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

TITLE:

BUILDING CONDITION ASSESSMENT AT DATARAN MAYBANK, JALAN MAAROF, BANGSAR

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2010997235
DIPLOMA IN BUILDING SURVEYING

PRACTICAL TRAINING REPORT
JUN 2013 – SEPTEMBER 2013

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ABSTRACT

This report will describes about the building condition assessment at Dataranmaybank, all the procedure and equipment, other than that there are few types of survey that can be done at building as maintenance strategy.

Building Condition Assessment is a part of Maintenance strategy that can improved the quality and performance of a building. In addition, we need to propose a rectification work in order to increase the efficiency of maintenance strategy that been implement in the DataranMaybank building. We as a one company that been hired, has to convince to the client with the new maintenance strategy. A Maintenance Strategy brought all current maintenance practices and operations together with current best practice in order to provide a strategic maintenance strategy in order to achieve the following goals:

i. Improving provision such services to the customer. It may reduce the breakdown and help to improve the uptime to perform the intended function.
ii. Controlling the cost spending and ensuring the expenditure on maintenance follow budget provided.
iii. Improve communication between maintenance department and other functional departments.
iv. To ensure maintenance department is focused on the company objectives.

If there is any changes that been made in the maintenance strategy, therefore it will affect the maintenance planning to which it has been assigned.

Result from the Building condition assessment, our company will listed of all defect at each element in the building and the total defect. Other than that we also identified the caused and overall condition at the building. Last we give opinion and suggestion to the client about the rectification work that should be done.

CHAPTER 1

1.0 COMPANY PROFILE

AFC
AMAS FM CONSULTANT

BUILDING SURVEYING CONSULTANT

Registered Consultant
With
Ministry of Finance Malaysia & Royal Institute of Surveyors Malaysia

TOWARDS
BUILDING PERFORMANCE

No.55-A JalanUdang Kara 31, Off Jalan Hassan, Sungai Udang, 41250 Klang, Selangor.
Tel: 03-3381 5445, Fax : 03-3381 5444,HP/WhatsApp/SMS No.: 019-2822820
Email: admin@amasfm.com / amasfm@gmail.com
Website:www.amasfm.com

AMAS FM CONSULTANT SDN. BHD. was established on 9th August 2012 and is registered with Ministry of Finance in the consultancy under Building Surveying section. AMAS FM is a consultant for Building Operation and Space Management Audit, Asset Inventory, Building

Hand-over and Building Condition Assessment. Our Objective is to share our vast knowledge and experience in Physical Asset Management in Malaysia. With the support of experience team members, we are responsive to present and future policy and economic.

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

1.1 VISION AND MISION

VISION

To be a premier Professional Bumiputra Asset Management Consultancy in-line with our customer and national Vision.

MISION

To upgrade the Facilities Management and Optimizing Asset utilization in a professional manner adopting industry's best practice, thus giving added value to our customer.

1.2 COMPANY INFORMATION

Company Name	: **AMAS FM CONSULTANT SDN.BHD.**
Registered Address	: No.55-A JalanUdang Kara 31, Off Jalan Hassan, Sungai Udang, 41250 Klang Selangor.
Telephone No.	: 03-33815445 (Office)
Hand Phone/WhatsApp/SMS No.	: 019-2822820 (Sr. Mutalib)
Fax No.	: 03-33815444
Email Address	: amasfm@gmail.com
Web Site	: www.amasfm.com
Company Registration No.	: 1013363W
Consultant Firm Registration No. (Ministry of Finance)	:J22006724261075241

1.3 SERVICE PROVIDED

- ***ASSET MANAGEMENT***
  - *Asset Register*
  - *Asset Condition Assessment*

- ***FACILITY MANAGEMENT***
  - *Operation and Maintenance Planning*
  - *O & M Costing*

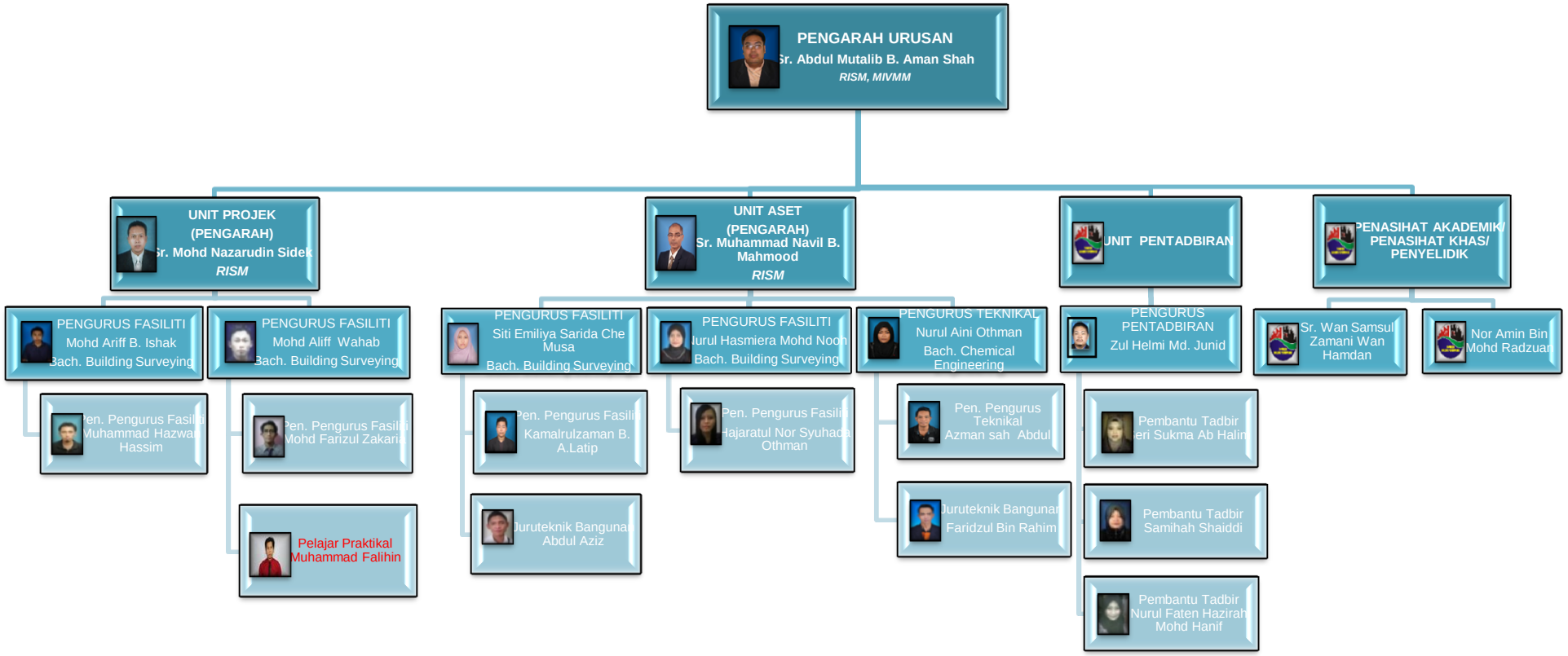
- ***PROJECT MANAGEMENT***
  - *Refurbishment works*

- ***SPACE MANAGEMENT***
  - *Inventory*
  - *Space Audit*

- ***BUILDING SURVEYING& BUILDING AUDIT***
  - *Building Inspection*
  - *Building Condition Survey & Building Audit*
  - *Defect Listing*
  - *Building Dilapidation Schedule*
  - *Hand-over Building*

- ***FM TRAINING***
  - *Audit Space*
  - *Management Space*
  - *Asset Register*
  - *Inventory / Asset Listing*
  - *Assessment / Inspection of Building Conditions*

1.4 ORGANIZATION CHART



1.5 EXPERIENCE/ CURRENT PROJECT 2012-2013

No.	Jobs Description	Customer / Client
1	Building Management Consultancy at Sri Ixora Apartment, 602 unit at Shah Alam	JumiaNiaga / JMB Sri Ixora
2	Building Management Consultancy at Laguna Biru Apartment, 1224 unit at Kuang Selangor	JumiaNiaga / JMB Laguna Biru
3	Involvement in developing the Best Practice for Space Management at Public Higher Learning Institution, organize by Ministry of Higher Education.	Ministry of Higher Education, Malaysia
4	Internal Consultant for Contractor to Preparation Building Plan, Numbering System and Space Inventory Data for MARA University Technology Shah Alam (UiTM) (Involved)	JumiaNiaga / UiTM
5	Dilapidation Survey For Proposed additional And Amendment for Existing Parking Containing Mixed Commercial Development: A) Block A (14th Floor 1 Floor Lobby Hotel Including 1) Hotel - (14th Floor 218 Room/12 Including Floor, B) Block B Incubator (14 vote includes 1 Floor Lobby 1) Office (Sovo) - Unit 180/9 Level 2) Office (Sovo 'Duplex') -40 Unit / 2 Floor, C) 1 Unit Based Upon chamber Garbage Land Lot PT 23773, No 5, JalanJalan multimedia, Section 40000 Shah Alam, Selangor DarulEhsan.	Sin SeongHinSdn. Bhd
6	Building Condition Assessment for Admin Building and Janamanjung 1 (Involved)	Manjung Power Station TNB JanamanjungSdn. Bhd
7	Facilitator For General Space Audit Course	Universiti Putra Malaysia
8	Facilitator For General Asset Management Introduction and Building Audit	Universiti Putra Malaysia
9	Building Audit Consultancy Work For DataranMaybank, Etiqa Twin Tower and Academy Etiqa. (Involved)	KFM Holdings Sdn. Bhd
10	Building Condition Survey For Mahindra Satyam Malaysia Global Solution Centre On Lot PT 12122, PersiaranApec, Cyberjaya, Selangor DarulEhsan.	CyberviewSdn. Bhd

Table 1.1 Company post project and in going project

CHAPTER 2

2.0 BUILDING CONDITION SURVEY

2.1 INTRODUCTION

Building condition surveys are essential to allow for the planning of building maintenance programs on any type of building, modern or historic, public or private.A condition survey is to provide an assessment of physical property conditions and professional opinion about current condition in building in terms building structure, architecture, mechanical & electrical appliances, the survey should identify deficiencies and maintaining issues including all asset in the property and to facilitate an informed decision making process, a condition survey should result in a clear understanding of the current condition of operating systems by a client.

Condition survey can be change based on client needed on their property, because of this there are several types of survey has been made to suit the client needs, commonly inspection are done via visual walk thru assessment at every part of property. The Building surveyor must prepared the report complete with all data, including test result (if any), calculations, detailed narrative, photographs and analysis, so the client and other interested parties have a clear understanding of the requested services, the report should state the purpose and scope of the survey. Depending upon the amount of information required by the client, condition surveys can be classified as preliminary or detailed survey.

2.2 TYPES OF SURVEY

2.2.1 DILAPIDATION SURVEY (PRE-CONSTRUCTION SURVEY)

Dilapidation Survey is also known as a pre-construction condition in Malaysia. A dilapidation survey done by a Registered Building Surveyor is an inspection of the existing structural condition of the surrounding buildings before the commencement of a demolition, construction or development. All prominent defects in the form of cracks, settlement, water seepage, corrosion of reinforcement, subsidence and other building defects will be recorded in photographs together with notes.A Post-Construction Condition Survey will highlight any building defects that have occurred (or caused by the construction works) since the first survey, or after a construction.

