**DEPARTMENT OF BUILDING**

**UNIVERSITI TEKNOLOGI MARA**

**(PERAK)**

# PREPARATION OF DILAPIDATION REPORT

**Prepared by:**

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**FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING**

**UNIVERSITI TEKNOLOGI MARA**

**(PERAK)**

**FEBRUARY 2022**

It is recommended that the report of this practical training provided

**By**

**MARYAM NAJIBAH BINTI MUA'ANAFF**

**2019427734**

**entitled**

**Preparation of Dilapidation Report**

be accepted in partial fulfillment of requirement has for obtaining Diploma in Building.

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**DEPARTMENT OF BUILDING**

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**FEBRUARY 2022**

## STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Jasa Sendi (M) Sdn Bhd for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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UiTM ID No : 2019427734

Date : 10 JANUARY 2022

## ACKNOWLEDGEMENT

Alhamdullillah, praise to Allah, the Most Merciful, the Most Graceful.

I would like to express my gratitude for the infinity knowledge, guidance and advice that I have received throughout the period of practical at Jasa Sendi Sdn. Bhd. First and foremost, I would love to thank to Dr. Ahmad for giving me the opportunity to work at his company. I am also grateful for having a chance to meet so many wonderful and professional people who have led me through this internship period. Also, special thanks to my supervisor Miss Shahira who always guide me everytime we are at the site and always share her knowledge on how to run the project and make a good report. I feel honored as I have enable to learn, develop my knowledge and feel like it was a real time of project. By attending the site, I'm able to enhance my ability in understanding the method on how to detect any defect in an exist building according to the right speculation. For me, it was something new to learn and can be practiced in the future.

I convey my sincere gratitude to ALL the UiTM lecturers who have taught and nurtured me in becoming a better person with full of knowledge. I would also like to extend my deepest appreciation to the lecturers who are directly involved during my training stint. To Cik Jannatun Naemah Binti Ismam, Supervising Lecturer, Ts. Wan Nur Syazwani Binti Wan Mohammad, Evaluation Lecturer, Dr. Nor Asma Hafizah Binti Hadzaman, Practical Training Coordinator and Dr. Dzulkarnaean Bin Ismail, Programme Coordinator, I value the time, effort, encouragement and ideas that they have contributed towards the successful completion of my training, this report and the valuable knowledge that have been shared over the last few semesters.

Last but not least, my special thanks to my beloved parents for their sacrifices over the years.

Thank you so much.

## ABSTRACT

Dilapidation survey is an inspection of the existing structural condition for the structures and also its surrounding before the commencement of a construction, development or repairs. This surveying will be performed when the existing building have a lot of defect that need to be repaired or changed where it has to be done for every building that exist in this world as a treatment to maintain the building's condition and to protect the residents. This survey can be done either for new building or used building. The scope of work for this survey is inspecting the building's defect and combine it together in one report before handed it to the client for further action.

The objectives of this report is to identify the process of data collection before producing a dilapidation report. Data collection will be the first stage on producing a report as all the information then will be used as a references. Secondly, to demonstrate the procedure of preparing a dilapidation report. In this part, every report must have its own way according to the company's procedure. Therefore, the procedure of preparation is included as one of the objectives that need to be full filled. Lastly, to determine the common mistakes while preparing a dilapidation report. Common mistakes are mostly due to the incorrect formatting as well as incorrect data collection.

To summarize this study, producing a report takes a lot of process as it will include many data of defects and also the suitable remedy for each defects. Its need a lot of research to produce a right information for the contractor as well as the client. This study helps a lot on learning how to handle a dilapidation survey and producing a report. In addition, through out the whole process on surveying, there is a lot of defects that can be found and known. It was such a good knowledge that I have been learned.

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# CHAPTER 1.0

# INTRODUCTION

## 1.1 Background of Study

Defect can be classified as a building flaws or side effects that could impact the building structure that is cause by the natural disaster. The defect, if it is not be treated, it might decrease the building's life span. Therefore, a simple crack also need to be calculated as it may getting bigger from time to time (Jaspal Singh,2021). There are some common building defects that usually can be found during inspection. For example, crack on walls which is vertical crack, horizontal crack, crack line. Peeling paint, Dampness, Broken, Gap, Timber decay, Termite attacks, Small plant attack. Moreover, for the missing piece like the tiles, window glasses and other part of the building elements (Nadia,2014).

Dilapidation Survey is also known as Building Condition Assessment where the inspector are incharge to check the building condition by conducting some necessary investigation to produce an appraisal report. This report will consist the observation, discussion, recommendations and some relevant conclusion if needed (IPM,2021). Usually, during inspection, the inspector will focus to the roofs, walls, floors, toilets and ceiling first as it was the common defect places that can be found. Other than that, it will be the apron, drain, door, window and other part that need to be repair or replaced (Nadia,2014).

Last but not least, the aim of this study is I wanted to learn the process on how to run a dilapidation survey and how all the data in the report are collected. Therefore, I could also discover the right ways on how to produce a report in a real time project. Even writing a report is already learned through the whole semester but there must be the difference between university report and company report. Therefore, this is the best opportunity to learn the right ways to produce the best report.

## 1.2 Objectives

i) to identify the process of data collection before producing a dilapidation report
ii) to demonstrate the procedure of preparing a dilapidation report
iii) to determine the common mistakes while preparing a dilapidation report

## 1.3 Scope of Study

This study is about an inspection work where it will be focusing on checking the building condition and make an assessment. Therefore, in this study the thing that will be studied is only on the inspecting and reporting. This study is taking about six(6) month where the population that is being studied is the types of the defect since there are a lot of defect that exist and also new defect can also be found during the inspection work. Other than that, drawing a plan in the Microsoft Word also a new thing to learn therefore it will also be included in this report. The location of this study is depends on the type of work that is done. For example, if the inspection work is done, then every inspector will go to the site but for reporting it is only be done at the office. Inspection work is run by using crack comparator and measuring tape where both of this tool is used to measure the size and length of the defect.

## 1.4 Methods of Study

This method study is explains various method that has been used in gathering all the data which is relevant to the research. This method will include some literature and article review. Other than that, in this study, some interviews and some documents review are also included to gain more knowledge and to toughen the studies. Below are the method that are very useful on perfecting this studies.

i) Literature review

Literature review is a main method used in this studies as there were a lot of article that is related to the dilapidation survey. The fact that a sustainable strategy must be adopted for the entire life cycle of a building starting from the design and construction to operations and maintenance of structures and along with the comfort quality or the residents should be considered. In addition, the physical conditions and management factors contribute equally to determine the performance of a building (T.Saranya,2017). Based on this article, dilapidation survey is important as it was like a treatment to the building. Therefore, every building must do the dilapidation survey to maintain the quality of the building.

ii) Interview

During the interview, there are various type of question that has been asked. First question that has been asked is definitely about the inspection work since before producing the dilapidation survey, an inspection work must be done to produce a data. The interview is done while running the inspection where I will ask the question directly to my supervisor, Nor Shahira Binti Ahmad Termizi also known as Kak Ira. While doing the inspection there must be a lot of question that will be asked since this is new to me and I need to learn more about it. From the question that I have been asked, it helps on understand the assessment that I have been work for. Below is some question that has been asked during the interview and all of those answers will be used in completing this report as all of the question is related with the title of this report.

iii) Document review

In preparing this studies, the documents that has been viewed is the company's profile documents as in there, all of the company's information can found. Other than that, before doing the interview, some documents has been reviewed. The documents are the 'example of the report', 'the mistake detected in reports' and 'list of defect'. These are the document that can be found and used on preparing the studies. By reviewing those documents, it helps a lot on gaining more knowledge especially in dilapidation survey.

iv) Measurements made

In making a dilapidation survey, the measurements used is the "B.A.R.I.S System" where in this system all the defect condition will be divided into five colour according to its severity. The colour is blue, green, yellow, orange and red where the red is the worst condition. Therefore, this colour will be combine together and the inspector will find its average to obtain the overall condition of the building. This is important as if the results shows a bad result then the consultant will tell the owner to hired any contractor to repair their building.

# CHAPTER 2.0

# COMPANY BACKGROUND

## 2.1 Introduction of Company

Jasa Sendi (M) Sdn. Bhd. is established in 1993 by Prof. Sr Dr. Ahmad bin Ramly. He has received Fellowship from Royal Institution of Surveyors (Malaysia), Society of Professional Engineers (UK) and also Chartered Association of Building Engineers (UK). In addition, he is also a Professional Member of the Royal Institution of Chartered Surveyors and Chartered Institute of Building (UK). Before he become a Professor in the Faculty of Built Environment at Universiti Malaya, Dr. Ahmad was a senior in managerial and technical officer at Kuala Lumpur City Hall. He can be called as a professional and qualified surveying practitioner by his qualification and experience as he got more than 37 years of working and teaching experiences.

Jasa Sendi (M) Sdn. Bhd. (JSSB) is a Chartered Surveying Firm and provides professional services in the:

(i) Building Surveying / Building Engineering Consultancy Works: in the field of building inspection, dilapidation survey (building condition assessment – BCA), building audit, conservation, maintenance, restoration, refurbishment, performance assessment and project management.

(ii) Built Environment: in the field of sustainable & green architecture, environmental impact assessment, buildings and historic places conservation and maintenance, renewal, recycle and solar energy planning.

Jasa Sendi (M) Sdn. Bhd. provides an excellent practice and services to comply the present building laws, regulations, guidelines and serves professionally with the concept of "Value of Money" for the clients. According to the concept, it is used to ensure that the clients will receive good surveying reports, better features of buildings condition and predictable return of building asset investments. JSSB clients are the local authorities, government agencies, housing developers, property and building owners, property buyers, contractors, management corporation bodies, joint management boards, and others who is intended in providing good services in building care,

maintenance, facilities management, preservation and restoration to receive a safe and healthy buildings.

Figure 2.1 : Company Logo

Based the figure above, it is shown Jasa Sendi (M) Sdn. Bhd logo where the meaning of the logo is ‘Grow With Value for Money Concept and Excellent Service for Clients’. The logo itself has illustrate the main concept of the company.

## 2.2 Company Profile

Figure 2.2 : Company Logo

| | |
|---|---|
| Company's Name | : JASA SENDI (M) SDN BHD (JSSB) |
| Business / Service Type | : Building Consultant and Inspection |
| Registration Number | : 264854-H |
| Registration Date | : 24th May 1993 |
| Registered Address | : No. 177, Jalan Jasa 14, Taman Jasa, 68100 Batu Caves, Selangor Darul Ehsan. |
| Current Address | : No. 15A, Jalan SG 3/16, Pusat Bandar Sri Gombak, 68100 Batu Caves, Selangor Darul Ehsan. |
| Telephone Number | : +603-61887398 |
| Facsimile Number | : +603-61867389 |
| E-mail : | : jasaconsult@yahoo.com |

## 2.3 Company Organization Chart

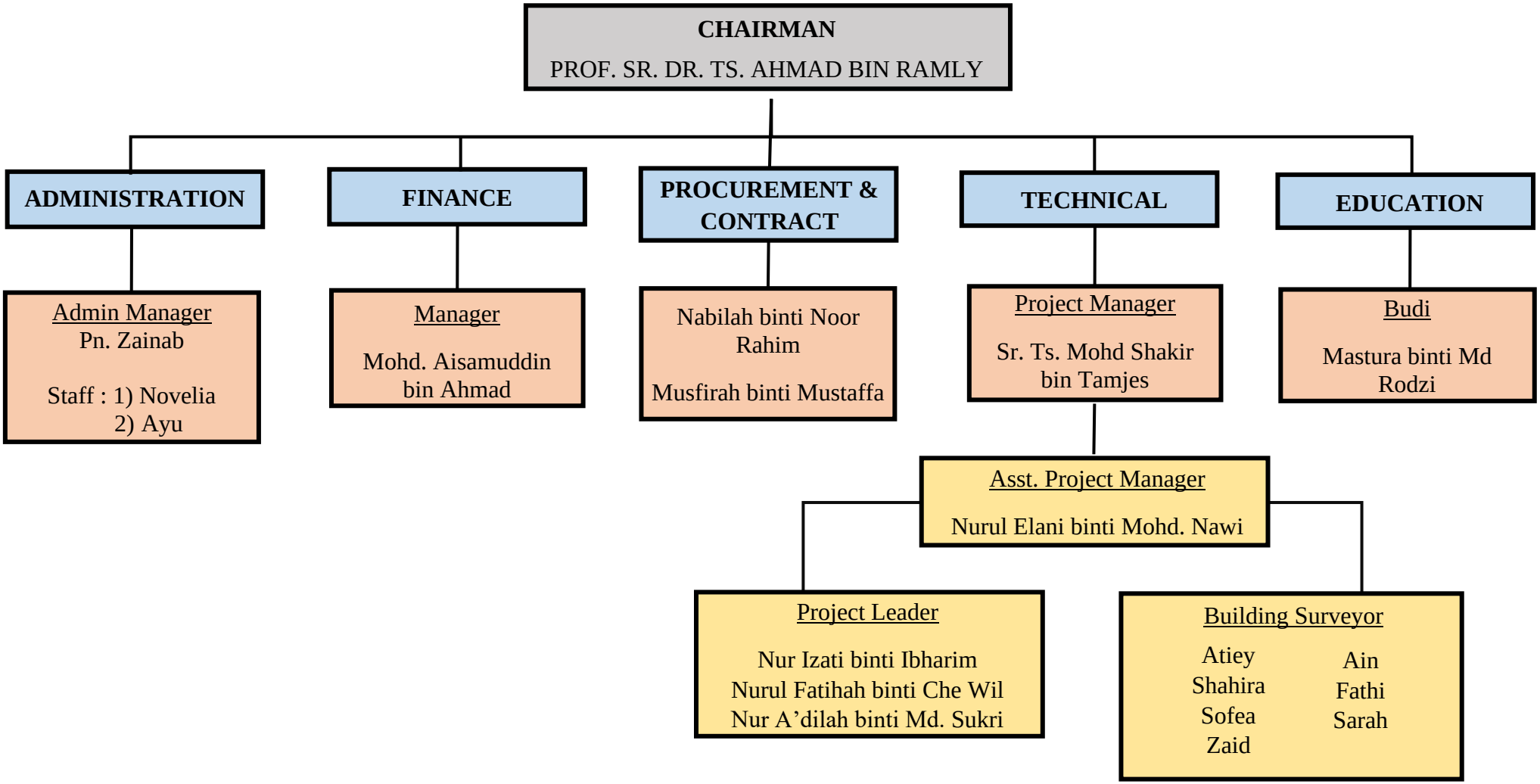
Director of JASA SENDI (M) SDN BHD

Figure 2.3 : Director of Jasa Sendi

Personal Data

| | |
|---|---|
| Full Name | : PROF. SR. DR. AHMAD BIN RAMLY |
| Address | : 177 Jalan Jasa 14, Taman Jasa, 68100 Batu Caves Selangor |
| Place of Birth | : Parit, Perak |
| Telephone Number | : 6013-371 1098 |
| E-mail | : drabr@msn.com |

