since the surveyors need to access every floor. For the recommendation, the surveyors must use stairs to go to the required level and also the other initiative to prevent another problem is trying to avoid from being alone as all of the surveyors are not familiar with the building.

3. Safety and health during Covid-19 pandemic.

The next problem that identified is regarding the safety and health during Covid-19 pandemic. Since the inspection need to be carried out during the pandemic period, there are many procedure that need to be comply during the progress of the inspection. The surveyors and the parties involved need to consider all of the Standard Operating Procedure (SOP) that prescribed by the Ministry of Health of Malaysia to avoid any issue from arising which can cause the Covid-19 infections to become more prevalent. As for this problem, the suitable recommendation to overcome this problem is to ensure that all of the parties involved at the site or location should aware and practice to wear the face mask properly and to maintain social distancing. The other way is by practicing to wash hand often and use the hand sanitizer when needed. In short, all of the parties involved is required to follow the procedure properly.

4. Movement to site during pandemic.

The other problem that successfully identified is related to the movement to the site during pandemic. Since the government announcing the Movement Control Order (MCO) as the response to the Covid-19 pandemic, all traffic movement become relatively tight and fully controlled to prevent the spread of Covid-19. Due to this issue, it is become quite difficult for the surveyors to visit the D'rapport Residences for inspection because need to comply with current procedure. For the recommendation, the surveyor that involved with

the inspection must always alert and make sure to comply with the current information that related to the movement while the pandemic. The second thing is always remember to bring together with the permission letter during travelling to the site. This is very important to avoid any issues from arising which can cause the inspection process to be disrupted.

5. No escort during the inspection.

The last problem that identified is there is lack of person in charge that guide during the inspection work. Since the surveyors need to be separated into few teams to cover an overall units, there is an issue that occur where the person in charge from D'rapport Residences is not having an enough people to escort all the surveyor teams. The recommendation toward this problem is anyone related from D'rapport Residences should guide the surveyor to make the inspection to avoid any problems or they might take an initiative by providing the walkie-talkie to communicate with each other in order to ease the inspection process.

4.3 SUMMARY

In summary, this chapter has explained the problems that have been identified during conducting the inspection for Building Condition Assessment at the case study which is D'rapport Residences that located at Jalan Nipah, Ampang Hilir, 55000, Kuala Lumpur. Besides that, there are also some explanation about recommendation that can be used to fix each problems that occurs.

Through this chapter also, I have learn on how to look problem as the things that can be handle in a convenient way if we have a good cooperation and communication with our team and I also learn on how to find and create the solution for every problems.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter will be discussing related to the conclusion as well as the recommendations from this internship. Basically, the conclusion will be summarizing the related activities that carried out during the internship. Furthermore, the recommendations for the organization and for the university also will be stated in this chapter.

5.2 RECOMMENDATION

After 17 weeks of industrial training experience at K & P Cove Consultancy Sdn Bhd., some recommendation has arisen. My humble recommendation might be taken into consideration by the organization or university in order to improve the future management of students or the scope of work for the industrial training. Perhaps the recommendation that mentioned will give some ideas for the syllabus improvements.

5.2.1 To Organization

There is not much of recommendation that I would like to state, as I am a novice to this company. I would like to recommend to the organization to widen the advertisement regarding the opportunities to the students to do their industrial training here, especially for the Building Surveying students. This is because K & P Cove Consultancy provide an actual work experience which able to open the eyes especially in the field of building surveying. Other than that, I hope that the organization also can improves more on employee management which is by giving space so that they are not overly stressed with the workloads.

5.2.2 To University

A lot of new experience and knowledge I have gained during the 17 weeks of industrial training at the K & P Cove Consultancy Sdn. Bhd. I would like to suggest to the university, the faculty and the department to enhance the syllabus regarding the building surveying. This is to introduce the basics of building surveying in mere depth. This can enhance the knowledge for student before they undergo the industrial training with the organization. 17 weeks of industrial training period is a fairly long time which can polish the skill of the trainee and most likely they can be hired for work.