The purpose of these surveys is to provide an accurate record, pre-construction and post construction works, of the condition of the buildings. While it is not expected that neighboring construction will cause damage to any building, the survey is undertaken as a precautionary measure.
The report done by a Registered Building Surveyor will assist the building owners, contractors and developers in the event of a claim for damage, as the building survey report provides written documentation on the pre-construction condition of the property.

The Format report for the dilapidation are more simple compare to other survey, it only highlight defect that occur on the specific location that been agree by the client and the analysis will focus on the defect that have high index value.

Multilevel Parking Building, I-City

Photo.MP.LB3.I 3

Description: Close up view of fine vertical crack line on joint between wall and beam.	
Location/grid: B3,1C	CPI: Condition 2, Priority 1, Index 2.

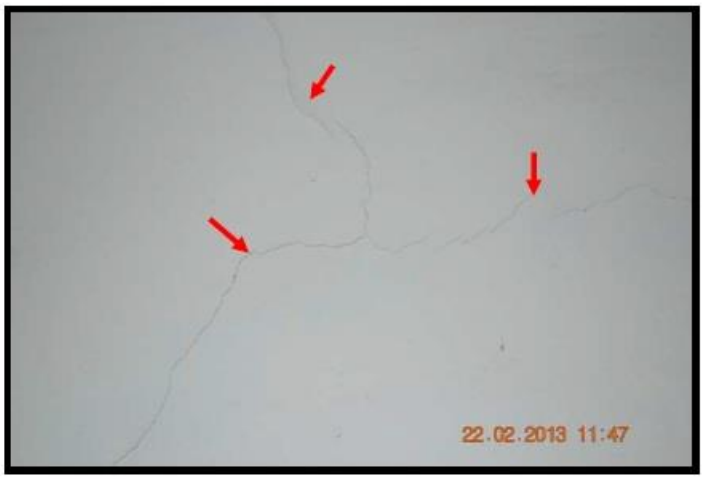


Photo.MP.LB3.I 4

Description: Fine diagonal crack lines on wall surfaces.	
Location/grid: B1,14B	CPI: Condition 2, Priority 1, Index 2.

Figure 2.1 Example of dilapidation survey defect sheet by AMAS FM

Rating assessment that been used based on the condition of defect by AMAS FM.

Score	Description
1 (Very good)	Asset is new or as new **No action required.**
2 (Good)	Asset requires minor repairs **Minor service required.**
3 (Fair)	Asset requires maintenance **Minor repair required.**
4 (Poor)	Asset is beginning to fail **Major repair work.**
5 (Critical)	Asset has failed **Requires immediate action.**

Table 2.1 Visual physical assessment(condition)

Priority	Rating	Description (Work to be carried out within)
Emergency	**4**	**3 hours**
Urgent	**3**	**24 hours**
Normal	**2**	**72 hours**
Renewal	**1**	**> 72 hours (agreed period)**

Table 2.2 Priority assessment (Priority)

2.2.2 DUE-DILIGANCE SURVEY (PRE-PURCHASE SURVEY)

These types of survey will assist the prospective buyers to have good understanding and information of property before they purchase the property and this type of survey also known as pre-purchase survey.

The surveyor will provide information on building defects on structural, architect, mechanical & electrical, it also explaining what the current condition of the building based on building rating assessment, explaining what the current repair and future maintenance are needed and estimating the cost overall . In other words, the pre-purchase survey report contains the findings and condition assessment for use by the buyers in consideration of their purchase of the property, or to decide whether or not the property is a reasonable purchase at agreed price.

The procedures of this survey basically are same as dilapidation but it more details, a surveyor must access all space in the building and collect all the data by inspects every element in the building. All the data will be compiling in report that contains all analysis and pin point to the high risk area in the building to notice the client.

A Pre Purchased survey can be used as a tool to identify deficiencies in building documentation, management or condition. Recommendations within the report can then be considered by the vendor and appropriate remedial actions undertaken prior to releasing for sale.

In this case a report will: -

- Consider the condition of the property, detailing immediate, future and legislative costs.
- The report will establish opportunities and limitations in connection with any refurbishment, reconfiguration or expansion works.
- The quality of historic and planned maintenance will be considered with experience and unbiased opinion provided.
- The survey will comment on legal compliance matters such as disabled access, fire safety and health and safety, noting any short falls and possible solutions.
- Essentially the report will detail deficiencies in the property which will affect sale ability or value and provide recommendations as to rectification works to a vendor prior to releasing the property for sale.

The second and more common approach is to provide an inspection report to be relied upon by potential purchasers and assigned to the eventual buyer.

Due diligence surveys offer a number of advantages:

- Speeds up the sale process and saves costs.
- Eliminates duplication by multiple buyers, who want answers to many of the same questions, and thereby significantly reduces the time demands.
- Assists maintaining a number of bidders running through to the later stages of negotiation by presenting information and analysis to potential buyers.
- Allows potential purchasers to clearly understand the property in the early stages, and therefore prevents price negotiations in the later stages of negotiation.
- It reduces the need for buyer's due diligence, and may reduce the amount of confidential material that is disclosed to the buyer.
- It answers many of the questions a potential purchaser will ask, limiting the need for extensive multiple inspections by potential purchasers.
- It gives the vendor more control over the sale process.
  It highlights any issues in the early stages allowing action to be undertaken to resolve concerns.

2.2.3 BUILDING CONDITION ASSESSMENT SURVEY

Building condition Assessment are essential to allow for the planning of building maintenance programs on any type of building, modern or historic, public or private.

Building condition Assessment are the key element in the prevention of costly works which can be avoided by forward planning.

Building condition assessment survey actually same as due-diligence survey but the purpose for client to measure the current condition and performance of their property until certain period (10 years-above), other than that it can include some addition survey for*space management* and *asset management*, other than find defects the survey also will calculate each space in the property and identify the asset in the property, usually this addition survey based on client request.

In space management, every space must be measured to calculate the suitable capacity of person in the building, in order to ensure space that being use is optimum.

Asset management is to register the entire asset in the property to:

- Establish and maintain asset information management system
- Registration shall contain the information assets can create a database to develop a comprehensive asset management system.
- Applying asset management system based on the application of information technology
- Asset information is continuously updated and easily accessible.

Kelas Aset	Nama Aset	Jenis Aset	Aset	Ciri Aset	Keterangan Aset	Dimensi	Jenis Kerosakan	Kondisi	No. Foto	Foto
Bangunan Akademik	FSPU Annex 3	Bilik Kuliah 1	Pintu	Timber Flush door	2 pintu kayu	4m(L)x0.90m(W)		2	HC 18 Mar Team A1 002	
Bangunan Akademik	FSPU Annex 3	Bilik Kuliah 1	Tingkap	Panel Kaca	4	1.10m(L)x1.50m(H)				
Bangunan Akademik	FSPU Annex 3	Bilik Kuliah 1	Dinding	Batu	4 permukaan dinding	7.0m (L) x 3.0m(H)				
Bangunan Akademik	FSPU Annex 3	Bilik Kuliah 1	Lantai	Konkrit						
Bangunan Akademik	FSPU Annex 3	Bilik Kuliah 1	Siling	Konkrit						
Bangunan Akademik	FSPU Annex 3	Bilik Pensyarah 1	Pintu	Timber Flush door	2 pintu kayu			4	HC Roads 22 Mar H3 218	
Bangunan Akademik	FSPU Annex 3	Bilik Pensyarah 1	Tingkap	Panel Kaca	4					
Bangunan Akademik	FSPU Annex 3	Bilik Pensyarah 1	Dinding	Batu	4 permukaan dinding					
Bangunan Akademik	FSPU Annex 3	Bilik Pensyarah 1	Lantai	Konkrit						
Bangunan Akademik	FSPU Annex 3	Bilik Pensyarah 1	Siling	Konkrit						
Bangunan Akademik	FSPU Annex 3	Makmal 1	Pintu	Sliding door	1 sliding door					
Bangunan Akademik	FSPU Annex 3	Makmal 1	Tingkap	Panel Kaca	4					
Bangunan Akademik	FSPU Annex 3	Makmal 1	Dinding	Konkrit	4 permukaan dinding					
Bangunan Akademik	FSPU Annex 3	Makmal 1	Lantai	konkrit						
Bangunan Akademik	FSPU Annex 3	Makmal 1	Siling	konkrit						
Bangunan Akademik	FSPU Annex 3	Makmal 1	Signage	"STOP"	Right-hand			2	HC 18 Mar Team A1 004	

Table 2.3 Example of Asset Registration Checklist by AMAS

CHAPTER 3

3.0 BUILDING CONDITION ASSESSMENT AT DATARAN MAYBANK, BANGSAR

3.1 INTRODUCTION

AMAS Fm Consultant Sdn.Bhd, was appointed by Etiqa property Management to carry out building condition assessment at DataranMaybank ,Bangsar.

In general, ***AMAS FM*** shall conduct building condition assessment via visual inspection and evaluations of the condition of the facility. This includes building, civil and structural assessment and also carries out assessment recommendation which is identifying major structural defects and recommending the remedial works to be carried out.

The work involved is to record the defects including type of defects and the amount of defects, provide repair recommendations, cause defects, overall condition and estimated cost to repair. Revisions will be made together with engineers and architects.

Defects are more critical, such as defects to the main structure, settlement, concrete roof leaks and modernizing mechanical and electrical systems require further examination by a specialist service that uses certain methods and equipment.

The recommending the rectification work by having look to their causes of defects. Factors influencing building defects are, Life of equipment, Poor construction, Poor maintenance and Wrong specification.

3.1.1 AMAS FM RATING SYSTEM

Rating system that been used for AMAS FM for this project, and the analysis based on Visual Condition Assessment (VCA), Priority Assessment (PA) and Building Rating Assessment (BRA), Table below is the analysis which made to help understanding the analysis.

A. Visual Condition Assessment (VCA)

Score	Description
1 (very good)	Asset is new or as new Sound modern components, all operatable and well maintained. **No action required.**
2 (good)	Asset requires minor repairs Sound modern components and well maintained, but showing superficial wear and tear. **Minor service required.**
3 (fair)	Asset requires maintenance All components functioning acceptably, but showing significant wear and tear with minor failures and efficiency diminished. **Minor repair required.**
4 (poor)	Asset is beginning to fail Effective life exceeded but still functioning. Or function and/or running costs affected significantly by failures or maintenance needs, or whole life costs excessive compared to replacement cost**.** **Major repair work.**
5 (critical)	Asset has failed Asset unserviceable. Electrically, mechanically or structurally unsafe. **Requires immediate action.**

Table 3.1 Rating System for condition of defect

B. Priority Assessment (PA)

Priority	Rating	Description (Work to be carried out within)
Emergency	**4**	**3 hours**
Urgent	**3**	**24 hours**
Normal	**2**	**72 hours**
Renewal	**1**	**> 72 hours (agreed period)**

Table 3.2 Rating for Priority of action to take

C. Building Rating Assessment (BRA)

Index	Condition Index	Category	Matrix	Range
1	**Good**	High	Plan Maintenance	**1 – 4**
2	**Fair**	Fair	Repairing	**5 – 12**
3	**Poor**	Low	Serious Attention	**13 – 20**

Table 3.3 Rating assessment by multiply condition and priority

3.2 BUILDING BACKGROUND

Figure 3.1 General views at DataranMaybank, Bangsar

DataranMaybank is 23-storey (include rooftop) corporate office building located at JalanMaarof, Bangsar, This building was officially launched by the former Prime Minister, Tun Abdullah Badawi in 2001, DataranMaybank comprises of 3 tower in which comprises of 20 storeys at Tower A and B. These 3 towers are the headquarters for maybank Finance, Maybank Life and Maybank Assurance and Etiqa office. It all also provides facilities such as 24 hours security, 1028 covered parking lots and centralized air conditioning, food court with seating capacity of 316 person, café, multi-purpose hall, sports recreation room, function room with approximately 800 sf each and sick bays.