**Organization Chart**



## 2.4 List of Projects

### 2.4.1 Completed Projects

| No. | Project Title | Completion Date | Client |
|---|---|---|---|
| 1 | Dilapidation Survey For “Cadangan Pembinaan Loji Rawatan Kumbahan Serantau dan Rangkaian Paip Pembentungan. | September 2020 | Restu Warisan Sdn. Bhd. |
| 2 | Post Dilapidation Survey For Projek Penswastaan Lebuhraya Bertingkat Sungai Besi. | September 2020 | Syarikat Muhibbah Perniagaan & Pembinaan Sdn. Bhd. |
| 3 | Dilapidation Survey For EON Mart Sdn Bhd Melaka. | September 2020 | Edaran Otomobil Nasional Berhad |
| 4 | Post Dilapidation Survey Works For Execution and Completion of The Proposed Construction and Affiliated Works. | October 2020 | Restu Warisan Sdn. Bhd. |
| 5 | Dilapidation Survey For “Advanced Work Package AW1A, AW1B, AW1C and AW1D: Design and Build of Installation, Testing and Commissioning of TNB Pylon and Overhead Transmission Line Relocation for Light Rail Transit Line (LRT3). | October 2020 | Huls Transmission Sdn. Bhd. |

| | | | |
|---|---|---|---|
| 6 | Building Condition Assessment: Dilapidation Survey for "Projek Jalan dari Kg. Sg. Batu, Bandar Baharu melalui Kg. Sg. Pasir ke Ladang Dubin. | September 2020 | Perbudi Sdn. Bhd. |
| 7 | BCA: Dilapidation Survey for "Cadangan Meroboh Bangunan Sedia Ada. | September 2020 | Gurori Sdn. Bhd. |
| 8 | BCA: Dilapidation Survey for Proposed Development On Lot 912 and Main Access On Lot 33745. | March 2020 | Pertubuhan Kebajikan Kebangsaan Mangsa-Mangsa Pemaju Pembina Malaysia |
| 9 | BCA: Dilapidation Survey for Proposed Integrated Water Supply Scheme (IWSS). | January 2020 | Leika Sdn. Bhd. |
| 10 | Dilapidation Survey For "Construction and Completion of Light Rail Transit Line 3. | January 2020 | Gabungan Strategik Sdn. Bhd. |
| 11 | BCA: Dilapidation Survey for "Kerja-Kerja Menaktaraf Sistem Saliran. | December 2019 | Zam's Enterprise |
| 12 | BCA: Dilapidation Survey for "Cadangan Membina Sebuah Masjid Terapung Satu Tingkat Beserta Sebuah Minaret. | December 2019 | Stramas Sdn. Bhd. |
| 13 | BCA: Dilapidation Survey for Proposed Construction and Affiliated Works. | December 2019 | Strength Wheel Construction Sdn. Bhd. |
| 14 | BCA: Dilapidation Survey for Proposed Integrated Water Supply Scheme (IWSS). | November 2019 | Leika Sdn. Bhd. |

| | | | |
|---|---|---|---|
| 15 | Post Dilapidation Survey for Projek Penswastaan Lebuhraya Bertingkat Sungai Besi. | November 2019 | Syarikat Muhibbah Perniagaan dan Pembinaan Sdn. Bhd. |
| 16 | BCA including Mechanical & Electrical services and Interior Design for Celcom Axiata New Corporate Office. | November 2019 | CB Global Corporate Services Sdn. Bhd. (CBRE) |
| 17 | BCA: Dilapidation Survey for Execution and Completion of The Proposed Construction and Affiliated Works for " Cadangan Menaiktaraf Persimpangan Bertingkat Kempas Sediaada" | September 2019 | Southern Diggers Enterprise Sdn. Bhd. |
| 18 | Building Dilapidation Survey for Loji Rawatan Kumbahan Serantau dan Rangkaian Paip Pembentungan. | August 2019 | Loyal Engineering Sdn. Bhd. |
| 19 | BCA: Dilapidation Survey for Audi Damansara | August 2019 | Euromobil Sdn. Bhd. |
| 20 | BCA: Dilapidation Survey for Proposed Integrated Water Supply Scheme (IWSS) Bukit Mayong for The Proposed Development In Puncak Alam. | August 2019 | Leika Sdn. Bhd. |
| 21 | Building Dilapidation Survey for 46-46A | August 2019 | Red Square Development Sdn. Bhd. |
| 22 | Post Dilapidation Survey for Pembangunan Infrastruktur Sistem Saliran Jajaran R1 & R2A Untuk Kompleks Bersepadu Petroleum Pengerang (PIPC). | August 2019 | Meridian Contracts Sdn. Bhd. |
| 23 | Building Dilapidation Survey for Mont' Kiara Pines. | August 2019 | Mont' Kiara Pines Management Corporation |

| | | | |
|---|---|---|---|
| 24 | Building Dilapidation Survey for Parcel No. N-05-01, Storey No.05, Empire City. | June 2019 | Viknesh &Yap Advocates Solicitors |
| 25 | Building Dilapidation Survey for Proposed Integrated Water Supply Scheme (IWSS). | June 2019 | Leika Sdn. Bhd. |
| 26 | Building Dilapidation Survey for Proposed Slope Rehabilition and Protection for Arab Malaysian Industrial Park. | May 2019 | DBT Sdn. Bhd. |
| 27 | Building Dilapidation for No.1. | March 2019 | Mr. Robin |
| 28 | Post Dilapidation Survey for Projek Infrastruktur dan Kemudahan Awam Bagi Pembangunan Kompleks Petroleum Bersepadu Pengerang. | March 2019 | Southern Diggers Enterprise Sdn. Bhd. (JKR) |
| 29 | Building Dilapidation and Health & Safety Inspection for Quadro Residences. | March 2019 | Perbadanan Pengurusan Quadro |
| 30 | Building Dilapidation for Damansara Perdana, Lot 72087, 72102 & PT 48532. | January 2019 | Aset Kayamas Sdn. Bhd. |
| 31 | Remeasurement of Facade Quantity for Sapura Group Building. | November 2018 | Sapura Resources Sdn. Bhd. |
| 32 | Building Dilapidation for Cadangan Pembangunan. | November 2018 | MCT Berhad |
| 33 | Building Dilapidation for Cadangan Membina Sebuah Kompleks Plaza Tol. | November 2018 | JBS Engineering Sdn. Bhd. |

| | | | |
|---|---|---|---|
| 34 | Building Dilapidation Survey and M&E Inspection for Serai Bukit Bandaraya. | November 2018 | JMB Serai Bukit Bandaraya |
| 35 | Post Dilapidation Survey for Pakej D49: Pembinaan Rangkaian Paip Pembentungan. | November 2018 | Jabatan Perkhidmatan Pembentungan |
| 36 | Building Dilapidation for Cadangan Pembinaan Langat Centralised Sewage Treatment Plant & Penyambungan Rangkaian Paip Pembentungan. | September 2018 | Jabatan Perkhidmatan Pembentungan |
| 37 | Building Dilapidation Survey for Projek Infrastruktur dan Kemudahan Awam bagi Pembangunan Kompleks Petroleum Bersepadu Pengerang. | August 2018 | Southern Diggers Enterprise Sdn. Bhd. (JKR) |
| 38 | Building Inspection Including M&E Inspection for 5 Storey Commercial Building. | August 2018 | Advance Synergy Realty Sdn. Bhd. |
| 39 | Building Dilapidation Survey for Cadangan Membina Apartment Rumah Selangorku | July 2018 | MCT Berhad |
| 40 | Building Dilapidation for Cadangan Pembangunan 1 Blok Kondominium 37 Tingkat. | July 2018 | EK Build Sdn. Bhd. |
| 41 | BCA: for Cadangan Membina Sebuah Gudang dengan Pejabat 5 Tingkat. | May 2018 | Smart Tech Sales & Services |
| 42 | Building Dilapidation and Inventory Survey for No. 54. | May 2018 | Dato Loh Siew Cheang |

| | | | |
|---|---|---|---|
| 43 | BCA: for Pembangunan Infrastruktur Sistem Saliran Jajaran R1 & R2A. | May 2018 | Meridian Contracts Sdn. Bhd. |
| 44 | BCA: for Residensi PR1MA Kuala Ketil. | April 2018 | Perbadanan PR1MA Malaysia |
| 45 | BCA: for Cadangan Pembinaan Klinik Kesihatan. | April 2018 | Pembinaan SPK Sdn. Bhd. |
| 46 | BCA: for Cadangan Membina Skim Perumahan Secara 'Guarded and Gated Community'. | April 2018 | MCT Berhad |
| 47 | BCA: for Cadangan Pembinaan Hospital Swasta (95 Katil). | March 2018 | Kombinasi Bakti Sdn. Bhd. |
| 48 | BCA: for Construction and Completion of Half Diamond Interchange and Elevated 'U' Turn. | March 2018 | Eco Ardence Sdn. Bhd. |
| 49 | BCA: for Cadangan Menaiktaraf dan Tambahan Rumah Gabungan Persatuan Penulis Nasional Malaysia (GAPENA). | February 2018 | KH Persada Venture Sdn. Bhd. |
| 50 | BCA: for Cadangan Jalan Susur Masuk Sementara ke Tapak Cadangan Pembangunan Bercampur Perumahan dan Perniagaan. | February 2018 | Eco Ardence Sdn. Bhd. |
| 51 | BCA: for 2 Units Condominium at Icon City. | January 2018 | Mr. Nidthia C. |

2.4.2 Project in Progress

| No. | Project Title | Completion Date | Client |
|---|---|---|---|
| 1 | Kerja-Kerja Membaikpulih dan Naiktaraf Bangunan Lembaga Getah Malaysia. | In Progress | Lembaga Getah Malaysia |
| 2 | Measured Drawing for “Blok Wanita dan Kanak-Kanak Hospital Pulau Pinang”. | In Progress | RD Resources Sdn. Bhd. |
| 3 | Dilapidation Survey for “Cadangan Membina dan Menyiapkan Unit Rumah” | In Progress | Msn Construction Sdn. Bhd. |
| 4 | BCA: Pre-Dilapidation Survey for “Cadangan Pembangunan 50 Unit Rumah Teres” | In Progress | Msn Construction Sdn. Bhd. |
| 5 | BCA: Building Condition Inspection for Cadangan Membina dan Menyiapkan 1 Unit Rumah Kediaman. | In Progress | Nor Ashirin Bt Hashim |
| 6 | BCA: Perkhidmatan Perundingan bagi Rekabentuk Terperinci Pembangunan Lembangan Sungai Bersepadu. | In Progress | Perunding Teknik Padu Sdn. Bhd. |
| 7 | BCA: Perkhidmatan Perundingan bagi Rekabentuk Terperinci Rancangan Tebatan Banjir Lembangan Sungai Pinang. | In Progress | Nexus EC Sdn. Bhd. |
| 8 | BCA: Dilapidation Survey for Construction and Completion of Light Rail Transit Line 3 (LRT3) | In Progress | Gabungan Strategik Sdn. Bhd. |

| | | | |
|---|---|---|---|
| 9 | BCA: Building Condition Inspection For 28 Units Double Storey Houses at Jalan Keruing 8/2, 43000 Kajang. | In Progress | MSN Construction Sdn. Bhd. |

# CHAPTER 3.0

# PREPARATION OF DILAPIDATION REPORT

## 3.1 Introduction of Dilapidation Report

First of all, for this preparation of dilapidation report, I am going to include the project from Lembaga Getah Malaysia (LGM) as an example for further explanation on how to produce a dilapidation report after running the inspection work. Lembaga Getah Malysia has appointed Jasa Sendi consultants to do the dilapidation survey to every building that was inside the Lembaga Getah Malaysia area for repair purposes.

The main purpose of the dilapidation report is to convey information of the defects detected during the inspection where every inspection data will be compiled together for further action. This is really important as the report later will be given to the contractor as a references for repairing work. Usually, report will be given to client in a hard copy because it can avoid the report from missing.

Dilapidation report is made to describe the analysis of any issue or problem for any building that was included in the project. The inspector will running an inspection work where we will detecting any defect and make an analysis from the defect detected. The analysis then will be transfer into a report to obtain the overall buildings condition afterwards.

Last but not least, in the report, the consultant will be providing a remedy recommendation where it could help the contractor to do any further action according to its suitability. Finally, a reports need to be written clearly so that all the information that need to be conveyed is understandably especially to the client and the contractor.

## 3.2 Data Collection before Producing a Report

Before preparing a report, data collection will be the first step that need to be settled before moving on to the report part. Therefore, in collecting data there will be some stuff that need to be prepared for which is the appliances such as the inspection form, camera, measuring tape, and crack comparator. Other than that, an inspector also need to know about the types of the defect since there were ton of defects can be found during inspection. Besides, by knowing the types, other information also must be proficient as all the information then will be used in producing a report.

### 3.2.1 Preparation for Inspection Works

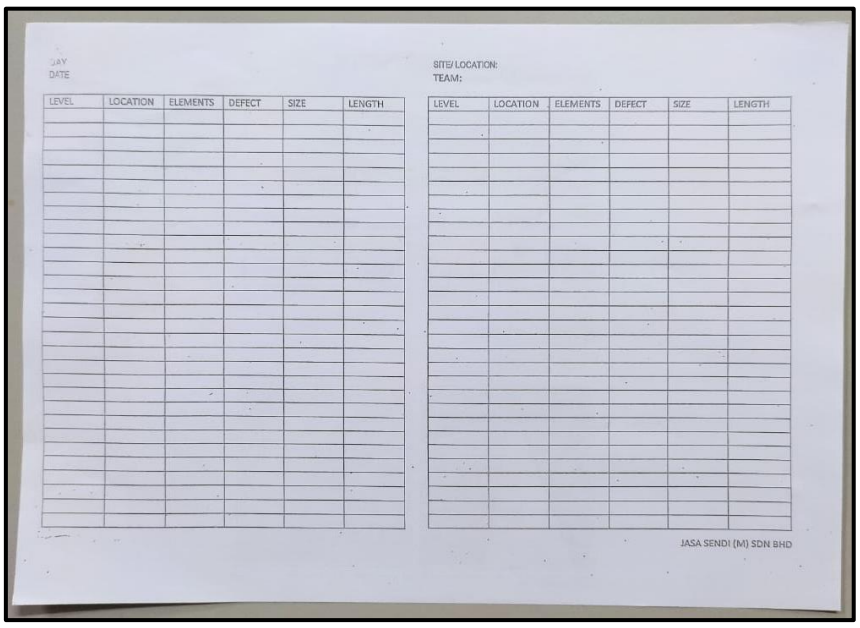



Figure 3.1 : Inspection Form

Based on the figure above, it is shown an inspection form where it will be bring along during the inspection work as all the defect detected will be write into it. Starting from the level where it will be the level of the defect detected such as ground floor, first floor, second floor and etc. But if the building is a high rise building then the floor will be change to 'level' which is first level, second level and ahead. Next, the location is the location of defect detected. Usually, the name of the room or the space will be stated. Moving on to the element. The element part is the wall, floor, ceiling, apron, drain and etc. Last but not least is the defect. Basically, the inspector should have be master with

all the defect's type as there are so many types of defect where sometimes it could give confusion to inspectors. Lastly is the size and length. The size for gap or crack as the size will be measured by using 'Crack Comparator'. If the defect was a broken type, then it will be measured by taking its area. Length is based on the defect length.