In addition, the university or department that involved should give more exposure to the student by conducting workshops, seminar or forum regarding the scope of work that the students might be join in future. The university or department that involved may invite or collaborate with the industry to provide early exposure to the field that might be involved as the Building Surveying has a wide scope of work that can be explored.

5.3 CONCLUSION

To conclude, this internship has been an excellent and rewarding experience because there are many new things that I can gained. I can conclude that there have been a lot I have learn from my work at K & P Cove Consultancy Sdn. Bhd. Through the project that I have choose to be included in this report, which is Building Condition Assessment (BCA) for typical strata residential unit, I am able to experience the real inspection progress in real work environment and many things I can learn from the surveyors. Basically, it is important to know the inspection procedure before conducting the inspection in order to ensure that we can deliver the best services for our client and provide them with a good outcome. Through the proper planning, the surveyors are able to complete the tasks in required time. Even though there are some problems that occurs during the inspection progress, the surveyors are able to manage the problems properly. Through this situation, I also learn in handling the problems in a proper manner. Needless to say, the aspects of the work I have done may not perfect, however it could be improved and it is one of the best learning process. As someone with no prior experience, I am grateful for the opportunity to be one of team at K & P Cove Consultancy Sdn. Bhd. throughout my internship period.

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APPENDICES

SITE PHOTOS

D’rapport Residences (View 1)

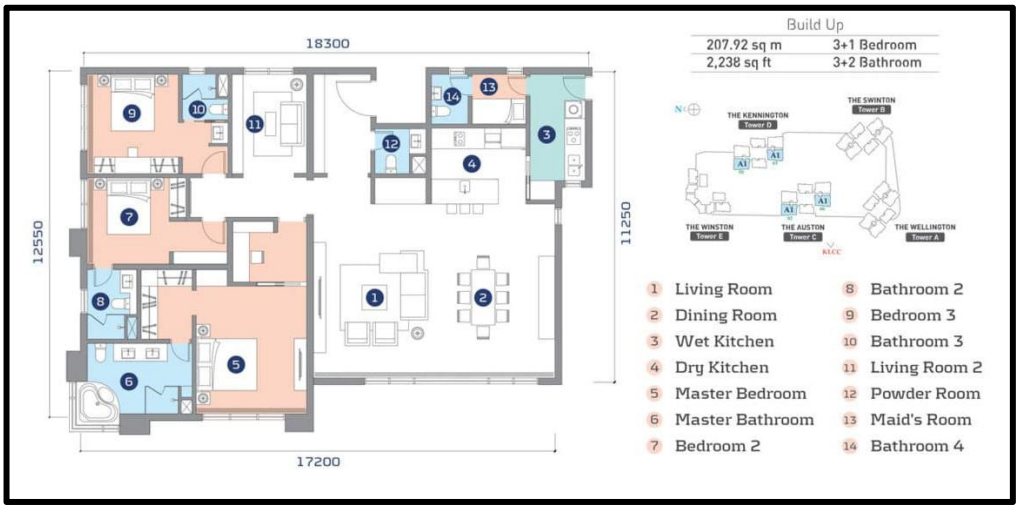
D’rapport Residences (View 2)

D’rapport Residences (View 3)