3.2.1 PROPERTY DETAILS

Name : DataranMaybank

Address **:** 1, JalanMaarof, 59000, Bangsar, Kuala Lumpur

Type **:** Office

Tenure **:** Leasehold

No of Storey **:** Tower A and B – 20 storey Included Rooftop

Tower C 23 storey, Included Rooftop

3.1.2 FACILITIES

The Facilities that have in the Building as below:-

- 24hours Security
- 1028 covered parking lots
- Centralized air conditioning
- Food Court with seating capacity of 316
- Surau
- Multi-purpose hall
- Convenience shop & florist
- Sports recreation room
- Sick bay
- Functions rooms, approximately 800 sf each
- Product and art gallery
- Café

3.3 SCOPE OF WORK

Building Audit

The Audit will address the above issues on the following asset types:

- Building Foundations
- Walls Exterior
- Wall Interior and Ceilings
- Floors and Floor covering
- Roof

The Report for this work will include Defect Rectification Recommendation:

- Proposed defect rectification
- Cost estimation

3.4 WORK METHODOLOGY

1. Site reconnaissance - To identify buildings, infrastructures, ancillary buildings and structures of the adjoining properties to be surveyed.
2. Finalize with consultant or clients to get the confirmation of the proposed list of buildings, structures, infrastructures and ancillary buildings to be surveyed internally and externally.
3. Perform a visual survey and inspection of internal and external elements of a building and structure including but not limited to wall, column, beam, external facade, basement, pavement, driveway, apron, finishes and services.
4. Record and take both overview and close-up photographs of all visible defects, including but not limited to all cracks, signs of displacement or deformation, signs of dampness, corrosion of steel reinforcement, cracks, movement, settlement, heave, subsidence, tilting, sagging, distortion, any significant change of shape or dimension, detached or hollow elements, open gaps, seepage, wet patches, water leakage, spalled and deteriorated concrete, and existing associated repair works.
5. Describe cracks line according to the following four (4) categories;
    - Fine Crack for width less than 1mm;
    - Medium Crack for width, 1mm $\leq$ Crack $\leq$ 2mm;
    - Wide Crack for width, 2mm $\leq$ Crack $\leq$ 5mm; and
    - Very Wide Crack if the width exceeds 5mm
6. Measure and record the length and width of all cracks using measuring tape from accessible 2m from ground level.
7. Recommend areas for monitoring of cracks and other structural defects for further investigation.
8. Report shall contain the following features;
    a) Cover page with references to project name, work location, property identification.
    b) Introduction including property information and objective of the building condition assessment survey.
    c) Term of scope of work.
    d) Exclusion and limitation of Survey.
    e) Sketches and drawings showing the location of defect clearly.
    f) Dated photographs with labels and description (using digital camera format with a size not smaller than 8.25cm X 11cm.

g) Recommendation for remedial works
h) Cost estimating for repair works
i) All relevant correspondences with the property owner as an appendix or separate volume.
j) Summary of the survey.
k) Signature and professional endorsement page.

9. Immediately after conducting the survey, request the owners, tenants, residents, build management corporations or his/her/their representative to sign off a form to verify no loss of properties during the survey and to ensure that all defects have been captured and agreed.
10. A draft Building Assessment Survey Report shall be submitted for consultant's comments before final official report is submitted.
11. The report shall be neatly bound into ring binders according to sequence of surveyed properties. The soft copy of the final report in PDF format shall be stored in DVD-Rom and submitted together with the hard copy of the final report.
12. The time frame of condition survey is 15 days for the field works and 40 days for the report preparation.

3.5 PROGRESS DURING SITE INSPECTION

3.5.1 PRELIMINARY STAGE

Briefing by Sr.NavilMahmood and Sr. Abdul Mutalib at office, about the project *'Condition Survey Assessment at DataranMaybank (Bangsar), Etiqa Twins (Jalan Pinang), AkademiEtiqa (Masjid Jamek)'* They will explain the works that should be do and the period of the project, the project will be started at DataranMaybank, Bangsar, by divide by group of 3 and every group has team leader to lead at the site.

Every group will responsible for each tower, Dataranmaybank have 3 tower so that it can shorten time frame and each group will prepare the equipment that needed such as checklist, camera, reflector vest, digital caliper and single line as built drawing.

All field inspector was directed go to DataranMaybank for site reconnaissance so that they can plan they work flow during the inspection and Inform to the Building Facilities Management (ChuliaFm) about the inspection that will be carried out.

3.5.2 SITE INSPECTION (BASEMENT)

All field inspector will meet at DataranMaybank and go to the Building Facilities Management, and inform to them about our inspection area, because of this inspection was carry out during fasting month, our area for inspection are minimized. All field contractors will be given contractor pass and wearing a reflected vest so that can be notified by all people in the building

For the Starting to cover common area,

- 1st group cover basement parking area 1-3,
- 2nd group basement parking area 4-6
- 3rd group every room at the basement parking

Each group contain 2-3 people, 1 for taking photo, 1 fill up checklist, other if any, will do the mapping (location of defect)

Figure 3.1: Photo of General Condition at Basement 1 - 2

Figure 3.2: Photo of General Condition at Basement 3 - 4

Figure 3.3: Photo of General Condition at Basement 5 - 6

3.5.3 SITE INSPECTION (PODIUM)

The Podium is connected between the three towers, Tower A, Tower B and Tower C. Our Inspection will be carried out at common area at the building, after that contact the Management of the building to assist the inspector to every Office, Shop, Multi-purpose hall and other space that have in the podium Level 1 and Level 2.

Figure 3.4: Photo of General Condition at Podium Level 1C

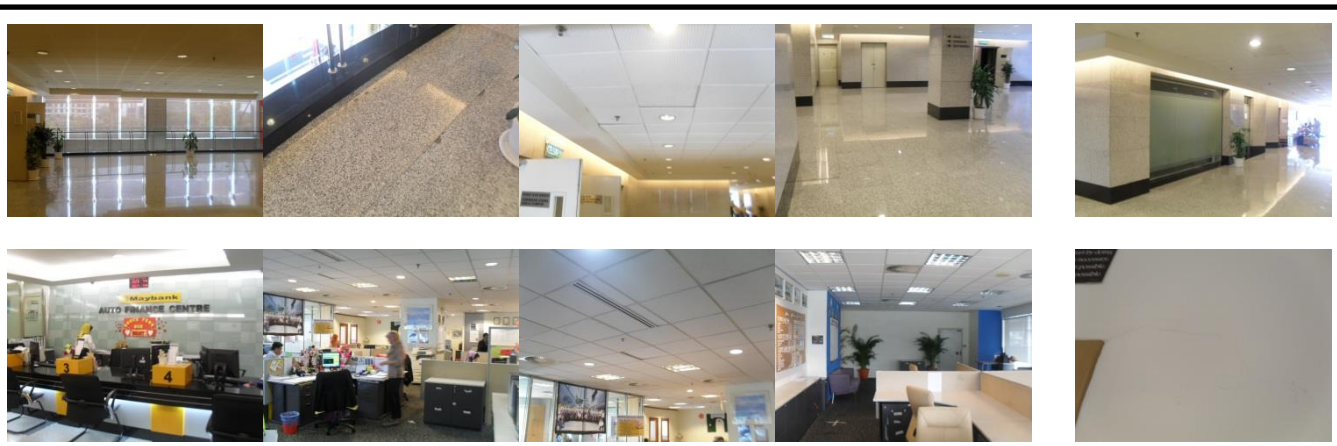


Figure 3.5: Photo of General Condition at Podium Level 2 C

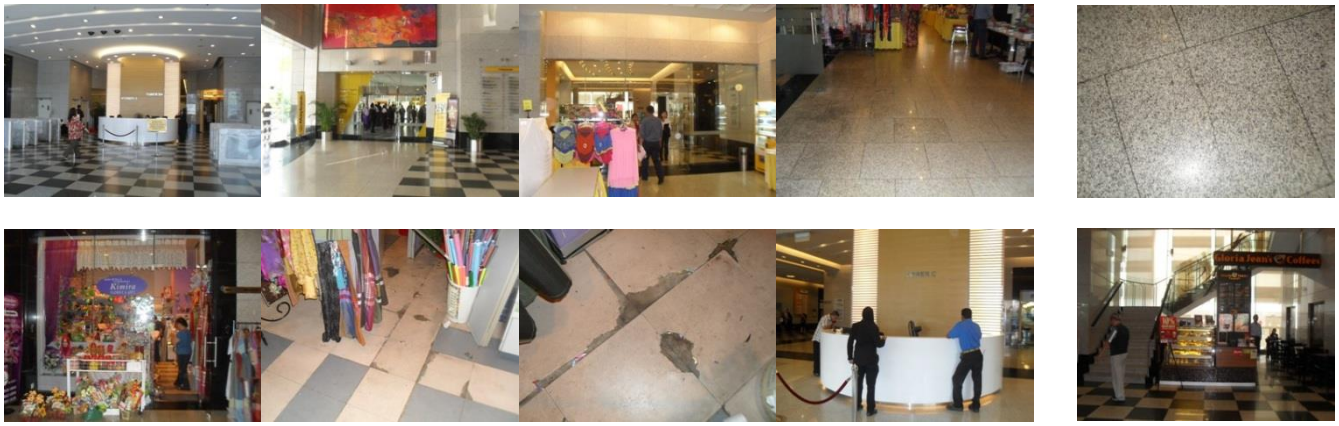


Figure 3.6: Photo of General Condition at Podium Level 1C

Figure 3.7: Photo of General Condition at Podium Level 2A-B

3.5.4 SITE INSPECTION (TOWER A, TOWER B, TOWER C)

The Inspection will continue at Tower A, B, C (office area). For this Area we must have staff from Building Management to follow and assist the inspection, office area basically strict and we have many problems during carried out the inspection