Figure 3.2 : Camera

Figure 3.2 shows a camera that will be use during collecting data where picture of each of the defect detected will be taken. Basically the picture taken will be in two types of picture which is the zoomed picture and the picture from afar. All the picture taken must be clear and easy to refer as it will be inserted into the report for contractor or client references.

Figure 3.3 : Clipboard

Figure 3.3 is shown a clipboard that will be bring along during inspection work as the inspector will use this clipboard as linings because it can help the inspector filling the form comfortably. In addition, we also need to sketch the building floor plan directly during the inspection. Therefore, clipboard is a must as it can ease the process of sketching and also taking data.


Figure 3.4 : Measuring Tape

Figure 3.4 shows a measuring tape that will be used by the inspector to measure the length or an area of the defect. This is important to get an accurate data because if the data is not taken correctly then it will affect the report and also can give confusion to the contractor.

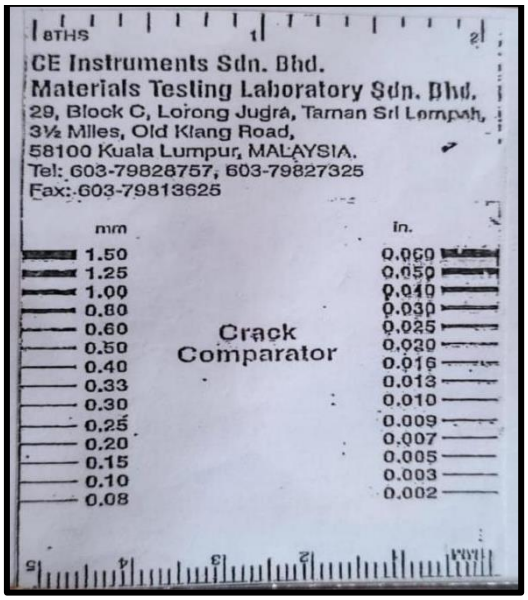



Figure 3.5 : Crack Comparator

Based on the figure above, this is a crack comparator where each of the inspector must have this scale. It is very helpful as it can fasten the process of measuring. Other than that, we could also use this scale even the size is more than 1.50mm as at the bottom of the scale there were a ruler that is specially made for bigger size of crack and gap.

Figure 3.6 : Safety Vase

Figure 3.6 shows a safety vase that will be worn by all the inspector while running the inspection work. This vase need to be wear as it was a sign that we are in duty. If this safety vase is worn, then we are allowed to enter every single spaces that available in that area without having any problem.

Figure 3.7 : Safety Boots

Figure 3.7 is shows a pair of safety boots. Every inspector must have a pair of safety boot before being allowed to step into the site or joining the inspection work. The reason to wear a safety boots is to protect the foot from any injury. In inspection work, sometimes the inspector need to enter the bush area. Other than that, if the project is to inspect some dilapidated building for repair purposes, then we will encounter some type of space that is in a very bad condition. Therefore, safety boots are really important to keep the inspector from getting injured.

### 3.2.2 Types of Defects

Below are some defect that commonly be found during the inspection :

| Defect | Figure |
|---|---|
| Crack line, crazing crack, vertical crack and horizontal crack |  Figure 3.8 : Crack |
| Peeling off Paint |  Figure 3.9 : Peeling Off Paint |
| Gap between wall and column, gap at adjoining wall |  Figure 3.10 : Gap |

| | |
|---|---|
| Detached |  <br>Figure 3.11 : Detached |
| Missing |  <br>Figure 3.12 : Missing Window Glass |
| Broken |  <br>Figure 3.13 : Broken at Drain |
| Dampness |  <br>Figure 3.14 : Dampness |

| | |
|---|---|
| Termite Attack |  Figure 3.15 : Termite Attack |

Table 3.1 : Table for Type of Defects

### 3.2.3 Inspection Process

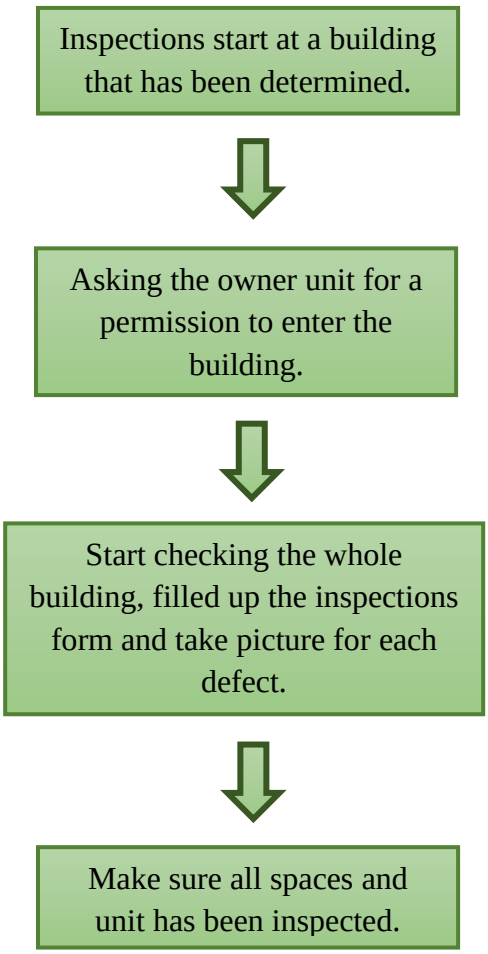



Figure 3.16 : The Flow of Inspection Process

Based on the chart above, it is shown the flow of the inspection process that need to be followed to avoid from missing any part of the inspections work. First, inspection work will be start with the inspector will be going to the building that has been determined. Basically, if the project is a big project then every inspector will be divided into several groups and each team will be given some building that will be under them to run the inspection work. Next, if there were some private area, then the inspector need to ask a permission to the owner before carrying out the inspection. After that, during the inspection, the surveyor will be collecting all the data by filling up the form and take picture of the defects. Lastly, every surveyor must be alert with all the spaces or unit and making sure that every area are inspected.

How the data are collected :

1) Taking picture

Zoom Out Zoom In

Figure 3.17 : Example of Picture Taken for The Defect

Based on the figure above, there were two types of picture that need to be taken for one defects which is the zoom one and not zoomed. Both of this picture must be taken clearly as it will be inserted in the report afterwards. Other than that, every picture taken must have the time and date of the inspection is done at the bottom of the picture as it will be used as a references in making a report.

2) Tagging on the building plan

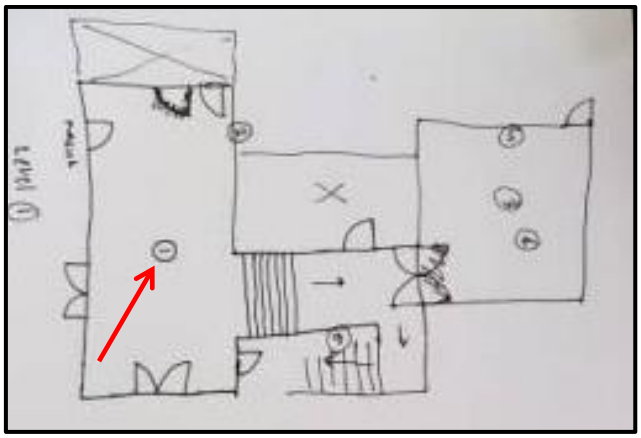
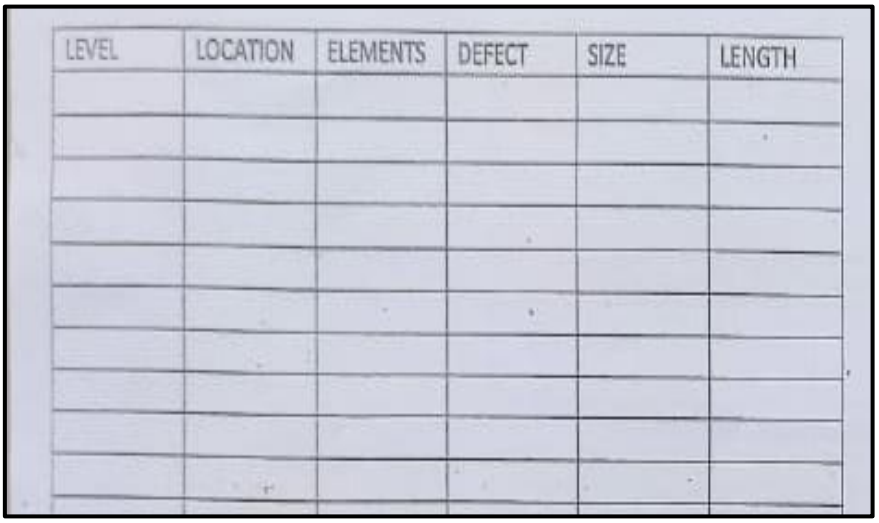


Figure 3.18 : Tagging on Sketched Plan

Figure 3.18 shows a plan that has been tag. Tagging is a number that is written at the exact places where the defect is located. For example, if the defect was detected at the corner of the spaces then the inspector will tag at the same places. This is because the tagging number indicates the order in which the defect was found.

3) Filling the inspection form



| LEVEL | LOCATION | ELEMENTS | DEFECT | SIZE | LENGTH |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Figure 3.19 : Inspection Form

Figure 3.19 shows an inspection form that need to be filled during the inspection work. Each of the column must be filled correctly as all the information that has been collected will be directly transfer to the report. Therefore, if the inspector taking a wrong information then the report can not be accepted. In the form, the word ‘level’ is for which floor or level are the defect detected. Next, the ‘location’ is for the name of the spaces or area such as living room, store, kitchen, porch and etc. The ‘element’ is for the element of the building such as wall, floor, ceiling, column, drain and etc. The ‘defect’ is the type of the defect. Lastly, for the ‘size’, it is usually for crack and gap where it is taken in millimeter(mm). The ‘length’ is for the length of the defect where it is taken in meter(m).

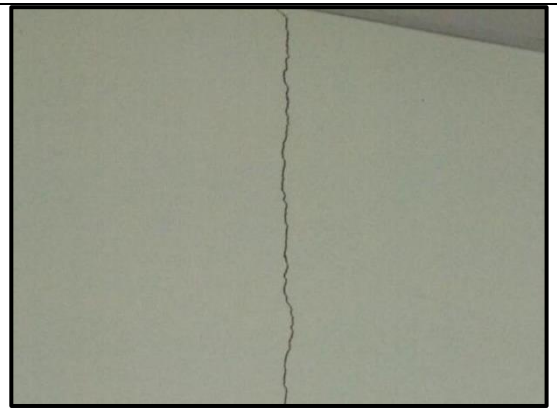
4) Size and length measurement


Figure 3.20 : Measuring The Defect Size


Figure 3.21 : Measuring The Defect Length

Figure above is how the size and length of the defect is taken. Usually, size and defect are taken only for gap defect and crack defect where the size will be taken by using crack comparator and the length will be taken by using measuring tape. For other defect, the area of the effected area will be taken.

Method on how to fill up the inspection form :

| No. | Picture | Level | Location | Element | Defect | Size | Length |
|---|---|---|---|---|---|---|---|
| 1 |  Figure 3.22 : Example of Crack | Ground Floor | Stationery Store | Wall (Plaster) | Vertical Crack | 0.06mm | 3.00m |
| 2 |  Figure 3.23 : Example of Broken | Ground Floor | Rear part of The Building | Drain (Concrete) | Broken | - | 0.30m x 0.20m (take its area) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 |  <br>Figure 3.24 : Example of Missing | Ground Floor | Front Part of The Building | Window (Glass) | Missing | - | 1 Unit |
| 4 |  <br>Figure 3.25 : Example of Peeling Off Paint | Ground Floor | Balcony | Wall (Plaster) | Peeling Off Paint | - | 1.00m x 0.80m (area of effected area) |

Table 3.2 : How to Fill Inspection Form

### 3.3 Process on Preparing a Report

Preparation of report will be started after all the data has fully collected. In preparing a report, the inspector must ensure that all the data that has been collected is right as the data then will be transferred directly into the report and the report will be handed to the client. Other than that, the reporter also need to ensure that every single detail has been filled correctly to avoid the report from being rejected.

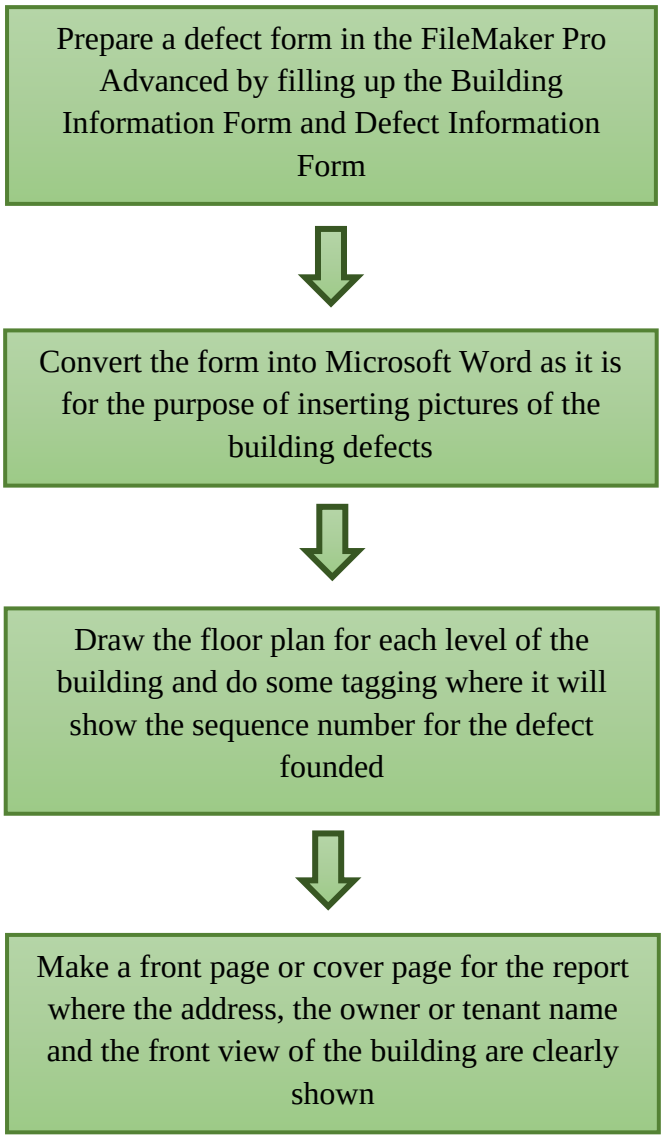



Figure 3.26 : The Flow of The Process on Preparing a Report

**a. Prepare a defect form**

After collecting data at the case study is done, we are going to start making a report by preparing the defect form. The material use on making a form is the "File Maker Pro Advanced Application" where this application is the main application that is used by Jasa Sendi (M) Sdn. Bhd. to produce a report.