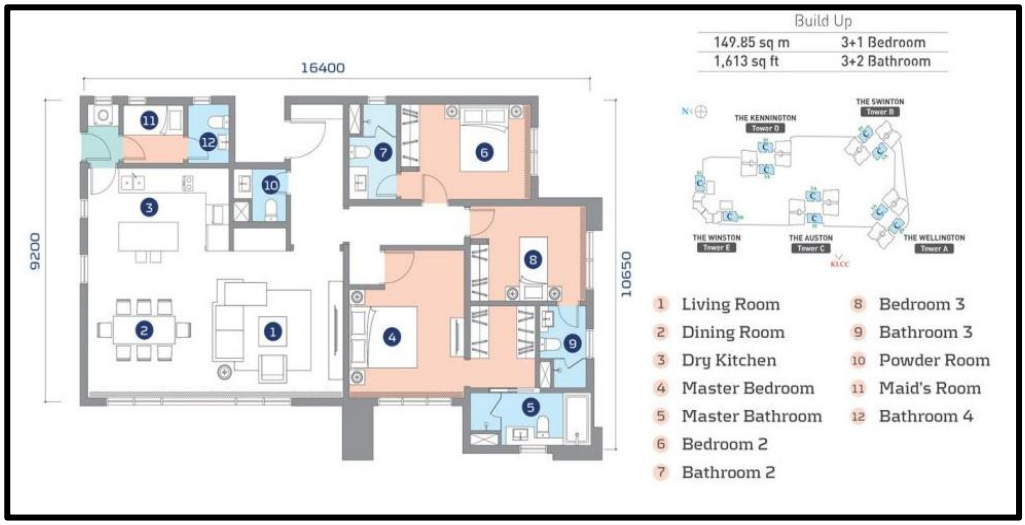

D’rapport Residences (View 4)