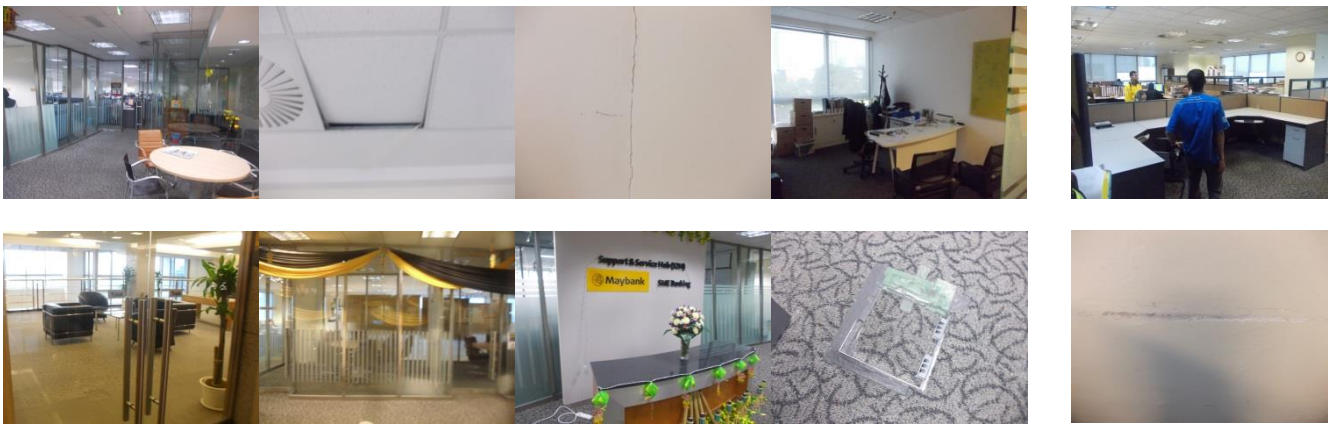


Figure 3.8: Photo of General Condition at Random Office Area Level 3-20 Tower A

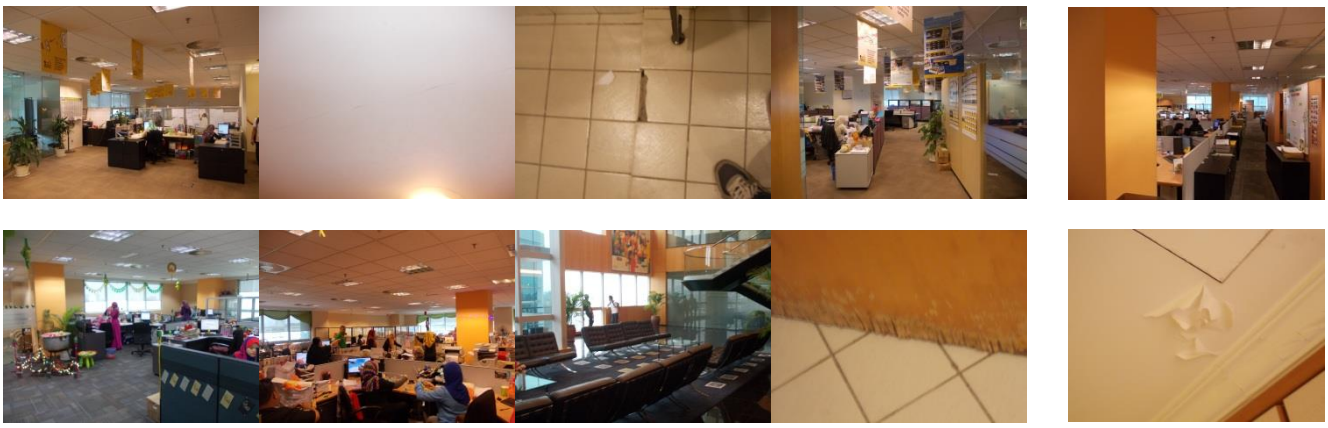


Figure 3.9: Photo of General Condition at Random Office Area Level 3-20 Tower B

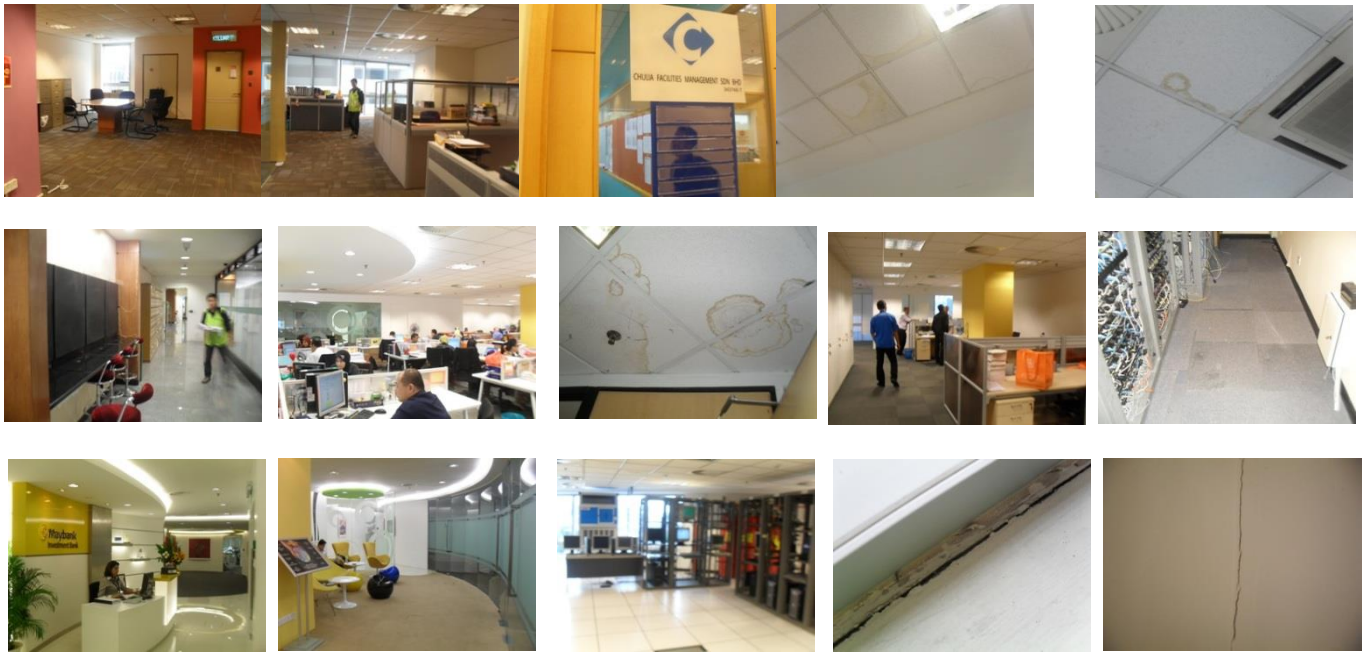


Figure 3.10: Photo ofGeneral Condition at Random Office Area Level 3-14 Tower C

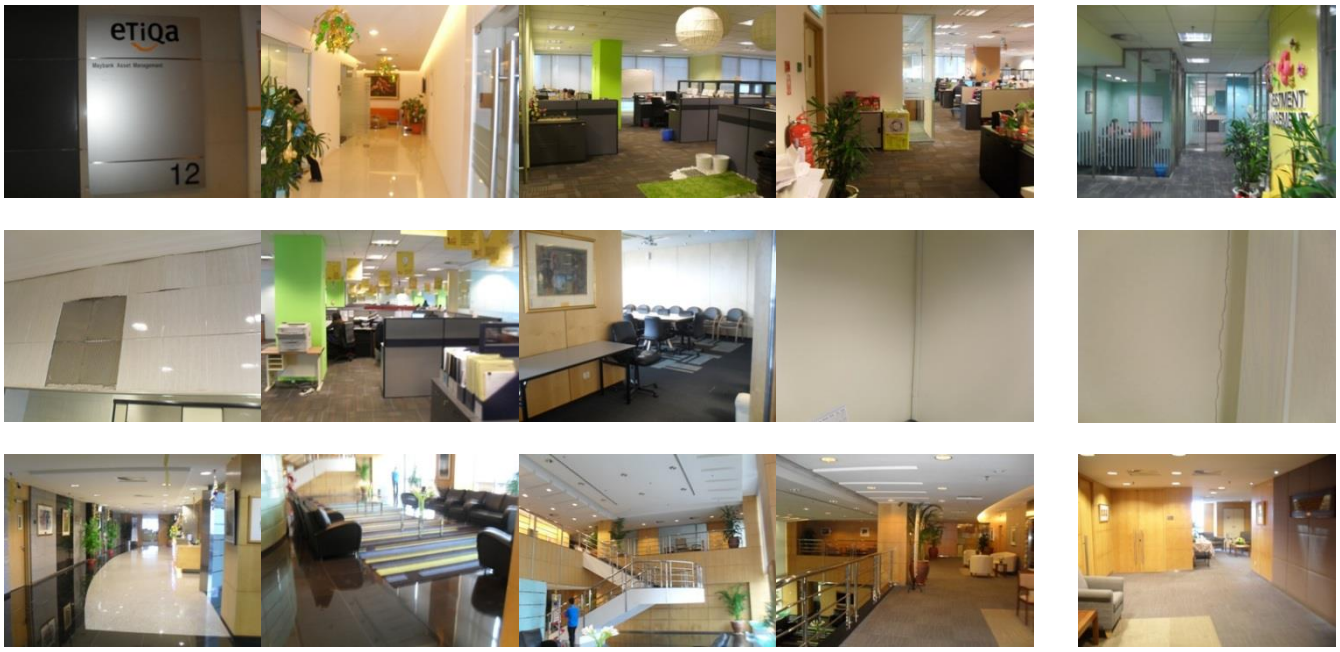


Figure 3.11: Photo of random General Condition at Office Area Level 15-22 Tower C

3.5.5 SITE INSPECTION (ROOFTOP TOWER A, TOWER B, TOWER C)

Tower A and B rooftop at level 20 and Tower C rooftop at level 22-23. Tower C has two rooftop because the level 24 is for gondola track the surround the building

Figure 3.12: Photo of General Condition at Rooftop Tower C level 23

Figure 3.13: Photo of General Condition at Rooftop Tower C level 24

3.5.6 PREPARING REPORT

After collecting all the data, Transfer the Data into MS-Excel and fill up the checklist that has been made, by using MS-Excel all the data will be analyzed for further manipulation if required. This technique has been used extensively by ***AMAS FM***and has proven to be most reliable and cost efficient in data collection projects

The benefits of this process include:

i. Data accuracy improved
ii. Cost efficient
iii. Minimized rework
iv. Increased data integrity
v. Single data entry