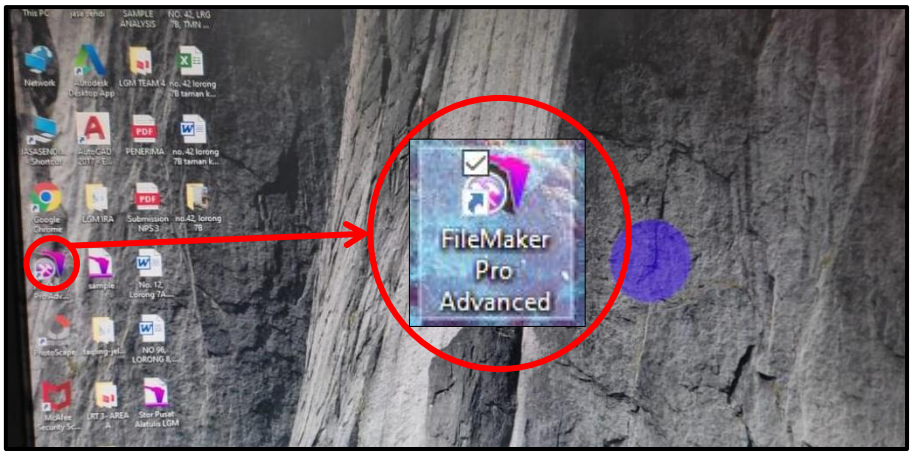



Figure 3.27 : The File Maker Pro Advanced Application

File Maker Pro Advanced Software is use to keep all the data collected at the case study before making a complete report. This software simplifies the process of provisioning a report as FileMaker Pro Advanced helps on converting the defects form into a PDF document and also Excel documents. Both of these document is important as the PDF document will be the report and the Excel document is for us to make a defect analysis for overall condition of the building.

In addition, FileMaker Pro Advanced helps on standardize the format of the defect form and it could also helping on fasten the process on preparing a report. There are three (3) form that was in the system, which is :

i. Building Information Form
ii. Defect Information Form
iii. Convert to Microsoft Words Form

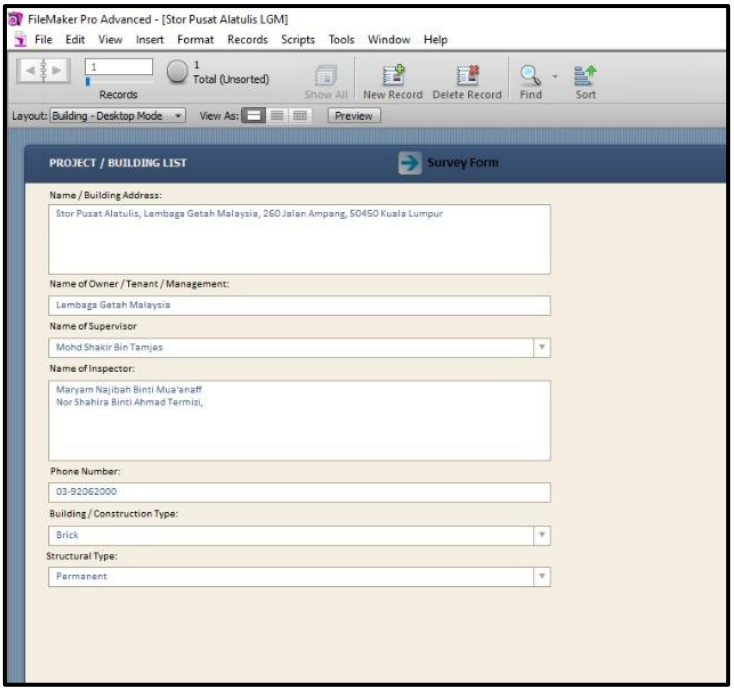



Figure 3.28 : The Building Information Form

Figure above show the building information form that need to be filled for reporting purposes. In the form, the information that has to be included is the name and the address of the building, name of the owner, name of the supervisor incharge for the inspection work, name of the inspector that was involved in the inspection where the first name will be the person who is preparing the report, the owners phone number, building type and lastly is the structural type. This information form later will be include in the report as it can be used for further reference.

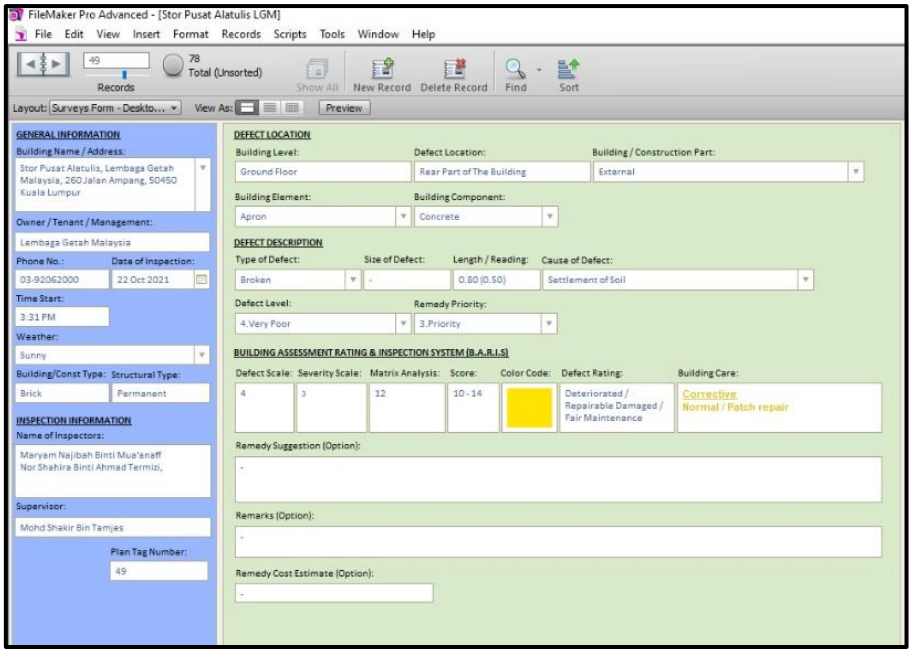



Figure 3.29 : The Defect Information Form

Figure above shows the defect information form where this part is the main part in the report as all the information and data collected will be inserted in this form. Starting with the blue part, it is for a general information where in this part, all of the detail of the project is written. Other than the detail that has been inserted on the building information form before, there are some additional detail included which is the date of inspection performed, weather condition during the inspection, time of running the inspection and also the defect plan tag number.

Moving on to the green part where in this part all of the defect data will be included. At the defect location, it will state the building level, location of defect, building part, building element and building components. Next, for the defect description, we will filled the form with the defect data that has been collected during the inspection work. The data including the type of defect, size of defect, length of defect, cause of defect, defect level and remedy priority. The last one will be the Building Assessment Rating & Inspection System (B.A.R.I.S). For this part, it will be calculated automatically after the defect description information has been added. It will appear the defect scale, severity scale, matrix analysis, score, colour code, defect rating and building care. For dilapidation survey, we only cover all

the mentioned part above as the remedy suggestion, remarks and remedy cost estimate is just an optional.

### b. Convert into Microsoft Word

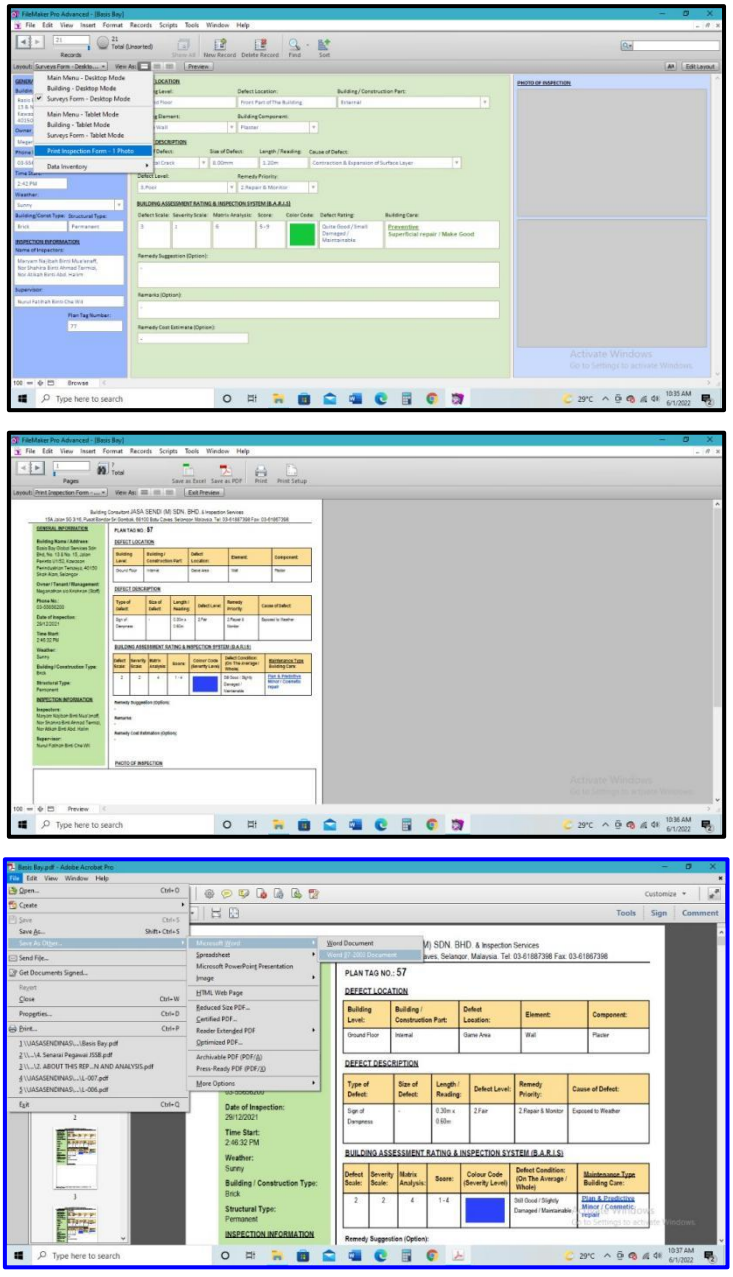


Figure 3.30 : Converting Form

Figure above shows the part that need to be clicked to convert the form into other folder. After the part has clicked, the a4 page will come out and we have to save it into two file which is the PDF type and also the Microsoft Excel type. Both

has to be saved as it will be included in the final report afterwards where this part usually be handled by the project supervisor. After it is done, the PDF file will be opened and we will convert the pages into Microsoft Word document where this document will be located at the company's folder which is Word 93 - 2007 document.

### c. Inserting Pictures of Defect

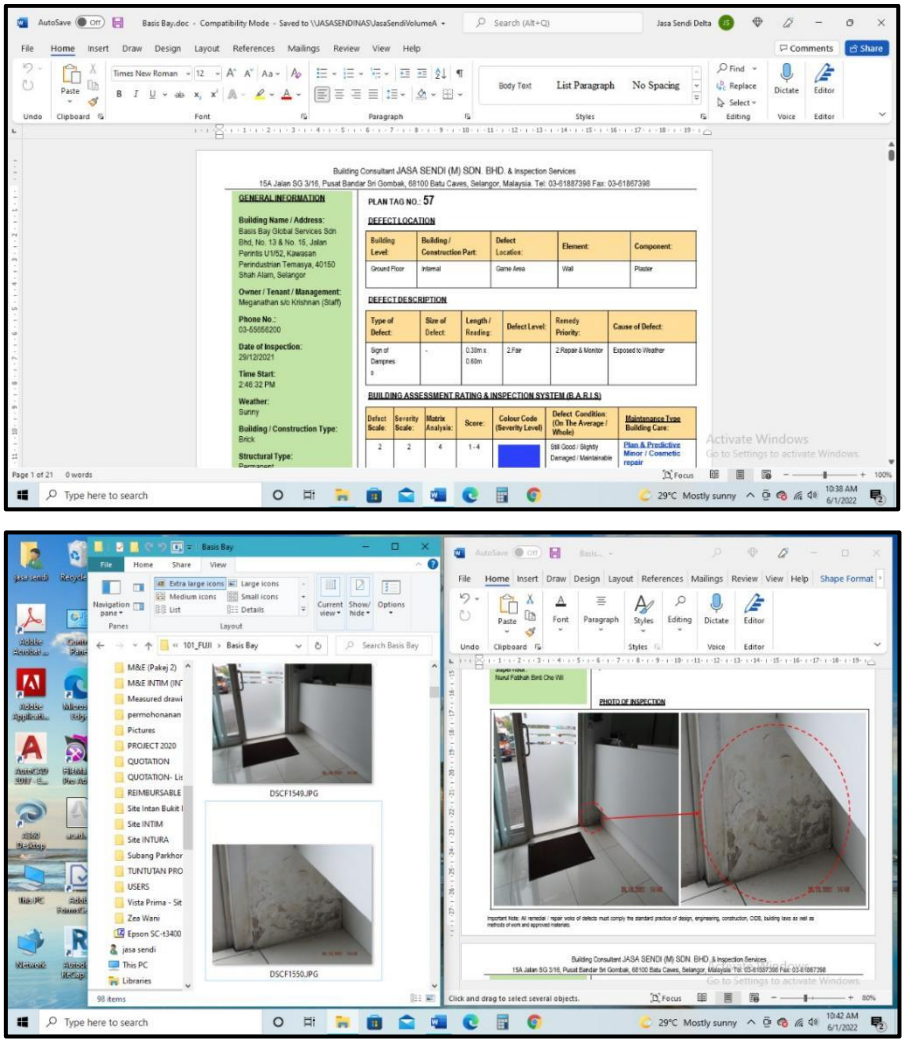


Figure 3.31 : Inserting Pictures of Defect

Figure above is the dilapidation form that has been convert into Microsoft Words document and the way on how the pictures of defect is inserted. There will always be two types of picture which is the zoom in and zoom out as it can ease the process on detection and references.

**d. Completed report**

In a complete report, there will be three (3) things that must have which is the front page of the report, the floor plan of the building and all the defect form. Therefore, I will be inserting one project that I have involved with three different example of defect form which have the major defects to help on making this description more clear. The project that will be taken is from the MSN project.

Below is the building that has been inspected by my team and some spaces have been chosen to use as an example.


Figure 3.32 : The Front View of House No. 38


Figure 3.33 : Front Page of The Report

Above is the front page that will be inserted in the report where the address of the building will be written on top of the page and under the address will be the front view of the building that has been inspected. This front page is important as it is used as a separation between other buildings report as all the report then will be combine together into one file.