LAYOUT PLAN

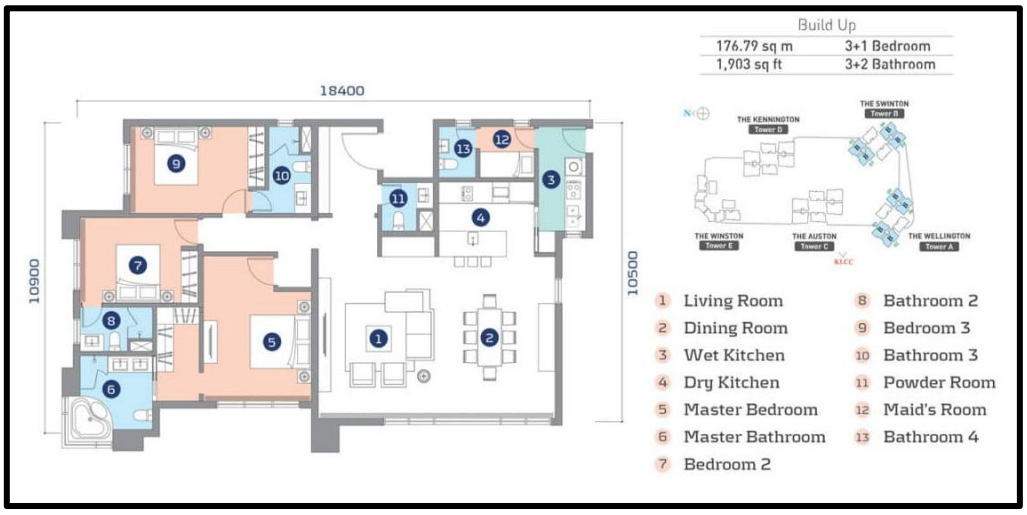
Type A1 unit



Type A2 unit



Type B unit



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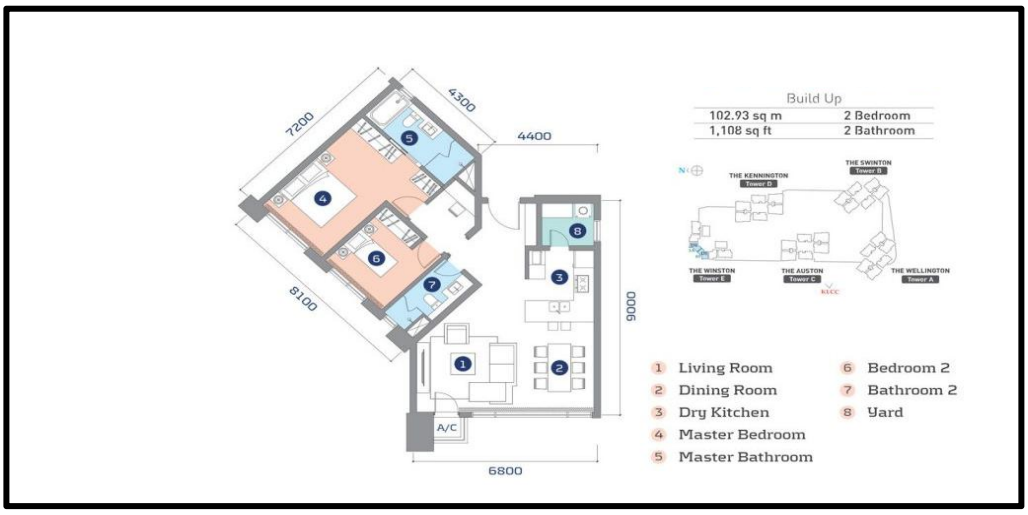
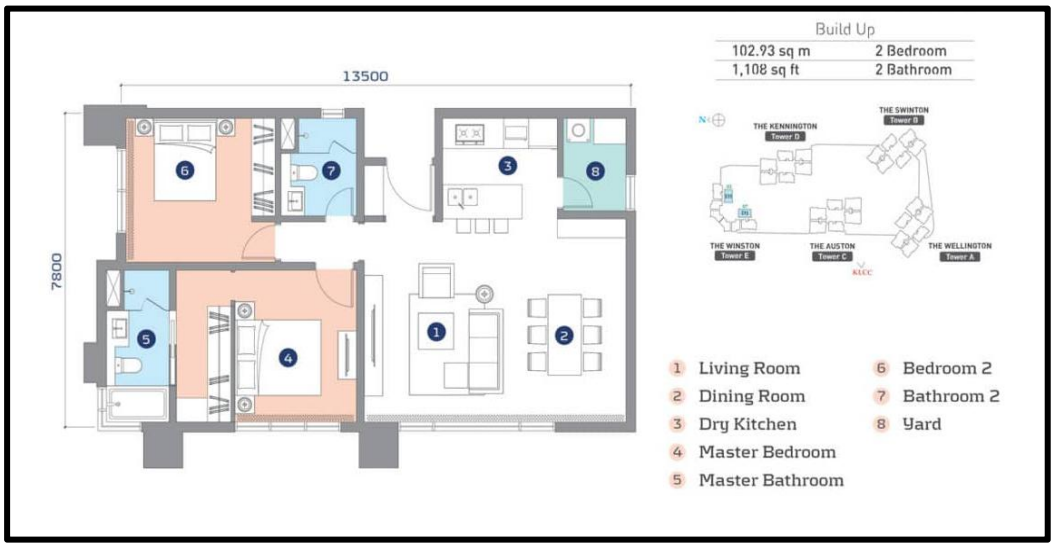