Bil	Asset Class	Asset Name	Asset Type	Asset Description	Asset Component	Defect	Condition (K)	Priority (U)	Index (I)	DSCN3851	Photo ID
158	DataranMaybank	Basement 3 A	Ramp	-	-	General View	1	1	1	SD 3 (2)	AR/DM/B3A/SD 3 (2)
159	DataranMaybank	Basement 3 A	Ramp	Ramp	Painted Wall	Crack on wall surface	3	1	3	SD3(7), SD3(8), SD3(9)	S/DM/B3A/SD 3 (7), S/DM/B3A/SD 3 (8), S/DM/B3A/SD 3 (9)
160	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (15)	S/DM/B3A/SD 3 (15)
161	DataranMaybank	Basement 3 A	Parking Lot	Wall	Wall finishes	Crack on wall surface	2	1	2	SD3(16), SD3(17), SD3(18)	S/DM/B3A/SD 3 (16), S/DM/B3A/SD 3 (17), S/DM/B3A/SD 3 (18)
162	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (25)	AR/DM/B3A/SD 3 (25)
163	DataranMaybank	Basement 3 A	Parking Lot	Wall	Wall finishes	Crack on wall surface	2	1	2	SD3(28), SD3(29), SD3(30)	S/DM/B3A/SD 3 (28), S/DM/B3A/SD 3 (29), S/DM/B3A/SD 3 (30)
164	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (36)	AR/DM/B3A/SD 3 (36)
165	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Water mark and crack on wall surface	4	2	8	SD3(38), SD3(39), SD3(40), SD3(41)	S/DM/B3A/SD 3 (38), S/DM/B3A/SD 3 (39), S/DM/B3A/SD 3 (40), S/DM/B3A/SD 3 (41)
166	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (42)	AR/DM/B3A/SD 3 (42)
167	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Crack on wall surface	4	1	4	SD3(43), SD3(44)	S/DM/B3A/SD 3 (43), S/DM/B3A/SD 3 (44)
168	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (45)	AR/DM/B3A/SD 3 (45)
169	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Peeling off plaster	4	1	4	SD3(46), SD3(47)	S/DM/B3A/SD 3 (46), S/DM/B3A/SD 3 (47)
170	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Crack on wall surface	4	1	4	SD3(48), SD3(49)	S/DM/B3A/SD 3 (48), S/DM/B3A/SD 3 (49)
171	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (50)	AR/DM/B3A/SD 3 (50)
172	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Water mark and crack on wall surface	4	2	8	SD3(51), SD3(52)	S/DM/B3A/SD 3 (51), S/DM/B3A/SD 3 (52)
173	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (53)	AR/DM/B3A/SD 3 (53)
174	DataranMaybank	Basement 3 A	Parking Lot	Retaining Wall	Concrete Wall	Water mark on wall surface	4	1	4	SD3(54), SD3(55)	S/DM/B3A/SD 3 (54), S/DM/B3A/SD 3 (55)
175	DataranMaybank	Basement 3 A	Parking Lot	-	-	General View	1	1	1	SD 3 (57)	AR/DM/B3A/SD 3 (57)
176	DataranMaybank	Basement 3 A	Parking Lot	Wall	Wall finishes	Crack on wall surface	3	1	3	SD3(65), SD3(66)	S/DM/B3A/SD 3 (65), S/DM/B3A/SD 3 (66)
177	DataranMaybank	Basement 3 A	Ramp	-	-	General View	1	1	1	SD 3 (69)	AR/DM/B3A/SD 3 (69)
178	DataranMaybank	Basement 3 A	Ramp	Ramp	Painted Wall	Crack on wall surface	3	1	3	SD3(72), SD3(73), SD3(74)	S/DM/B3A/SD 3 (72), S/DM/B3A/SD 3 (73), S/DM/B3A/SD 3 (74)

Table 3.1: Example of Data Entry in MS-Excel (COPYRIGHT AMAS FM)

3.5.7 BUILDING DEFECTS

Defect that score 3, 4, 5 will be transfer to defect s sheet for rectification work, here some example of defects sheet.

Building: DataranMaybank	**System**	**Element**	**Asset**	**Date** 30.7.13-23.8.13
	Architecture	**Floor**	**Floor Slab**	

Location : DataranMaybank/Basement 5/Staircase 16/Tower c	Ref. No: AR/DM/B5/DSCN0703, AR/DM/B5/DSCN0704
	
Defect: Water mark on floor surface	
Remarks: • Leaking from plumbing system at basement 2 (Staircase 16)	

Condition	3	**Priority**	2	**Condition Priority Index**	6

Recommendation:

- Check and Repair plumbing system
- Construct new cement screed
- Clarification from professional engineer are required to determine integrity of the structure (Wall and Floor)

Quantity : 1	Estimated Cost	RM3500

Building: DataranMaybank	System	Element	Asset	Date 30.7.13-23.8.13
	Architecture	Floor	Floor finishes	

Location : DataranMaybank/ Basement 1B/Food Court area/ Podium 1

Ref. No: AR/DM/B1F.C./DSC_0295, AR/DM/B1F.C./DSC_0296, AR/DM/B1F.C./DSC_0324, AR/DM/B1F.C./DSC_0325, AR/DM/P1/SDC14256, AR/DM/P1/SDC14257, AR/DM/P1/SDC14258

Defect: Peeling off floor finishes

Remarks:

- Wear and tear
- Deteriorated

Condition	3	Priority	1	Condition Priority Index	3

Recommendation:

- Replace floor tiles

Quantity :3	Estimated Cost	RM 1100

Building DataranMaybank	Element Structural	System Floor	Asset Floor Slab	Date: 30.7.13- 23.8.13
Location : DataranMaybank /B2B / Basement (Bilik Ejector 2)		Ref. No. AR/DM/B2B/DSCN0900, DSCN0901		

Defect: Dampness on floor surface

Remarks:

- Water leakage from plumbing system

Condition	4	Priority	4	Condition Priority Index	16

Recomendation:

- Check plumbing system
- Repair Plumbing system
- To pump out all the water

Quantity : 1	Estimated Cost	RM 3000

Building DataranMaybank	Element	System	Asset	Date
	Door	Architecture	Door Knob	30.7.2013-23.8.2013

Location : DataranMaybank/ Basement 2 / Stor DataranMaybank/ Basement 2 / Bilik ejector 2 DataranMaybank/ Podium 2 Tower C / Multipurpose Hall (Store) DataranMaybank/ Tower C / Staircase 9, DataranMaybank/ Level 10/ Tower B/ General Insurance Operation, Operation Services, Reinsurance, and Underwriting (Male Toilet)	Ref. No:AR/DM/B2B/DSCN0909, AR/DM/B2B/DSCN0885, AR/DM/B2B/DSCN0886, AR/DM/B2B/DSCN0888, AR/DM/P2/SDC14211, AR/DM/L1/DSCN1695, AR/DM/L1/DSCN1696, AR/DM/L4/DSCN0439, AR/DM/L4/DSCN0440, AR/DM/L10/DSCN0518, AR/DM/L10/DSCN0519, AR/DM/L20/DSCN0693, AR/DM/L20/DSCN0694, AR/DM/L3/SDC14434

Defect: Broken door knob, Rotted door surface, Rusty on door frame surface, Broken door frame, Damage door

Remarks:

- Vandalism
- Heavy used
- Exposed to water

Condition	5	Priority	2	Condition Priority Index	10

Recommendation:

- Repair door / Replace door
- Replace door knob
- Repair water sources

Quantity : 8	Estimated Cost	RM3250

Building: DataranMaybank	Element	System	Asset	Date : 23/7/2013-30/8/2013
	Railing	**Architecture**	**Painted railing**	
Location : Tower C / Level B3 / Staircase 16		Ref. No.:AR/DM/B3/DSCN0855		

Defect: Peeling off painted railing

Remarks:

- Rusted railing steel
- Water mark on the railing
- The moisture of the room basement

Condition	4	**Priority**	1	**Condition Priority Index**	4

Recomendation:

- Repaint the railing
- Check plumbing system

Quantity : 1	Estimated Cost	RM 700

Building DataranMaybank	Element Ceiling	System Architecture	Asset Soffit slab	Date: 23/7/2013- 30/8/2013
Location : Tower C / Level B2 / Staircase 16		Ref. No.: AR/DM/B2/DSCN0943, AR/DM/B2/DSCN0944		

Defect: Water mark on soffit slab surface

Remarks:

- The moisture of the room basement

Condition	4	Priority	1	Condition Priority Index	4

Recomendation:

- Remove stain
- Repaint the soffit slab
- Check plumbing system

Quantity : 1	Estimated Cost	RM1500

Building DataranMaybank	Element	System	Asset	Date 30.7.13-23.8.13
	Ceiling	Structure	Soffit Slab	

Location :	Ref. No
DataranMaybank / B2B (2) / Basement 2 / Bilik ejector 2 (Back)	AR/DM/B2B/DSCN0904, AR/DM/B2B/DSCN0905, AR/DM/B2B/DSCN0906, AR/DM/B2B/DSCN0907, AR/DM/B2B/DSCN0908,

Defect: Water mark and crack on soffit slab

Remarks:

- Watermark
- Water seep through
- Water proofing failure

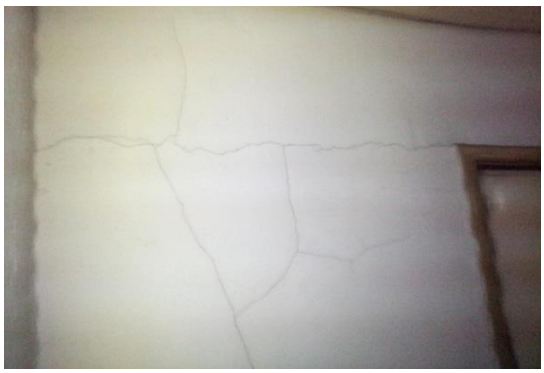
Condition	3	Priority	2	Condition Priority Index	6

Recommendation:

- Check piping system
- Concrete surface must be cleaned from any foreign particles.
- Crack on soffit slab must be stabilized using epoxy injection.
- To apply concrete repair product to the affected area
- Clarification from Professional Engineer are needed to determine the integrity of the structure

Quantity : 1	Estimated Cost	RM1,200

Building DataranMaybank	Element	System	Asset	Date 30.7.13-23.8.13
	Wall	Structure	Wall finishes,wall edge, wall corner, painted wall	

Location : DataranMaybank / Basement 1 B / Food Court Area DataranMaybank / B1 A& B1 B / Basement 1 A& 1 B / Parking Lot, DataranMaybank/ B2A & 2B (1) / Basement 2 A & 2 B (1) / Parking Lot, DataranMaybank/ B3 A, B3 B(1) &B3 B(2) / Basement 3 A, 3 B(1) 3 B(2) / Parking Lot, DataranMaybank/ B5A / Basement 5A/ Parking Lot, DataranMaybank/ Level 3, 6, 13, 15 / Tower A, DataranMaybank/ Level 11 / Tower B, DataranMaybank/ Basement 2 &5 / Staircase 16 / Tower C, DataranMaybank/ Level 6/ Tower A/ Handicaped toilet, DataranMaybank/Level B5/Staircase 16/Tower C	**Ref. No** AR/DM/B1F.C./DSC_0282,AR/DM/B1F.C./DSC_0265, AR/DM/B1A/DSCN0042, AR/DM/B1A/DSCN0044,AR/DM/B1A/DSCN0071,AR/DM/B1A/DSCN0120,AR/DM/B1A/DSCN0126, AR/DM/B1B/DSC_0513,AR/DM/B2A/DSC_0697,AR/DM/B2B(1)/DSC_0866, AR/DM/B3A/SD 3 (65), AR/DM/B3B(1)/SD 2 (12),AR/DM/B3B(1)/SD 2 (35), AR/DM/B3B(1)/SD 2 (49),AR/DM/B3B(2)/SD 1 (38), AR/DM/B5A/SDC13933,AR/DM/B5A/SDC13968, AR/DM/L3/DSCN2000, AR/DM/L10/DSCN0544, AR/DM/B5/DSCN0692,AR/DM/B2/DSCN0924, AR/DM/L6/DSCN2214, AR/DM/L6/DSCN2216, AR/DM/B5/DSCN0692, AR/DM/B5/DSCN0694
	

Defect: Crack on wall surface, Crack on wall corner, Crack on wall edge, Crack on wall tile