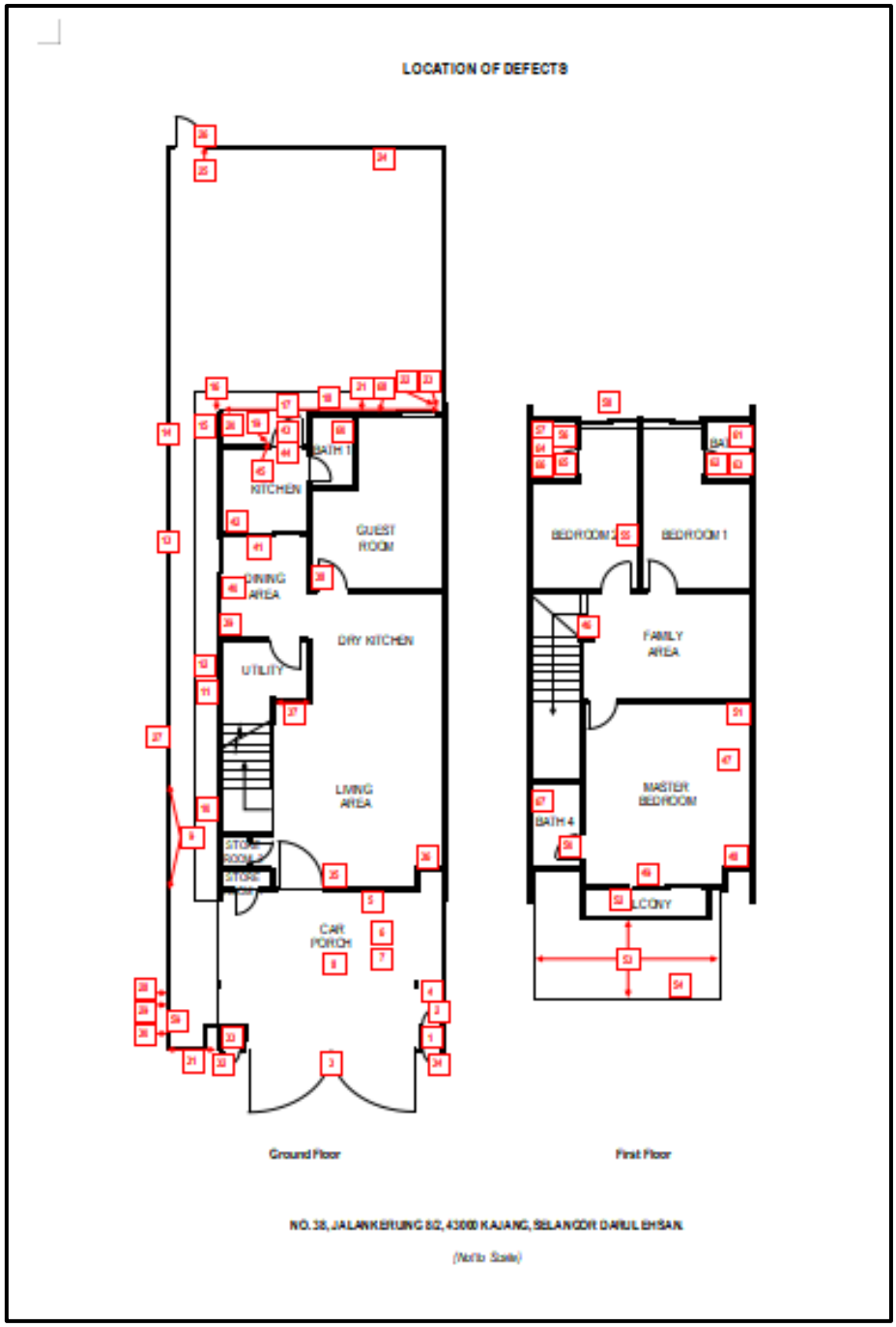
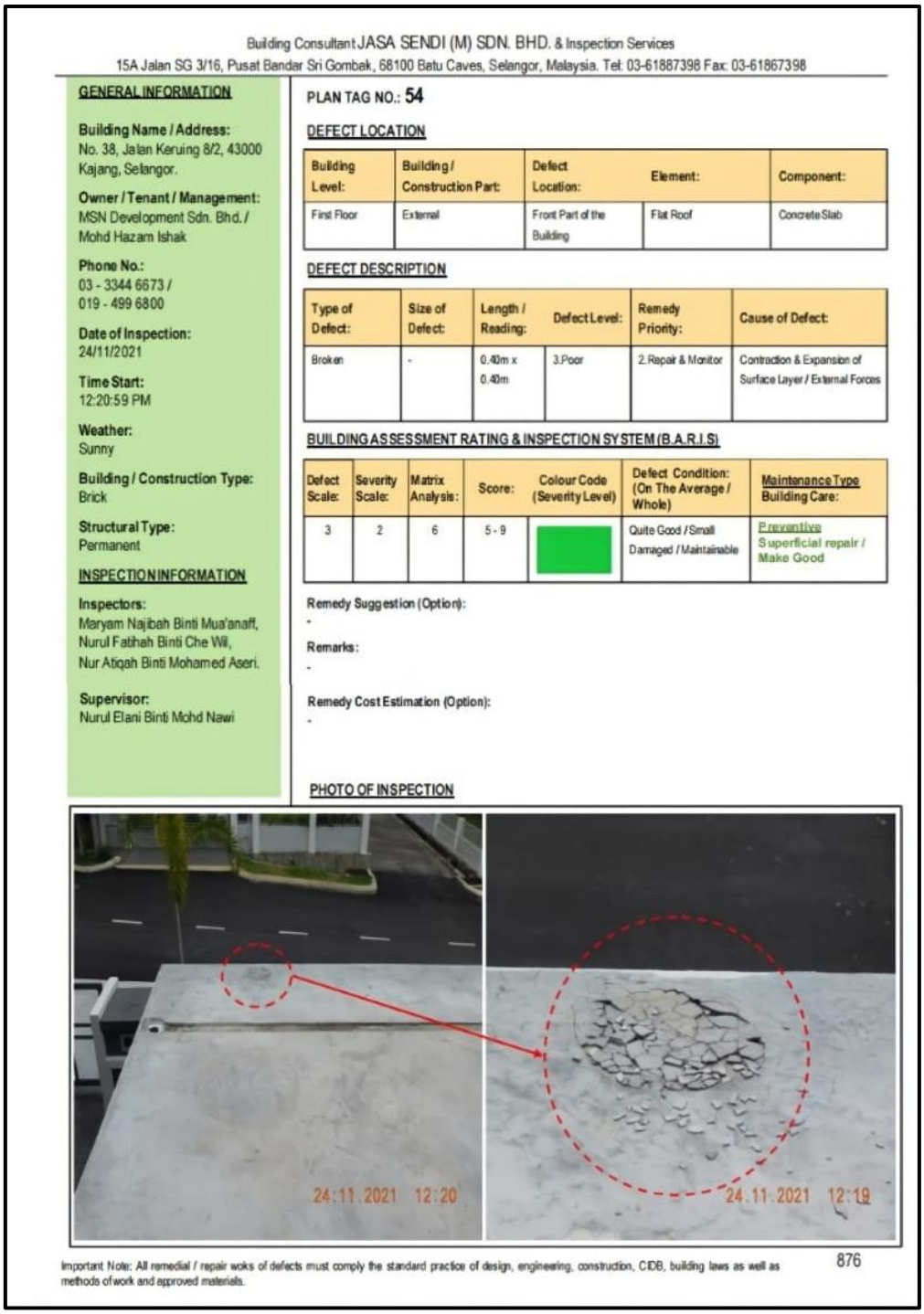



Figure 3.34 : Floor Plan for House No. 38 with Tagging

Above is the floor plan of the building inspected with some tags. Tagging is the red square with a number in it where the number will be written according to the defect founded and the number must be written following to the sequence of the defect written in the survey form. In addition, the tagging must be putting at the exact places where the defect was founded as it will ease the contractor to find the defect location.

Example of Defect Form and its Description :



Building Consultant JASA SENDI (M) SDN. BHD. & Inspection Services
15A Jalan SG 3/16, Pusat Bandar Sri Gombak, 68100 Batu Caves, Selangor, Malaysia. Tel: 03-61887398 Fax: 03-61867398

**GENERAL INFORMATION**

**Building Name / Address:**
No. 38, Jalan Keruing 8/2, 43000 Kajang, Selangor.

**Owner / Tenant / Management:**
MSN Development Sdn. Bhd. / Mohd Hazam Ishak

**Phone No.:**
03 - 3344 6673 /
019 - 499 6800

**Date of Inspection:**
24/11/2021

**Time Start:**
12:20:59 PM

**Weather:**
Sunny

**Building / Construction Type:**
Brick

**Structural Type:**
Permanent

**INSPECTION INFORMATION**

**Inspectors:**
Maryam Najibah Binti Mua'anaff,
Nurul Fatihah Binti Che Wil,
Nur Atiqah Binti Mohamed Aseri.

**Supervisor:**
Nurul Elani Binti Mohd Nawi

PLAN TAG NO.: **54**

**DEFECT LOCATION**

| Building Level: | Building / Construction Part: | Defect Location: | Element: | Component: |
|---|---|---|---|---|
| First Floor | External | Front Part of the Building | Flat Roof | Concrete Slab |

**DEFECT DESCRIPTION**

| Type of Defect: | Size of Defect: | Length / Reading: | Defect Level: | Remedy Priority: | Cause of Defect: |
|---|---|---|---|---|---|
| Broken | - | 0.40m x 0.40m | 3.Poor | 2.Repair & Monitor | Contraction & Expansion of Surface Layer / External Forces |

**BUILDING ASSESSMENT RATING & INSPECTION SYSTEM (B.A.R.I.S)**

| Defect Scale: | Severity Scale: | Matrix Analysis: | Score: | Colour Code (Severity Level) | Defect Condition: (On The Average / Whole) | Maintenance Type Building Care: |
|---|---|---|---|---|---|---|
| 3 | 2 | 6 | 5 - 9 | | Quite Good / Small Damaged / Maintainable | Preventive Superficial repair / Make Good |

**Remedy Suggestion (Option):**
-

**Remarks:**
-

**Remedy Cost Estimation (Option):**
-

**PHOTO OF INSPECTION**



Important Note: All remedial / repair woks of defects must comply the standard practice of design, engineering, construction, CIDB, building laws as well as methods of work and approved materials.

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Figure 3.35 : Example of Defect Form

Above is the example of the defect form that will be included in the report where everything that is related to the defect will be stated and one page is only for one defect therefore if there was 54 defects then there will be 54 pages of defect form. Below are the explanation for each of the spaces in the defect form.

| GENERAL AND INSPECTION INFORMATION | |
|---|---|
| Building Name / Address | Where the name of the building inspected and the address of the site is stated |
| Owner / Tenant / Management | The name of the owner of the building or site or person in charge who request for the inspection |
| Phone Number | Number of the building's owner |
| Date & Time | According to the inspection's performed |
| Weather | The weather of the inspection day (either sunny, rain, windy and so on) |
| Building Type & Structural Type | Usually 'brick' and 'permanent' will be stated into that space because all the building is made of brick and of course it is permanent |
| Inspectors | The first name will be the person who are incharge for the report and the second name is someone who is incharge in taking picture of the defect and drawing plan and tagging number on plan |
| Supervisor | The person who is responsible to the project where they will be the one who will always in touch with the client |
| **DEFECT INFORMATION** | |
| Building Level | The level of the building where the defect is founded. When it is a high rise building, word 'level' will be used but if it is just a low rise building or other ordinary building then the word 'floor' will be used. |
| Building Part | Either 'external' or 'internal' will be stated depends on where the defects are founded. |
| Defect Location | For external, usually the part of the building will be stated such as front part of the building, left part of the building and so on. But when it comes to an internal space, the name of the space itself will be stated such as living area, kitchen, bedroom, toilet and etc. |

| | |
|---|---|
| Element | The element of the building where the defect is located. (wall, column, beam, floor, ceiling, door, gate, window and etc.) |
| Component | Component is where the element is made of or the name of the layer that was effected. (plaster, board, concrete, cement render, steel for gate, door leaf for door, window panel, window glass, and etc.) |
| Type of Defect | Type of defect is what kind of defect that is found. (crack, gap, peeling off paint, sign of dampness, broken, missing, hollow, hole, corrosion, and etc.) |
| Size of Defect | The size that has been measured during the inspection. Usually size will be stated only for the gap and crack since that the only size that can be measured by using crack comparator. |
| Length | The length of the defect. For other defect than gap and crack, their area will be taken. |
| Defect Level | 1. Good (Bearable Condition)<br>2. Fair (Small defect or less affection)<br>3. Poor (Bigger than 1.00mm)<br>4. Very Poor (Hazard to the residents, <5.30)<br>5. Critical Damage (Bigger than 6.00mm) |
| Remedy Priority | 1. Discretionary (Can be discussed)<br>2. Repair and Monitor (Only need some light repairs)<br>3. Priority (Important to be fixed)<br>4. Urgent (Need to fix immediately)<br>5. Emergency (Risky and can lead to fatality) |
| Cause of Defect | Usually used (depends on the environment condition) :<br>1. Contraction and Expansion of Surface Layer<br>2. Construction Nearby<br>3. Exposed to Weather (dampness, corrosion)<br>4. External Forces (broken, hole) |

| | |
|---|---|
| | 5. Lack of Maintenance<br>6. Poor Workmanship (work not properly done)<br>7. Settlement of Soil<br>8. Wear and Tear (peeling off paint) |
| **B.A.R.I.S ASSESSMENT** | |
| | Every information that was under B.A.R.I.S will be calculate automatically after the 'defect level' and the 'remedy priority' is stated. For example, if the 'defect level' is 4 and 'priority of remedy' is 3 then the scale will be 12 with yellow colour (4 x 3 = 12). |
| **PHOTO OF INSPECTION** | |
| Two types of picture | Picture from a far and a zoom picture. Then the defect will be circled using red circle where it can make the referrer automatically focus on the defect. |

Table 3.3 : Explanation of Defect Form

**B.A.R.I.S ASSESSMENT**

| OVERALL BUILDING RATING | | | | | |
|---|---|---|---|---|---|
| **No.** | **Building Rating** | **Defect Condition** | **Scale (mm)** | **Remedy / Priority** | **Score** |
| 1 | Still Good / Slightly Damaged / Maintainable | Good | < 0.50 | Discretionary | 1 - 4 |
| 2 | Quiet Good / Small Damage / Maintainable | Fair | 0.50 - 1.00 | Repair & Monitor | 5 - 9 |
| 3 | Deteriorated / Repairable Damaged / Fair Maintenance | Poor | 1.00 - 3.00 | Priority | 10 - 14 |
| 4 | Dilapidated / Badly Damaged / High Maintenance | Very Poor | 3.00 - 6.00 | Urgent | 15 - 19 |
| 5 | Worst / Not Functioning / Beyond Maintenance | Dilapidated | > 6.00 | Emergency | 20 - 25 |

Table 3.4 : BARIS Assessment

*(Source : Jasa Sendi (M) Sdn. Bhd. Company's Profile Report)*

JASA SENDI - BARIS ASSESSMENT

| SCALE | | PRIORITY OF REMEDY/REPAIR | | | | |
|---|---|---|---|---|---|---|
| | | 5 | 4 | 3 | 2 | 1 |
| DEFECT CONDITION | 5 | 25 | 20 | 15 | 10 | 5 |
| | 4 | 20 | 16 | 12 | 8 | 4 |
| | 3 | 15 | 12 | 9 | 6 | 3 |
| | 2 | 10 | 8 | 6 | 4 | 2 |
| | 1 | 5 | 4 | 3 | 2 | 1 |

| NO | MAINTENANCE TYPE | SCORE |
|---|---|---|
| 1 | Plan & Predictive, Cosmetic Repair | 1 to 4 |
| 2 | Preventive, Superficial Repair | 5 to 9 |
| 3 | Corrective, Patch Repair | 10 to 14 |
| 4 | Breakdown, Principle Repair | 15 to 19 |
| 5 | Major repair & Replacement | 20 to 25 |