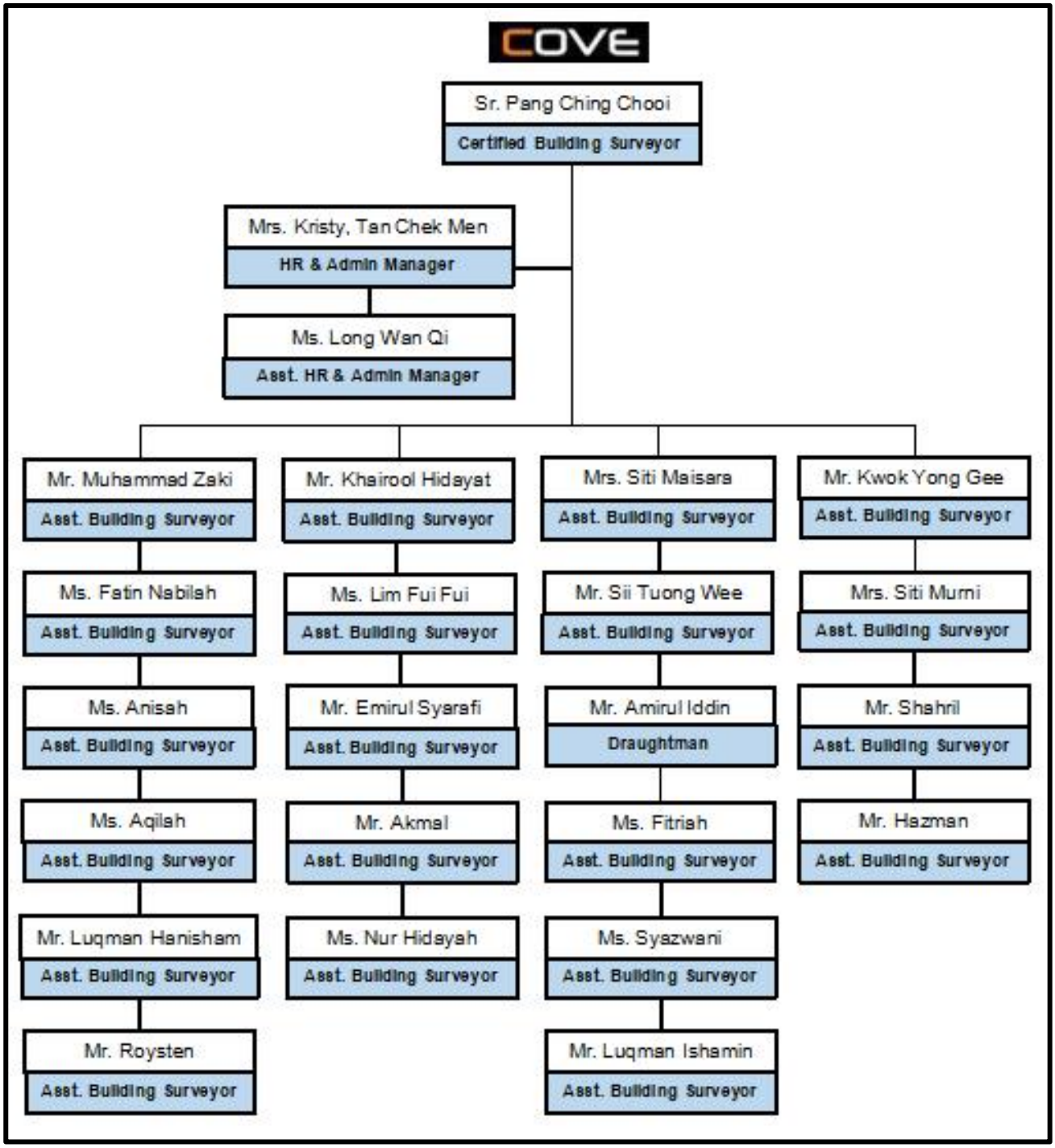
Type D1 unit

Type D2 unit


13500
7800
Build Up
102.93 sq m
1,108 sq ft
2 Bedroom
2 Bathroom
THE KENNINGTON
Tower D
THE SWINTON
Tower B
THE WINSTON
Tower E
THE AUSTON
Tower C
THE WELLINGTON
Tower A
KLCC
1 Living Room
2 Dining Room
3 Dry Kitchen
4 Master Bedroom
5 Master Bathroom
6 Bedroom 2
7 Bathroom 2
8 Yard

Type D3 unit

ORGANIZATIONAL CHART



DEFECT LIST

UNIT :
FILE NAME :

NO	TYPE OF DEFECT	REMARK

DEFECT SHEET

Ref No.		Location	Area	Element	Trade
Photo No.					
		Defect Condition Assessment Category			
		Type of Defect			
		Observation			
		Cause of Defect			
		Remedy Suggestion			

Ref No.		Location	Area	Element	Trade
Photo No.					
		Defect Condition Assessment Category			
		Type of Defect			
		Observation			
		Cause of Defect			
		Remedy Suggestion			