Remarks:

- Hair crack start to show
- Cause by traffic movement at parking area
- Mostly on mechanical room (Pump room, electrical)

Condition	3	**Priority**	1	**Condition Priority Index**	3

Recommendation:

- Fill the crack with plaster
- Replace new tile

Quantity : 33	Estimated Cost	RM14,900

Building DataranMaybank	Element	System	Asset	Date
	Retaining Wall	Structure	Concrete Wall	30.7.13-23.8.13

Location : DataranMaybank / B2B (1) / Biliktangki air /pam air, DataranMaybank / B2B (2) / Bilikkipassedutan, DataranMaybank / B4B (1) / Bilikkipassedutan, DataranMaybank / B4B (1) / BilikBilikKipasbekalan, DataranMaybank / B5A (1) / BilikBilikKipasbekalan DataranMaybank / B5A (2) / BilikBilikKipasbekalan	Ref. No: AR/DM/B2B/DSCN1297,AR/DM/B2B/DSCN1298, AR/DM/B2B/DSCN1299,AR/DM/B2B/DSCN1303, AR/DM/B2B/DSCN1304,AR/DM/B2B/DSCN1305, AR/DM/B2B/DSCN1049,AR/DM/B3A/DSCN1050, AR/DM/B4B/DSCN1162,AR/DM/B4B/DSCN1163, AR/DM/B4B/DSCN1208,AR/DM/B4B/DSCN1209, AR/DM/B5A/DSCN0730,AR/DM/B5A/DSCN0731, AR/DM/B5A/DSCN0742, AR/DM/B5A/DSCN0743
	

Defect: Water mark on wall surface, Peeling off paint on wall surface, Crack on wall surface, Leaking on wall surface

Remarks:

- Water proofing failure
- Water seep through

Condition	3	Priority	1	Condition Priority Index	3

Recommendation:

- Cracks on RC wall to be stabilized using epoxy injection
- To apply Concrete Repair product to affected area (product to be proposed by the awarded contractor
- Clarification from Professional Engineer are needed to determine the integrity of the structure

Quantity : 7	Estimated Cost	RM35,000

Building DataranMaybank	Element	System	Asset	Date
	Retaining Wall	Structure	Concrete Wall	30.7.13-23.8.13

Location : DataranMaybank / B1 A, B1B, B2B (2), B3 A, B4 A, B4 B (1), B4 B (2), B5 A, B5 B (1), B5 B (2), B6 A / Parking Lot	Ref. No: AR/DM/B1A/DSCN0165, AR/ AR/DM/B1B/DSC_0526, AR/DM/B2B/DSCN0891, AR/DM/B3A/SD 3 (38), AR/DM/B3A/SD 3 (43), AR/DM/B3A/SD 3 (46), AR/DM/B3A/SD 3 (48), AR/DM/B3A/SD 3 (51), AR/DM/B3A/SD 3 (54), AR/DM/B4A/DSCN3853, AR/DM/B4B(1)/SDC13873, AR/DM/B4B(2)/SDC13906, AR/DM/B5A/SDC13950, AR/DM/B5B(1)/SDC13976, AR/DM/B5B(1)/SDC13980, AR/DM/B5B(1)/SDC13995, AR/DM/B5B(2)/SDC14003, AR/DM/B5B(2)/SDC14004, AR/DM/B6A/SDC14056

Defect: Exposes reinforcement bar, Water mark on wall surface,

Remarks:

- Water proofing failure
- Water seep through
- Concrete cancer

Condition	4	Priority	3	Condition Priority Index	12

Recommendation:

- Cracks on RC wall to be stabilized using epoxy injection
- To apply Concrete Repair product to affected area (product to be proposed by the awarded contractor
- Clarification from Professional Engineer are needed to determine the integrity of the structure

Quantity : 23	Estimated Cost	RM104,000

3.7 BUILDING ANALYSIS

Building Analysis DataranMaybank

This Analysis is prepared for the Building Condition Assessment carried out for Etiqa Building at DataranMaybank.

Our scope of work carried out includes building structures, ceiling and roof finishes, walls and openings, floor finishes, facade and mechanical and electrical inspection. The inspection is carried out via visual walk-thru.

The work involved is to record the defects including type of defects and the amount of defects, provide repair recommendations and overall condition.

From our inspection and analysis, we found that all three building are in fairly good condition. However there are some inspected elements which need serious attention which we are recommending for the appointment of Professional Engineer to assess and evaluate for further action. For DataranMaybank, there are 4 elements need to be clarified by professional engineer, those elements are;

Column

We noted that generally the column is in good condition however we noted few columns at level basement 3 are broken with exposed steel bar. Also, we noted that the wall at basement 1 broken on the wall surface. Clarification from professional engineer is needed to determine the integrity of the column and the wall.

Roof Top

Significant signs of fine cracks were observed at most of the area of floor. This is probably due to the weather and insufficient water content during the construction curing process. We were unable to inspect the soffit underneath the roof level as the area is covered with ceiling. We did not see any sign of watermark on the ceiling. Clarification from professional engineer need to determine the integrity of the roof top's floor.

Wall

We noted that generally the plaster brick wall and glass panel is in good condition however significant signs of crack, water mark, and peeling off paint on wall surface were observed at the general office area (every floor),toilet area (every floor) and staircase. We are proposing the advice from Structural Engineer to inspect and analyse the present floor and floor design loading.

Basement

Significant signs of cracks and water mark were observed at most of the area of retaining wall. This is probably due to the insufficient water content during the construction curing process and water seep through from outside. Clarification from professional engineer need to determine the integrity of the wall.

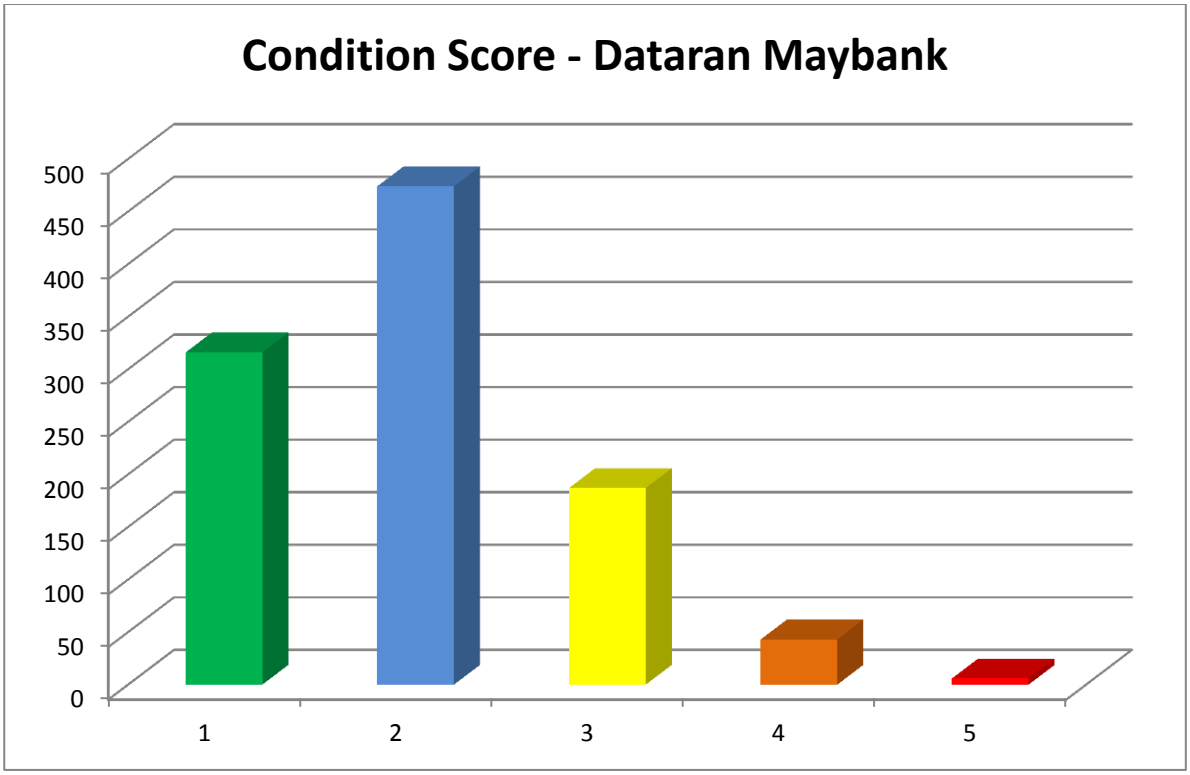
In general, DataranMaybank can be classified as a building which is maintained fairly with some servicing and minor repair work to be carried out in order to upgrade to a good maintenance rating

The physical inspection conducted from 30thJuly 2013 until 16th August 2013 covers general condition assessment of building and structural

We were made to understand that the DataranMaybank was constructed sometime in year 2000 as the office building. The building consist three towers with 22 storey and 20 storey each.

General Assessment of Building and Structural

The general condition of the building was sound, with little or no evidence of deterioration of the building structures. Structural systems of the building mainly consist of concrete on retaining wall, plastered brick on internal and external wall, concrete slab on ground with cement.



Graph 3: Show Condition Score for DataranMaybank

For condition 1, there are 316, as new. Condition 2, there are 474, minor service. Condition 3, there are 187, minor repair. Condition 4, there are 43, major repair. Condition 5, there are 6, replacement

SUMMARY QUANTITY DEFECT SCALE		Priority				Total
		Urgent	Immediate	Normal	Low	
		4	3	2	1	
Condition	1	0	0	0	0	0
	2	0	0	63	411	474
	3	0	1	27	159	187
	4	10	5	12	16	43
	5	6	0	0	0	6
Total		16	6	102	586	710

Table 1: Summary Quantity Defect Scale for DataranMaybank.

Condition Index (Matrix)	High Priority (Serious Attention)	Fair Priority (Repairing)	Low Priority (Plan Maintenance)
Quantity (Nos)	**16**	**45**	**649**
Percentage	**2.25%**	**6.34%**	**91.41%**

Table 2: Overall Summary Quantity Defect Scale for DataranMaybank.

Table1 shows the summary quantity defect scale. 474 defects out of 710 are requires minor services. 187 defects out of 710 are requires minor repair. 43 defects are requires major repair works. 6 defects require immediate action. 16 defects out of 710 are requires immediate remedial works. 45 defects are requires normal priority of remedial works and 649 requires low priority remedial works.

CHAPTER 4

4.0 COMMENT AND RECOMMENDATION

4.1 COMMENT

Based on the inspection that been made, there are many problems occur during the inspection at the building. Majority users in the building hard to give permissions to inspect their office because they don't know what we do during the inspection. The client that appointed AmasFm to carried out building condition assessment also did not inform all tenant about the building condition assessment that been carried out. These problems make our work delay a few days so that is waste our time.

4.2 RECOMMENDATION

The client should have informed all the tenant or users in the building so that they will have been notice, in order for us to carry out Building condition Assessment.

In terms of Building condition assessment, Analysis that we have been made in that building is that they should have given more attention to their basement because they a many defect occur at the retaining wall and this entire defect are caused by water penetration from underground water. Clarification from Professional Engineer is needed to examine the problems.