OVERALL BUILDING RATING

| NO | BUILDING RATING | SCORE |
|---|---|---|
| 1 | Still Good/ Unobvoius or Minor Damage | 1 to 4 |
| 2 | Quite Good/ Slight Damage | 5 to 9 |
| 3 | Fair | 10 to 14 |
| 4 | Dilapidated | 15 to 19 |
| 5 | Not Functioning | 20 to 25 |

DEFECT CONDITION

| SCALE VALUE | CONDITION | DESCRIPTION |
|---|---|---|
| 1 | Good | |
| 2 | Fair | |
| 3 | Poor | |
| 4 | Very Poor | |
| 5 | Dilapidated/ Critical Damage | |

PRIORITY OF REMEDY/ REPAIR

| SCALE VALUE | PRIORITY | DESCRIPTION |
|---|---|---|
| 1 | Discretionary | |
| 2 | Repair and Monitor | |
| 3 | Priority | |
| 4 | Urgent | |
| 5 | Emergency | |

PRIORITY OF REMEDY/ REPAIR

| PRIORITY | DESCRIPTION |
|---|---|
| Discretionary | Functional, cosmetic/ slight defect, need touch up and service |
| Repair and Monitor | Minor defect, in long run can lead to major defect if unattended, first come first served action |
| Priority | Serious/ obvious defect, already expanded, function to unacceptable standard. Arrange to remedy |
| Urgent | In short time can cause defects to other elements/ components/life/properties, operation at risk |
| Emergency | Element/ structure not function at all; or risk that can lead to fatality and/or Injury. No time to wait, take action now. |

Crack (Retak)

| Score | Crack (Retak) | Scale (Skala) - mm |
|---|---|---|
| 1 – 4 | Rerambut/ Halus | < 0.50mm |
| 5 – 9 | Kecil | 0.50mm - 1.00mm |
| 10 – 14 | Sederhana | 1.00mm - 3.00mm |
| 15 – 19 | Besar | 3.00mm - 6.00mm |
| 20 – 25 | Sangat Besar | > 6.00mm |

Gap (Renggang)

| Score | Gap (Renggang) | Scale (Skala) - mm |
|---|---|---|
| 1 – 4 | Sangat Kecil | < 0.50mm |
| 5 – 9 | Kecil | 0.50mm - 1.00mm |
| 10 – 14 | Sederhana | 1.00mm - 3.00mm |
| 15 – 19 | Besar | 3.00mm - 6.00mm |
| 20 – 25 | Sangat Besar | > 6.00mm |

Dampness (Kelembapan)

| Dampness (Kelembapan) | Reading ($^{O}$C) |
|---|---|
| Berair (Watering) | > 40 |
| Basah (Wet) | 31 – 40 |
| Lembap (Dampness) | 21 – 30 |
| (Moist) | 11 – 20 |
| Kering (Dry) | < 10 |

Figure 3.36 : B.A.R.I.S System

| PRIORITY OF REMEDY / REPAIR | |
|---|---|
| **PRIORITY** | **DESCRIPTION** |
| Discretionary | Functional, cosmetic / slight defect, need touch up and service |
| Repair and Monitor | Minor defect, in long run can lead to major defect if unattended, first come first served action |
| Priority | Serious / obvious defect, already expanded, function to unacceptable standard |
| Urgent | In short time can cause defects to other elements/ components / life / properties, operation at risk |
| Emergency | Element / structure not function at all; or risk that can lead to fatality and / or injury. No time to wait, take action now. |

Table 3.5 : Priority of Remedy

*(Source : Jasa Sendi (M) Sdn. Bhd. Company's Profile Report*

**e. Final report and handing over report**

Final report is the report that will be handed to the client where in this report it will contain every building that has been inspected. For example, for this project, each team will cover 10 building to be inspected and if there were six team then there will be 60 buildings that will be insert in this final report. On top of that, if one report is for one building then there will be 60 completed report that need to be included in this final report. After the full report for each building is completed, the report then will be printed and we will compile it inside a file. Every final report, the front page of the report must be just like the picture shown below as it could help on differentiate between the complete report and the final report. In addition, in this final report, contents, any information related and the analysis for the condition of the building will also be stated before submit to the client. Finally, after everything has been compiled together in a file, then it can be handed to the client.

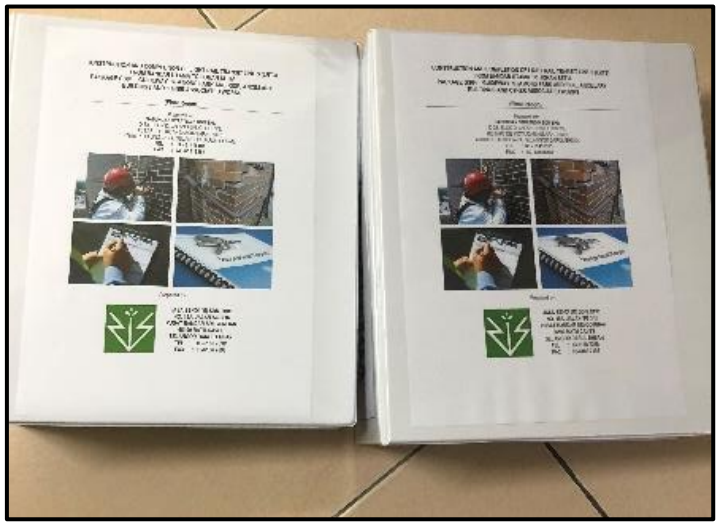
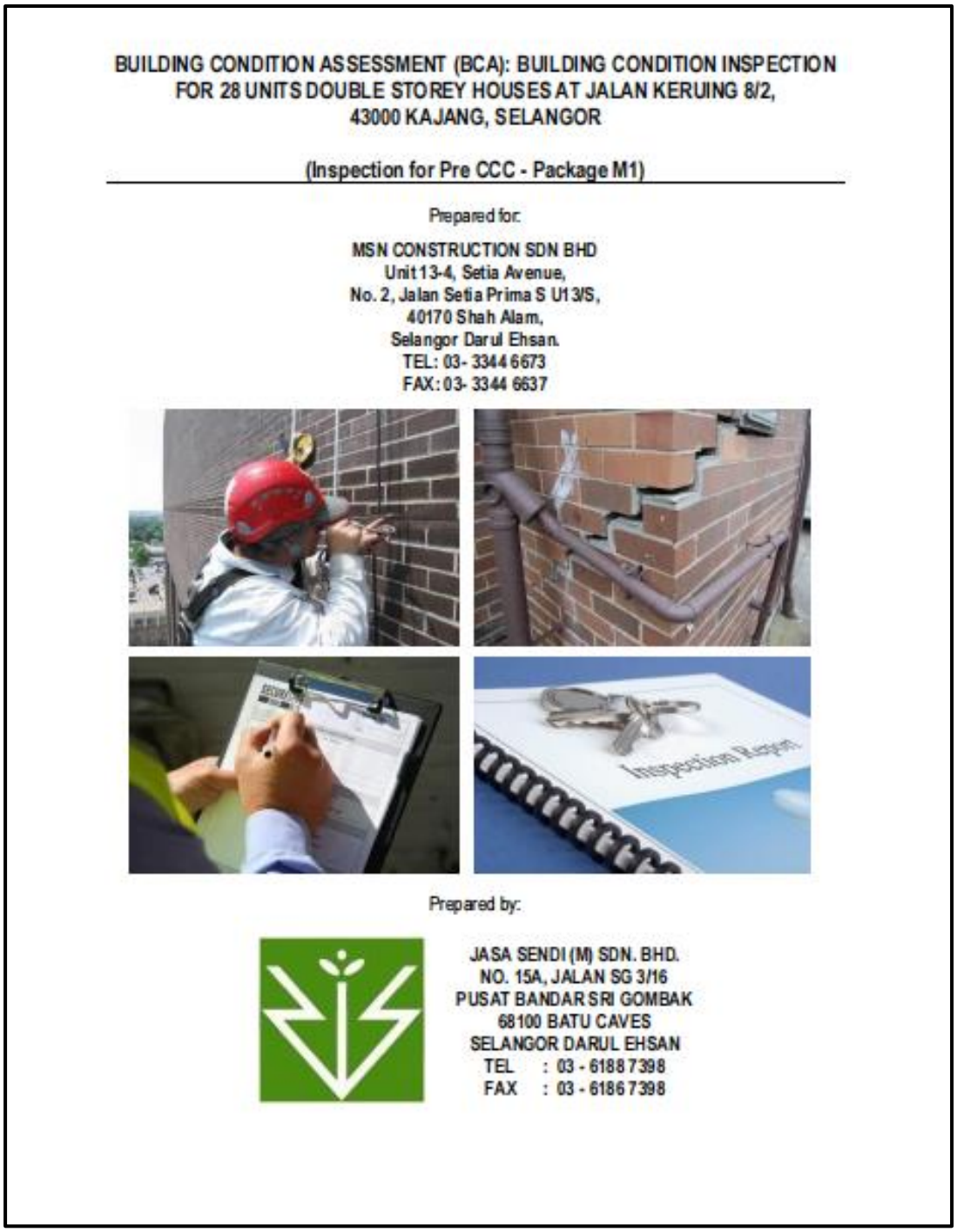


Figure 3.37 : File of The Final Report

Below are the pages that should be in the final report :

i) Front Page of Final Report



BUILDING CONDITION ASSESSMENT (BCA): BUILDING CONDITION INSPECTION FOR 28 UNITS DOUBLE STOREY HOUSES AT JALAN KERUING 8/2, 43000 KAJANG, SELANGOR

(Inspection for Pre CCC - Package M1)

Prepared for:

MSN CONSTRUCTION SDN BHD
Unit 13-4, Setia Avenue,
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40170 Shah Alam,
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Figure 3.38 : Front Page for Final Report

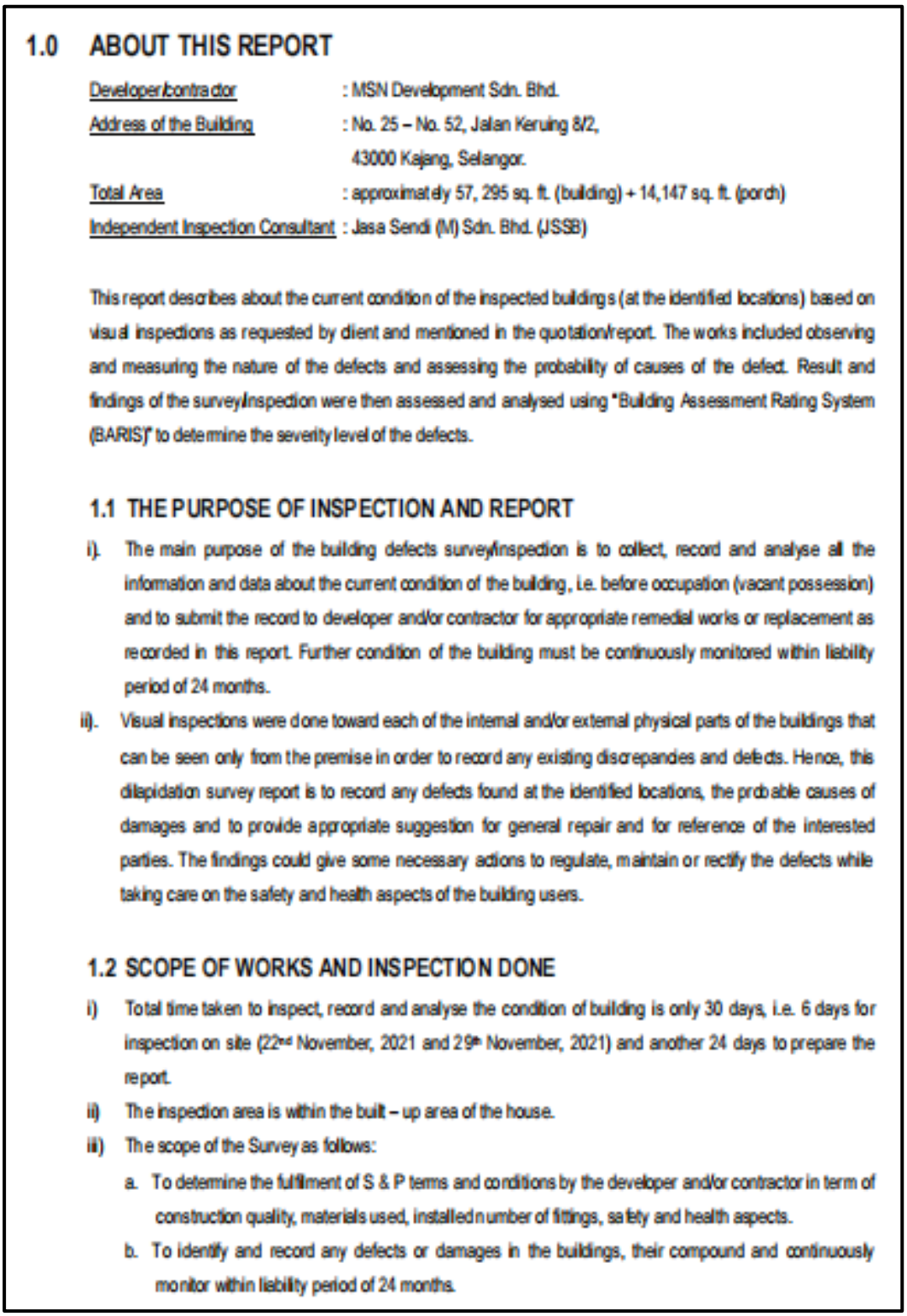
ii) Content

**CONTENT**



Figure 3.39 : Table of Content for Final Report

iii) About this Report



## 1.0 ABOUT THIS REPORT

| | |
|---|---|
| Developer/contractor | : MSN Development Sdn. Bhd. |
| Address of the Building | : No. 25 – No. 52, Jalan Keruing 8/2, 43000 Kajang, Selangor. |
| Total Area | : approximately 57, 295 sq. ft. (building) + 14,147 sq. ft. (porch) |
| Independent Inspection Consultant | : Jasa Sendi (M) Sdn. Bhd. (JSSB) |

This report describes about the current condition of the inspected buildings (at the identified locations) based on visual inspections as requested by client and mentioned in the quotation/report. The works included observing and measuring the nature of the defects and assessing the probability of causes of the defect. Result and findings of the survey/inspection were then assessed and analysed using "Building Assessment Rating System (BARIS)" to determine the severity level of the defects.

### 1.1 THE PURPOSE OF INSPECTION AND REPORT

i). The main purpose of the building defects survey/inspection is to collect, record and analyse all the information and data about the current condition of the building, i.e. before occupation (vacant possession) and to submit the record to developer and/or contractor for appropriate remedial works or replacement as recorded in this report. Further condition of the building must be continuously monitored within liability period of 24 months.

ii). Visual inspections were done toward each of the internal and/or external physical parts of the buildings that can be seen only from the premise in order to record any existing discrepancies and defects. Hence, this dilapidation survey report is to record any defects found at the identified locations, the probable causes of damages and to provide appropriate suggestion for general repair and for reference of the interested parties. The findings could give some necessary actions to regulate, maintain or rectify the defects while taking care on the safety and health aspects of the building users.