On the major issues, the concern that we raised for DataranMaybank building are mainly on structural integrity at roof top's floor, columns and wall at the basement areas. We would highly recommend for upgrading of the servicing and minor repair work which we have listed and attend then to upgrade the Building Condition Assessment (BCA) rating from fair maintenance to good maintenance.

Proposed Maintenance Planning

1. Preventive Maintenance

   Prevent failures of building systems that would interrupt occupants 'activities and the delivery of public services. Buildings that operate trouble-free allow public employees to do their jobs and serve the public. Because preventive maintenance includes regular inspections and replacement of equipment crucial to operating a building, maintenance staffs reduce the problems that might otherwise lead to a breakdown in operations.

   Help buildings function as they were intended and operate at peak efficiency, including minimizing energy consumption. Because preventive maintenance keeps equipment functioning as designed, it reduces inefficiencies in operations and energy usage.

   Provide maintenance in ways that are cost-effective. Preventive maintenance can prevent minor problems from escalating into major system and equipment failures that result in costly repairs. In avoiding costs of major repairs, preventive maintenance creates efficiencies. Increasing preventive maintenance can reduce time spent reacting to crises, which is a more cost-effective way to operate buildings. Deferring preventive maintenance can generate higher costs over the long term.

Reorganization of Building Facilities Management

The building management must reorganize or restructuring to ensure the building are well maintain, the company must set new mission and vision so that new goal can be achieve, Reorganization is the corporate management term for the act of reorganizing the legal, ownership, operational, or other structures of a company for the purpose of making it more profitable, or better organized for its present needs. Other reasons for reorganization include a change of ownership or ownership structure, demerger, or a response to a crisis or major change in the business such as bankruptcy, repositioning, or buyout. At some point, virtually every business goes through a reorganization of some kind. New technology, new or changing laws that affect business and actions that competitors take can mean the company must change or lose its competitive edge. It's up to human resources professionals to help everyone in the company come through the transition successfully.

Changes might take the form of:

- Scope of works
- New procedures of Maintenance plan
- Downsizing and layoffs
- Expansion into new locations, markets, technologies, or offerings

CHAPTER 5

5.0 CONCLUSIONS

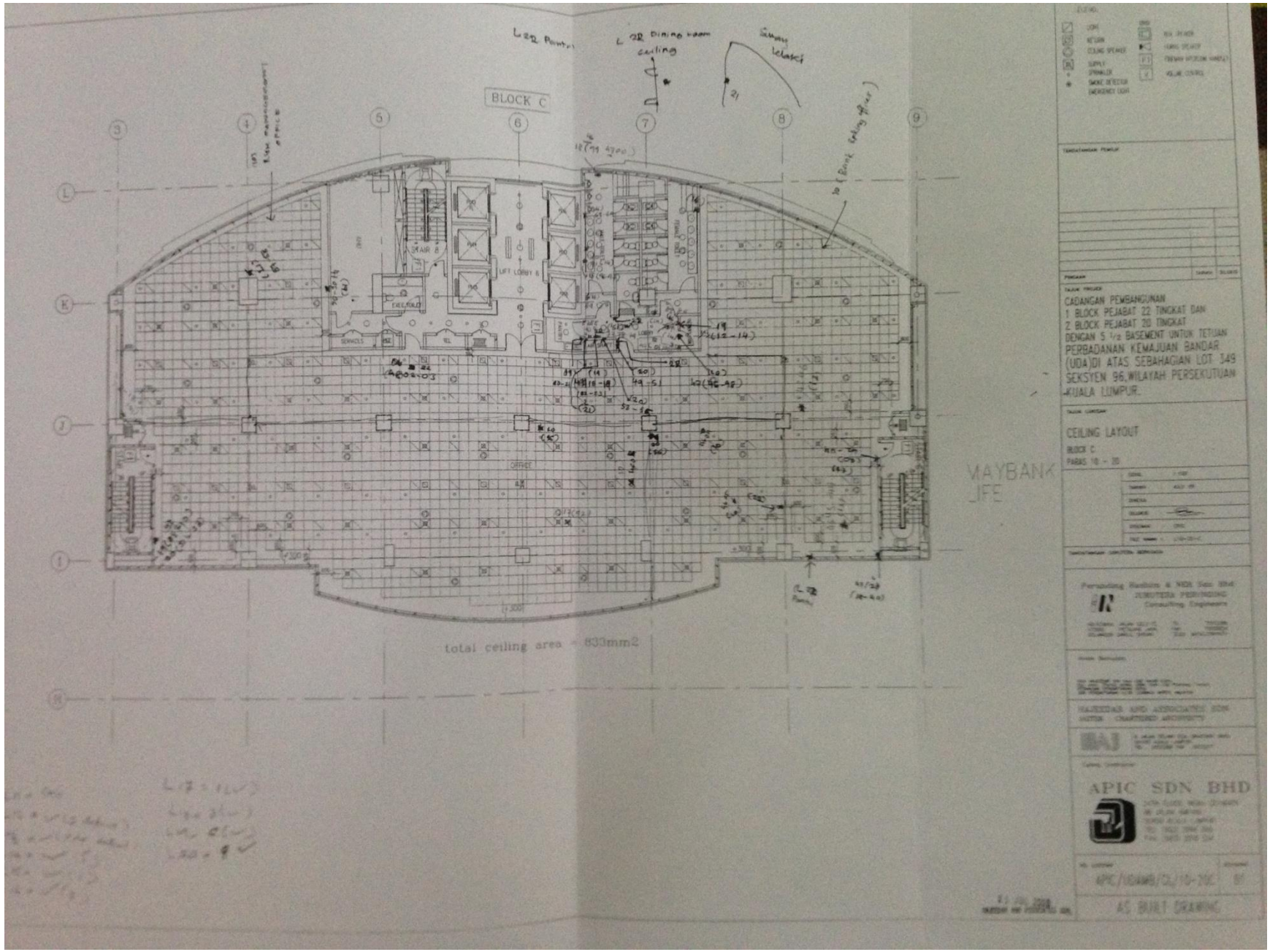
Building Condition Assessment in Malaysia a new scope of work, in Europe the building will be inspect every 10 years or above, this is to determine the building performance in order to ensure the building are well performed in the future and well maintained, because of this the management can save cost in the future. Building condition assessment also part of Maintenance Strategy, it is important in the building to avoid and prevent any defect that could happen. Maintenance is work that is carried out to preserve an asset in order to enable its continued use and function, above a minimum acceptable level of performance, over its design service life, without unforeseen renewal or major repair activities. Maintenance strategies need to be used in maintenance department in order to produce good quality of services.

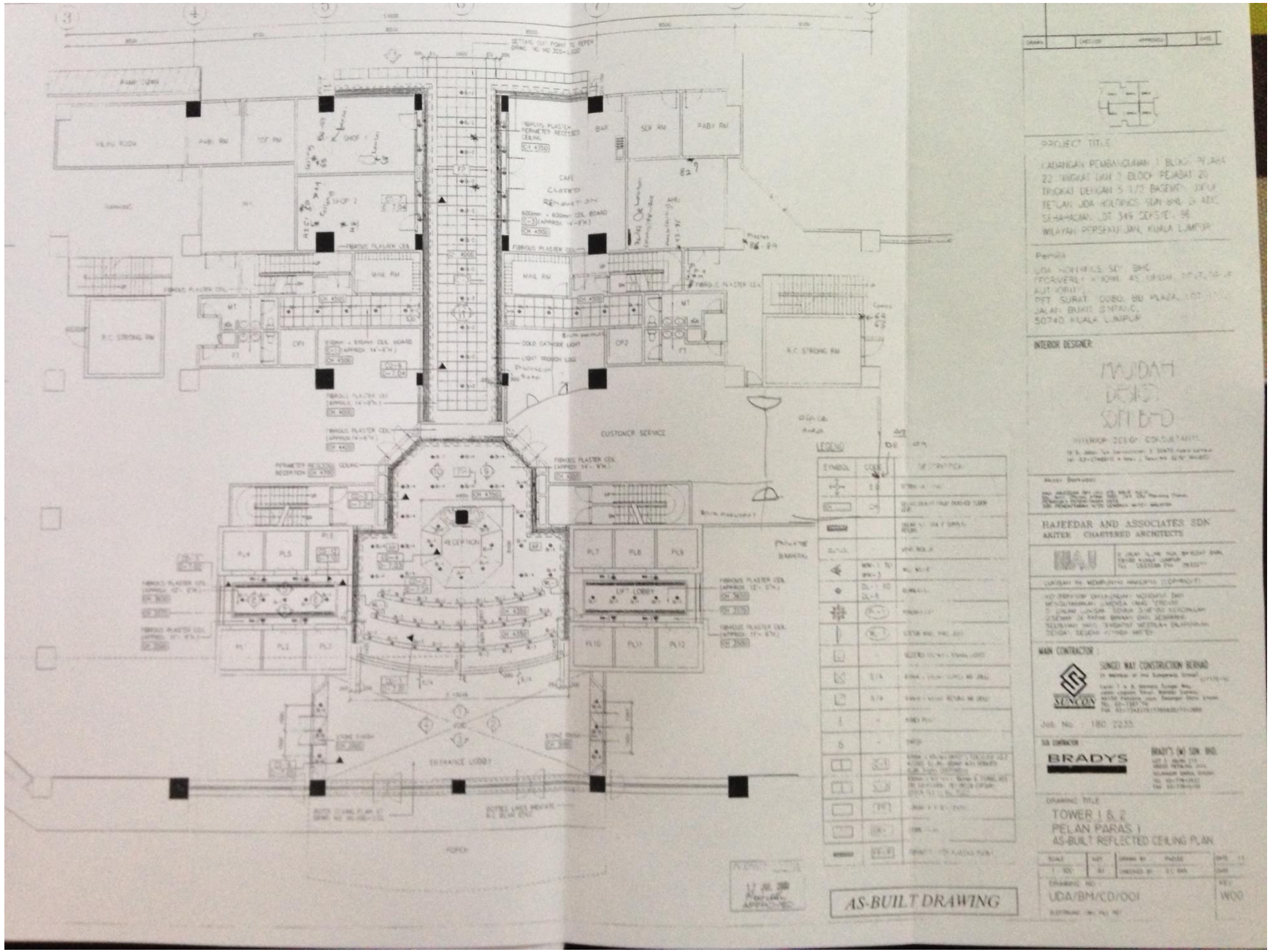
In other hand, the maintenance management need to do early planning related to the maintenance planning and programmed. Thus, it will affect the servicers' standard and quality standard in each of the building. It relate with the response time toward the failure of the building.