### 1.2 SCOPE OF WORKS AND INSPECTION DONE

i) Total time taken to inspect, record and analyse the condition of building is only 30 days, i.e. 6 days for inspection on site (22nd November, 2021 and 29th November, 2021) and another 24 days to prepare the report.

ii) The inspection area is within the built – up area of the house.

iii) The scope of the Survey as follows:

a. To determine the fulfillment of S & P terms and conditions by the developer and/or contractor in term of construction quality, materials used, installed number of fittings, safety and health aspects.

b. To identify and record any defects or damages in the buildings, their compound and continuously monitor within liability period of 24 months.

Figure 3.40 : About the Report

c. To establish as a valid record for negotiation, or court proceeding, or arbitration process and/or decision making in case of any disputes, claims and/or legal action arise in the future between purchaser/house owner and developer.

d. To provide valid evident for Consumers Tribunal Hearing if so required in the future.

## 2.0 INSPECTION LIMITATIONS

Listed below are the limitations of the dilapidation survey.

1. There is no completed/scaled building structural plan, or other building documents/specifications except S & P supplied by client to enable inspectors to have thorough assessment of the defects.
2. Inspections only covered discrepancies and defects that could be seen visually, accessible and found during the period of inspection.
3. Inspections have been conducted to the permanent structures, the temporary or removable structures (such as built-in cabinet) and/or movable objects (inclusive of all furniture) within/inside the buildings. No inspection done to any parts of the buildings that were hidden, closed, embedded, covered, sealed, locked, prevented to inspect, or no access and/or elements or components that difficult to trace.
4. No destructive testing done in this inspection to determine the strength of the building structures or load imposed on the buildings or to determine the impact of any new additional constructions, structures, pumps or load applied (if required, a further comprehensive structural testing and analysis can be recommended and done by other party).
5. Validity of inspection and report: The validity of this report will cover for four (4) months from the date of this report. Any new defects/damages occurred/found after the said date, it is beyond the liability of this inspection, otherwise, a re-inspection need to be carried out.

Figure 3.41 : About the Report

## 3.0 DILAPIDATION SURVEY DECLARATION

**THE DILAPIDATION SURVEY/CONDITION INSPECTION OF THE BUILDINGS**

1. This declaration is made to certify that the following report of the inspected buildings (as mentioned in this report) belong to:

   **MSN DEVELOPMENT SDN BHD**
   **Unit 13-4, Setia Avenue,**
   **No. 2, Jalan Setia Prima S U13/S,**
   **40170 Shah Alam,**
   **Selangor Darul Ehsan.**

   The buildings ~~*has/~~have been inspected as per standard of professional practice for building dilapidation survey/condition inspection meet the requirements of relevant local authority requirements or any stated laws;
2. The inspection have been done only to the areas or locations as directed or identified by the client and areas as agreed in the quotation by the consultant to client;
3. Results and findings of the inspection have been mentioned in the attached report as well as the category of building condition and locations of the building defects/problems.
4. Jasa Sendi (M) Sdn. Bhd. is fully responsible for the inspection done and the report, and subject to certain limitations (if any) and/or as described in this report or quotation.
5. This report is certified and signed by Chartered Building Surveyor/*Professional Engineer.
6. The findings and results of this report are confined to the date and location at the inspection is carried out.

Figure 3.42 : About the Report

THIS REPORT IS CERTIFIED AND SIGNED BY CHARTERED BUILDING SURVEYOR

Chartered Building Surveyor

Name: Prof. Sr. Dr. Ahmad Bin Ramly, P.E. (UK)

Reg. No. (Sr): F2285

N/A

* Professional Engineer (Civil/Structural)

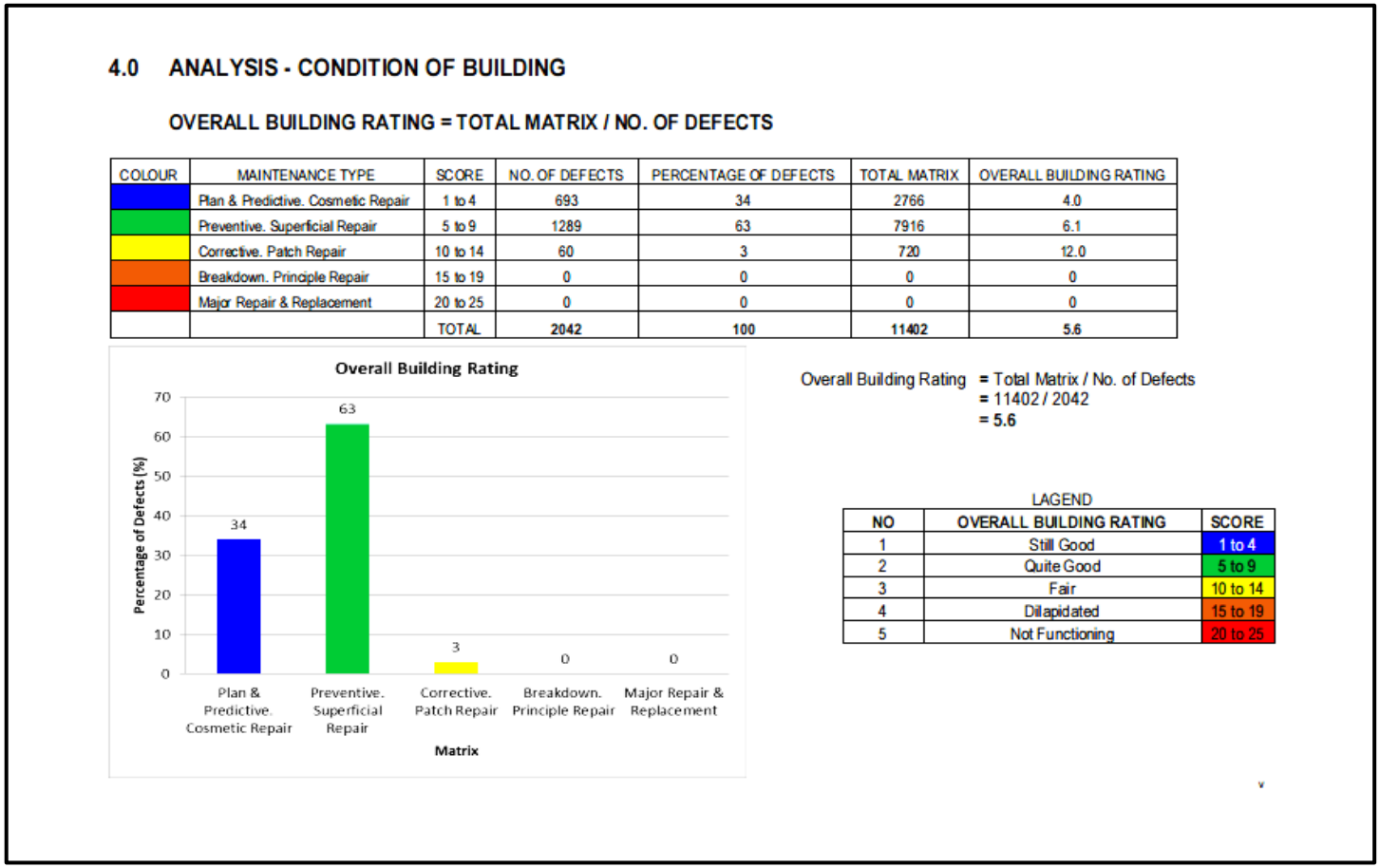
Name:

Reg. No. (P.E)

*delete if not appropriate

Figure 3.43 : Report Verification

iv) Analysis for Condition of Building



**4.0 ANALYSIS - CONDITION OF BUILDING**

**OVERALL BUILDING RATING = TOTAL MATRIX / NO. OF DEFECTS**

| COLOUR | MAINTENANCE TYPE | SCORE | NO. OF DEFECTS | PERCENTAGE OF DEFECTS | TOTAL MATRIX | OVERALL BUILDING RATING |
|---|---|---|---|---|---|---|
| | Plan & Predictive. Cosmetic Repair | 1 to 4 | 693 | 34 | 2766 | 4.0 |
| | Preventive. Superficial Repair | 5 to 9 | 1289 | 63 | 7916 | 6.1 |
| | Corrective. Patch Repair | 10 to 14 | 60 | 3 | 720 | 12.0 |
| | Breakdown. Principle Repair | 15 to 19 | 0 | 0 | 0 | 0 |
| | Major Repair & Replacement | 20 to 25 | 0 | 0 | 0 | 0 |
| | | TOTAL | **2042** | **100** | **11402** | **5.6** |



Overall Building Rating = Total Matrix / No. of Defects
= 11402 / 2042
= **5.6**

LAGEND

| NO | OVERALL BUILDING RATING | SCORE |
|---|---|---|
| 1 | Still Good | 1 to 4 |
| 2 | Quite Good | 5 to 9 |
| 3 | Fair | 10 to 14 |
| 4 | Dilapidated | 15 to 19 |
| 5 | Not Functioning | 20 to 25 |

Figure 3.44 : Overall Building Analysis

v) Location


Figure 3.45 : Location of Inspection

vi) Partition for Completed Report

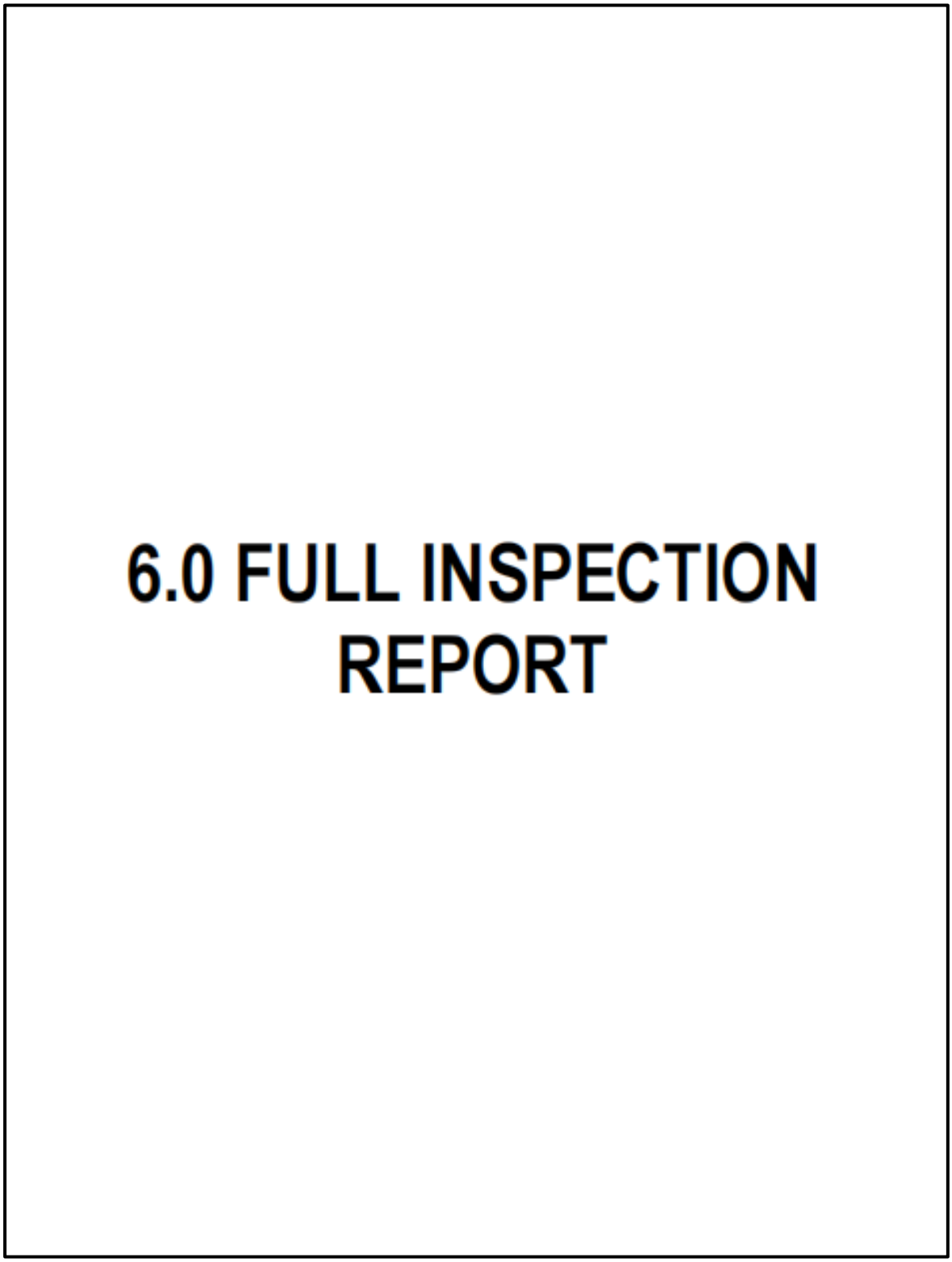



Figure 3.46 : Partition for Completed Report

### 3.4 Common Mistake while Preparing a Report

Common mistake while preparing a report can be categorized by the mistake that is made without being realized and it could also be the mistake from the data collection where the data that has been collected is not suitable to the level of defect. Those mistake are the most common accident that can be found during preparation of report. Below are some mistake that has been found from the "Mistake in Reporting' file at the company.

a) Wrong Defect :

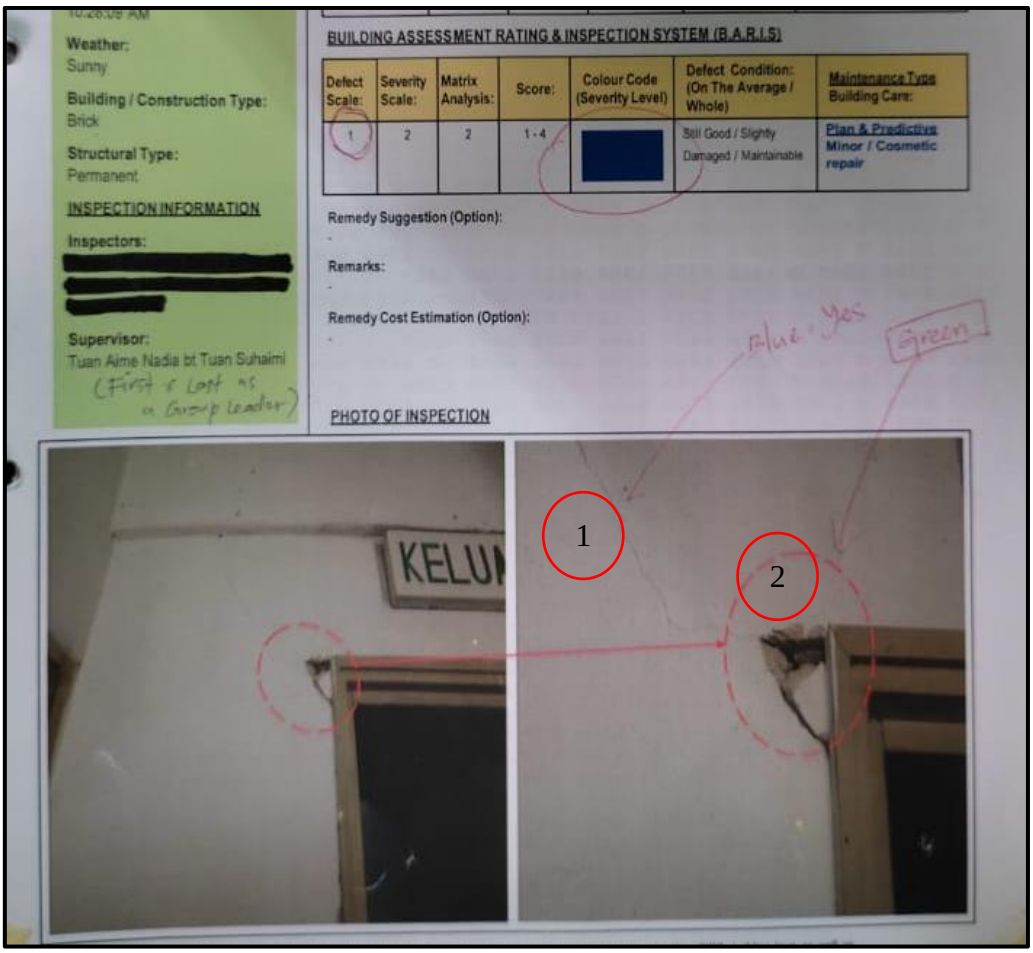



Figure 3.47 : Example of Wrong Defect Taken

Figure above shows a mistake of collecting data where in the picture it is shown two different type of defect where the first one is a crack line while the second one can be considered as broken. Therefore, in this problem, we need to prepare two

different form to avoid confusion. Other than that, at the colour code, it is shows a blue colour where it is stands for maintainable but the problem in this report is the defect that has been circled is the broken part where that defect is supposed to be green colour for its severity level as it need to be repair. From those mistakes, the whole report can be rejected as it was some kind of a very serious defect that may can cause any further problem to the building and also the occupants.

b) Wrong Measurement :

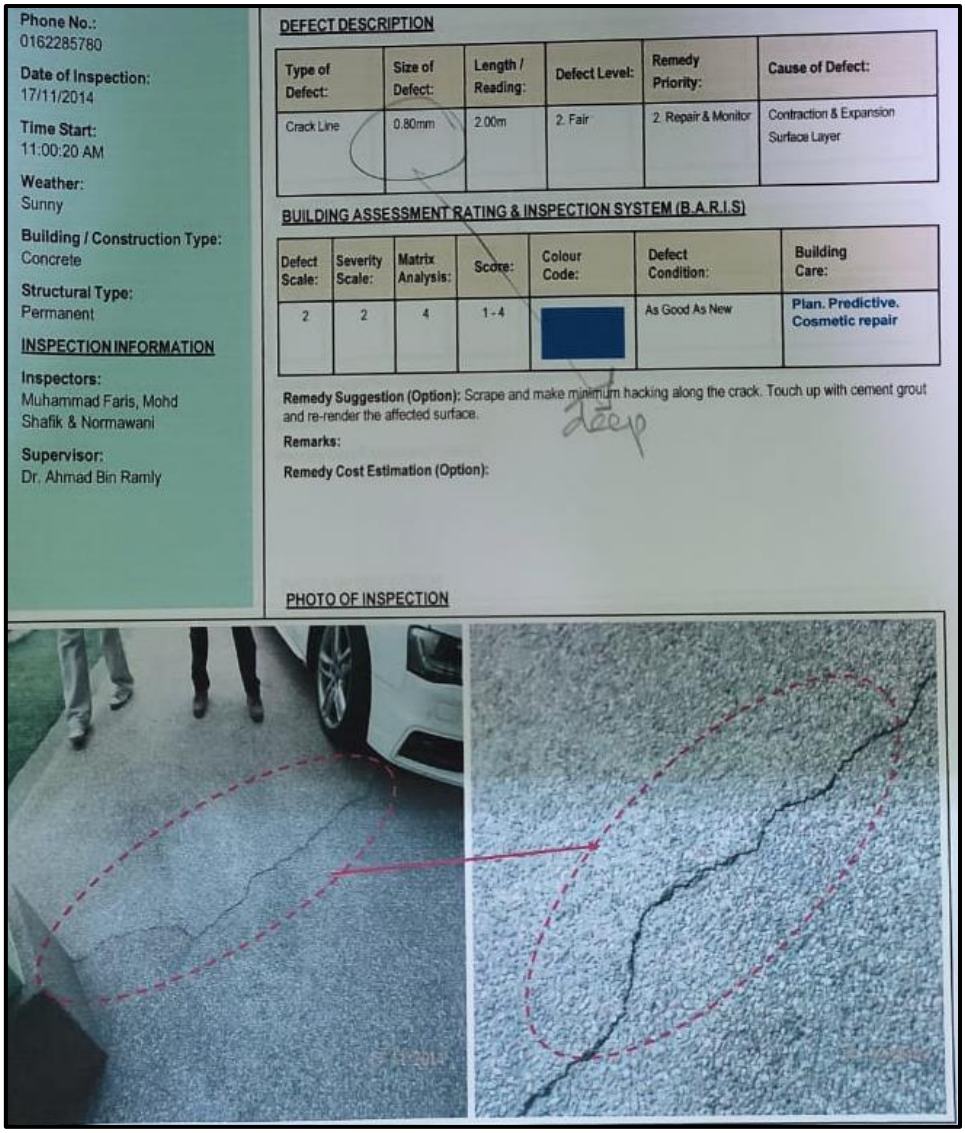
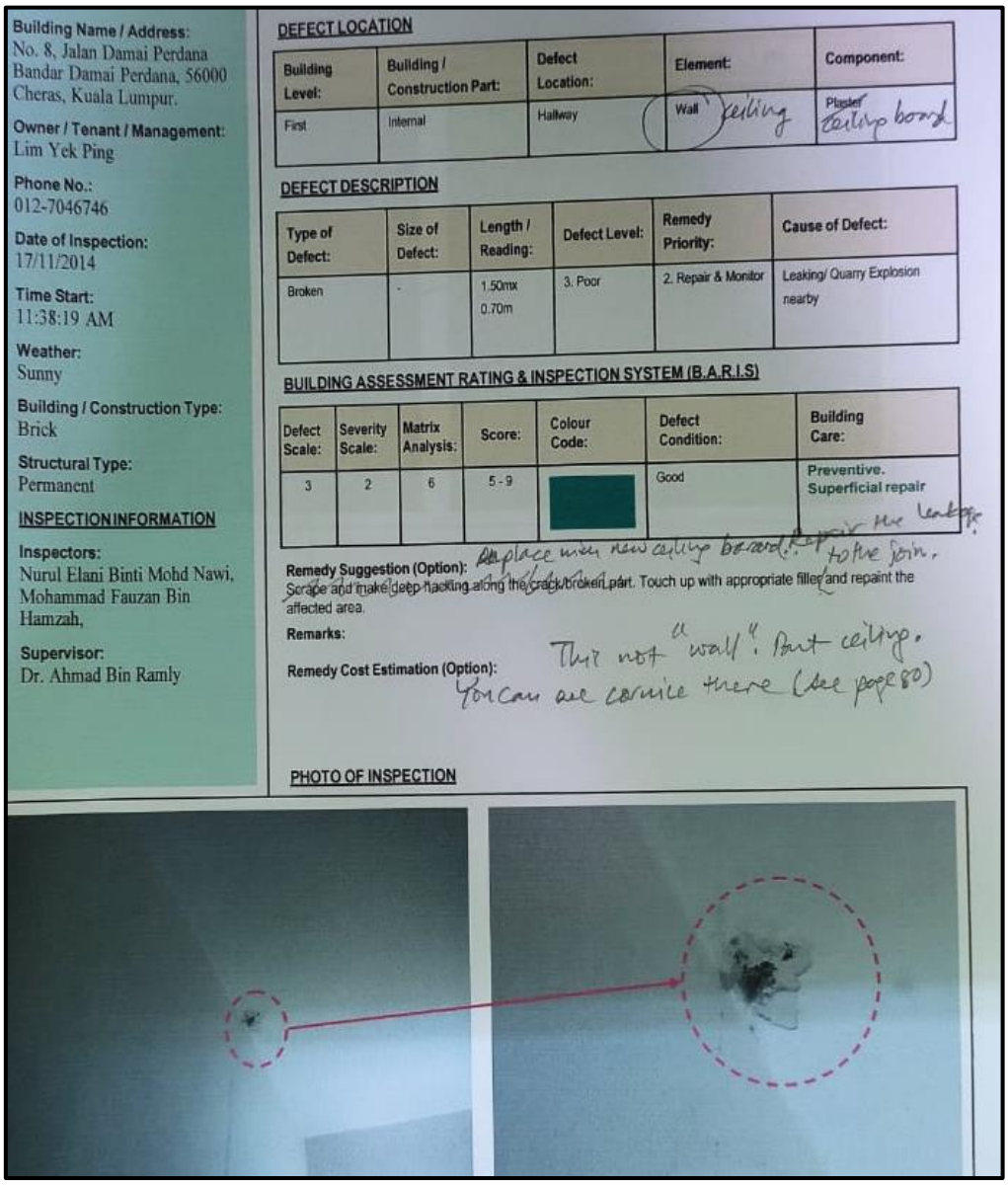



Figure 3.48 : Example of Wrong Measurement

Based on the figure 3.47, it is shows a mistake on measuring. Even the size of crack is small, the crack can be deep. Therefore, in taking data, the defect must be seen

more closely to identify either it was just an ordinary crack or deep crack as not every defect can be detected by only looking at the surface because sometime the outside looks fine but deep inside it was badly damaged. It must be hard to measure the depth as it was inside the ground but the inspector must be able to make an assumption by only looking at them.

c) Wrong Data Collection :



**Building Name / Address:**
No. 8, Jalan Damai Perdana
Bandar Damai Perdana, 56000
Cheras, Kuala Lumpur.

**Owner / Tenant / Management:**
Lim Yek Ping

**Phone No.:**
012-7046746

**Date of Inspection:**
17/11/2014

**Time Start:**
11:38:19 AM

**Weather:**
Sunny

**Building / Construction Type:**
Brick

**Structural Type:**
Permanent

**INSPECTION INFORMATION**

**Inspectors:**
Nurul Elani Binti Mohd Nawi,
Mohammad Fauzan Bin
Hamzah,

**Supervisor:**
Dr. Ahmad Bin Ramly

**DEFECT LOCATION**

| Building Level: | Building / Construction Part: | Defect Location: | Element: | Component: |
|---|---|---|---|---|
| First | Internal | Hallway | Wall / ceiling | Plaster / ceiling board |

**DEFECT DESCRIPTION**

| Type of Defect: | Size of Defect: | Length / Reading: | Defect Level: | Remedy Priority: | Cause of Defect: |
|---|---|---|---|---|---|
| Broken | - | 1.50mx 0.70m | 3. Poor | 2. Repair & Monitor | Leaking/ Quarry Explosion nearby |

**BUILDING ASSESSMENT RATING & INSPECTION SYSTEM (B.A.R.I.S)**

| Defect Scale: | Severity Scale: | Matrix Analysis: | Score: | Colour Code: | Defect Condition: | Building Care: |
|---|---|---|---|---|---|---|
| 3 | 2 | 6 | 5 - 9 | | Good | Preventive. Superficial repair |

**Remedy Suggestion (Option):** Replace with new ceiling board. Repair the leakage to the join.
Scrape and make deep hacking along the crack/broken part. Touch up with appropriate filler and repaint the affected area.

**Remarks:**

**Remedy Cost Estimation (Option):** This not "wall". But ceiling. You can see cornice there (See page 80)

**PHOTO OF INSPECTION**

Figure 3.49 : Example of Wrong Data Collection

Figure above shows a careless mistake that was made during the inspection work where the inspector have take a wrong data. The mistake was they wrongly state the element where it is suppose to be a ceiling but in the form they write the element as a wall. Even the defect is clearly located at the ceiling of the space but they still make a mistake. In addition, the ceiling was a board ceiling where it can definitely been replaced if it is broken. Therefore, it does not need any difficult procedure to repair those broken ceiling. As a reporter, we need to think logically about the remedy suggestion as our remedy will be referred to by the contractor for repair purposes.

d) Mistake in Taking Picture

This part is the most important data which it might give chaos to the report and the report might get rejected. Therefore, inspector must avoid from taking blur picture, taking too much pictures, picture where inspector can be seen in the picture and forget to take two types of pictures which is the zoom in and zoom out picture. This are the most common mistakes happen since there were too much defect in one building until sometimes it can lead them to miss some defects.

e) Additional mistake

Other than mistake that has been mentioned, there are other mistake that usually happen which is the time of the inspection works started. This is always happen especially to the ‘am’ and ‘pm’ words. This mistake always occurred as every single defect form need to be adjust its time according to the time stated in the picture of the defect taken. Therefore, they always forgot to change the time.

**Solutions Recommended**

Based on those mistakes, all of them are happen because of careless done by the consultant. Therefore, either while doing the inspection or preparing a report, the consultant must be alert by always recheck each of the spaces to ensure that all the data that has been insert are correct. For the mistake while collecting data, consultants must be careful with all the name of the component and the element that the components used. If they are taking a wrong information, it might effect the whole report. Especially when it comes to the reading or the measurement. In conclusion, no matter what work we are working on, we must be extra careful and it is fine to recheck our work for third to forth time as long as it will help on preventing ourselves from making mistakes.

# CHAPTER 4.0

# CONCLUSION

## 4.1 Conclusion

To conclude this report, producing a dilapidation report is not easy as it looks like as there were a lot of stage that need to be followed to produce a great report. Everything will be start with collecting data as in data collection process there were so much information that need to be taken and focused on because all the data then will be used as a references for repair work. In collecting data, inspector must be alert with the surroundings as they have to include the cause of the defects happen in the reports afterwards.

For the second objective where it was the main purpose of this report is made which is the procedure or the process of preparing a report. From the data collected, a report can be produce. This stage is the most challenging as there were a lot of step need to be followed. In inserting the data into the file maker application, every space must be filled and always remember to recheck every page to ensure that all of them are correct before converting to other format. If there were some mistakes occur, then need to re-do it again and this really can effect the due date where the report are supposedly submitted.

Next will be the last objective of this report where it is the common mistake that usually happen during the inspection and also during preparing the report. Both of this mistakes usually happens by accidents as sometimes the inspector mistaken the data and they also stating a cause of the defect or the remedy that does not fit the situation. Other than that, it is important to make sure that the picture taken is in a good quality and can be understand easily by the referrer.

For overall report, there were six process involved in general. Starting from the data collection during the inspection at the site where every detail about the defect will be taken according to the inspection form. Next, inserting data into the company's form which is the FileMaker Application and convert it up to the Microsoft Word for the next process. The fourth process will be the inserting picture of defect into the complete

form that has been converted earlier. After all the picture has been inserted, the floor plan of the building for every level will be drawn and each defect will be tag by number into the plan by following the number of defect in the defect form.. Last but not least, the report should be completed with a front cover page. Finally, everything can be compiled together into one report before handed it to the client.

In conclusion, producing a report for dilapidation survey is the most important process as it will be referred by the client and the contractor. Therefore, we need to pay attention more to the report by ensure every detail that has been filled is correct and easier to understand.

## REFERENCES

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Hong C. H. (2016), Investigation of Defects in New Buildings in Malaysia http://eprints.utar.edu.my/2310/1/CM-2016-1101687-1.pdf