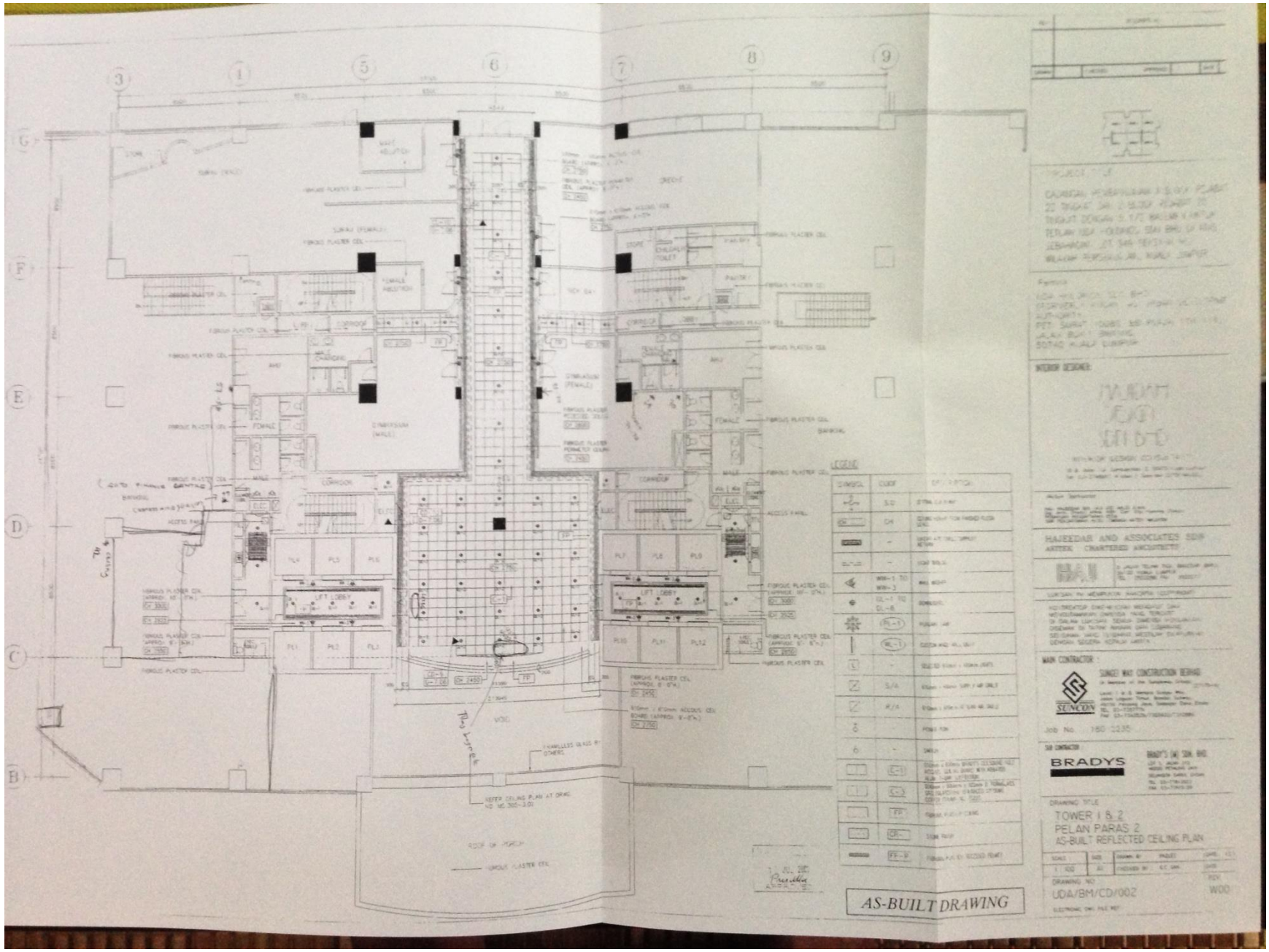
REFERENCES

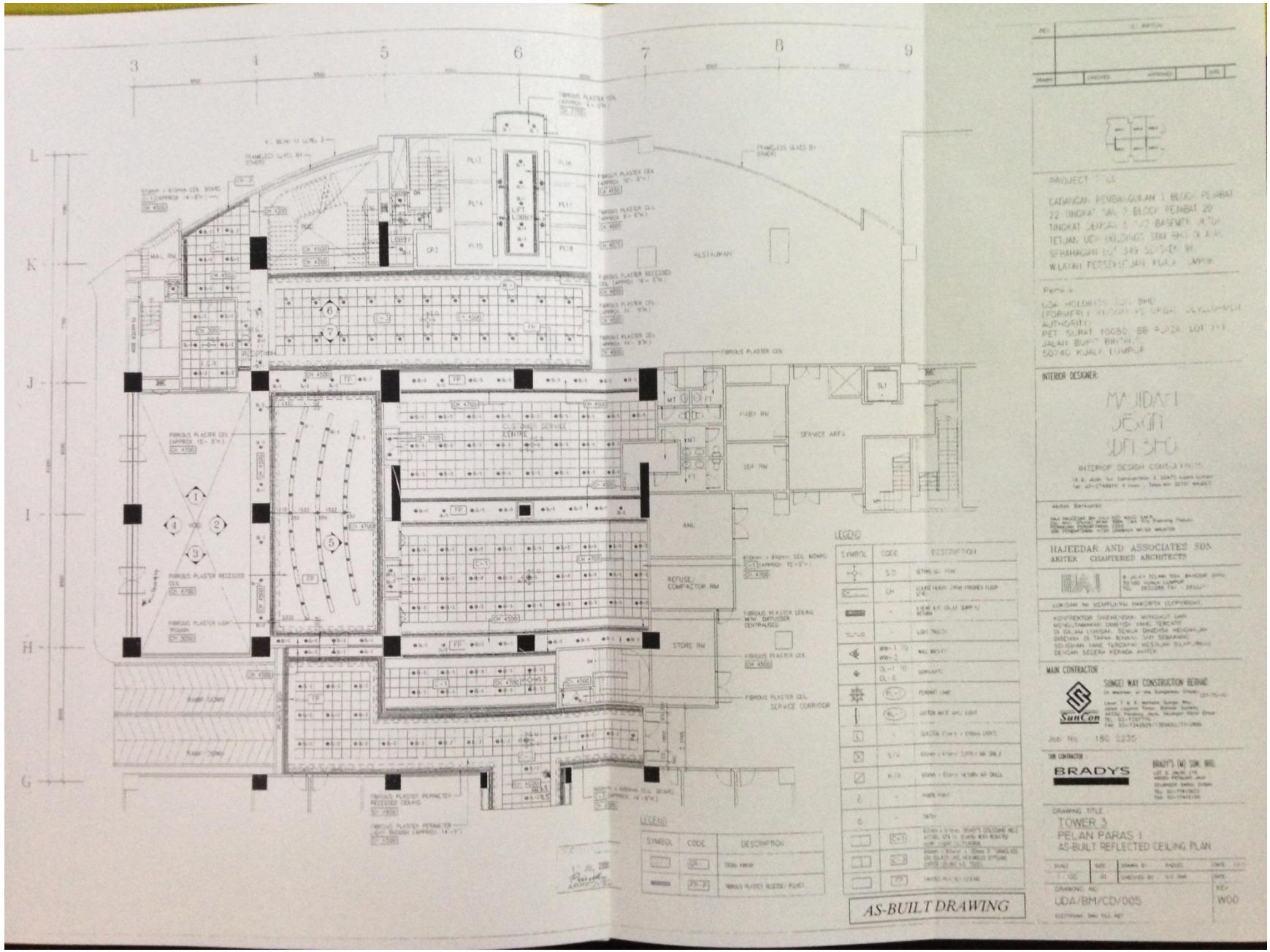
- Interview with Amas Fm. Sr Abdul MutalibAmanSyah, SrNavilMahmod
- http://buildingsurvey.blogspot.com/2008_03_16archieve.html (17/8/2013)
- Etiqa property management
- ChuliaFm (Building Facilities Management)
- *Property condition Assessments by Sam Kubba (2007)*
- *Building Surveys by Peter glover (8th Edition) 2013*

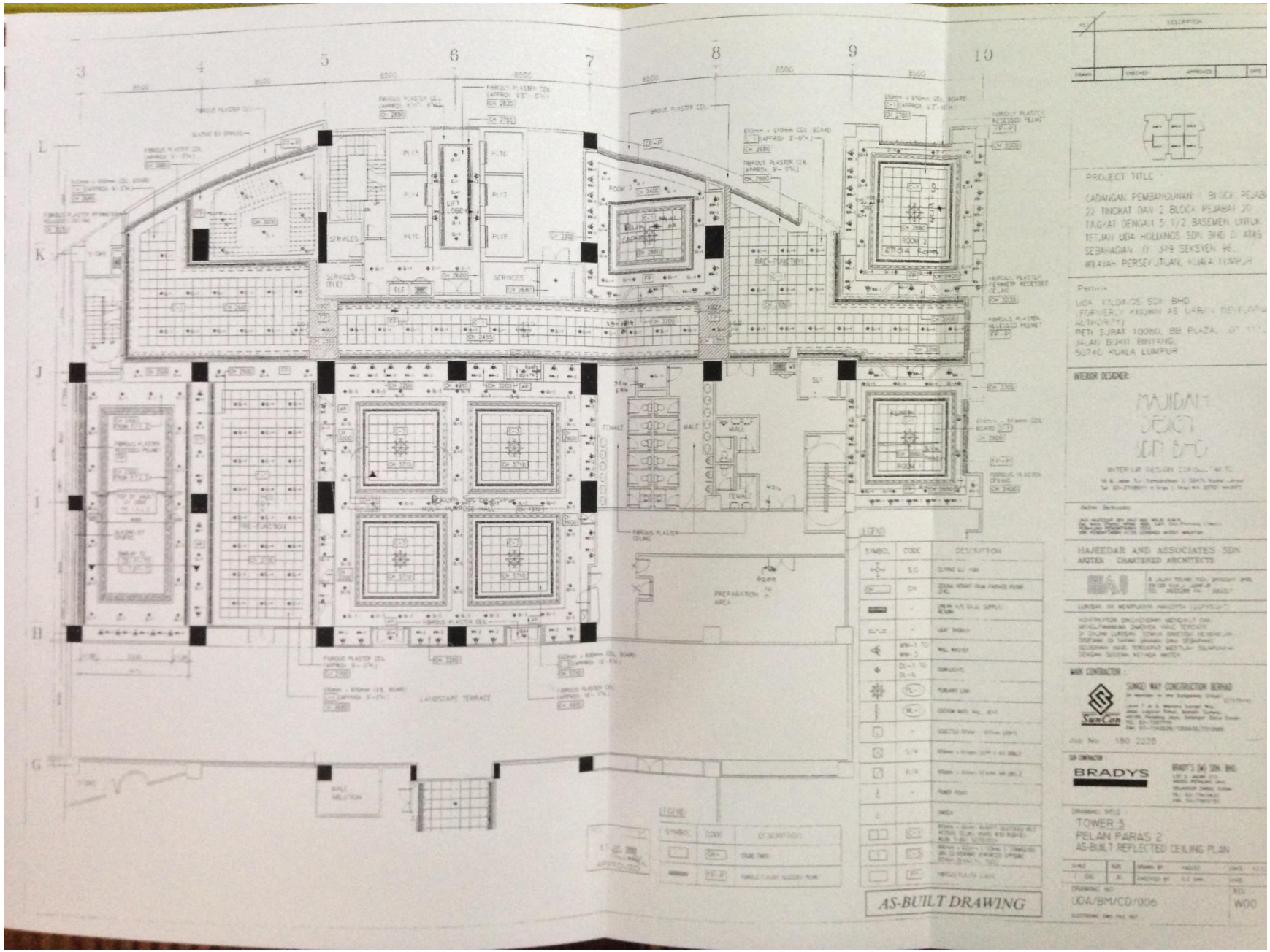
APPENDIX

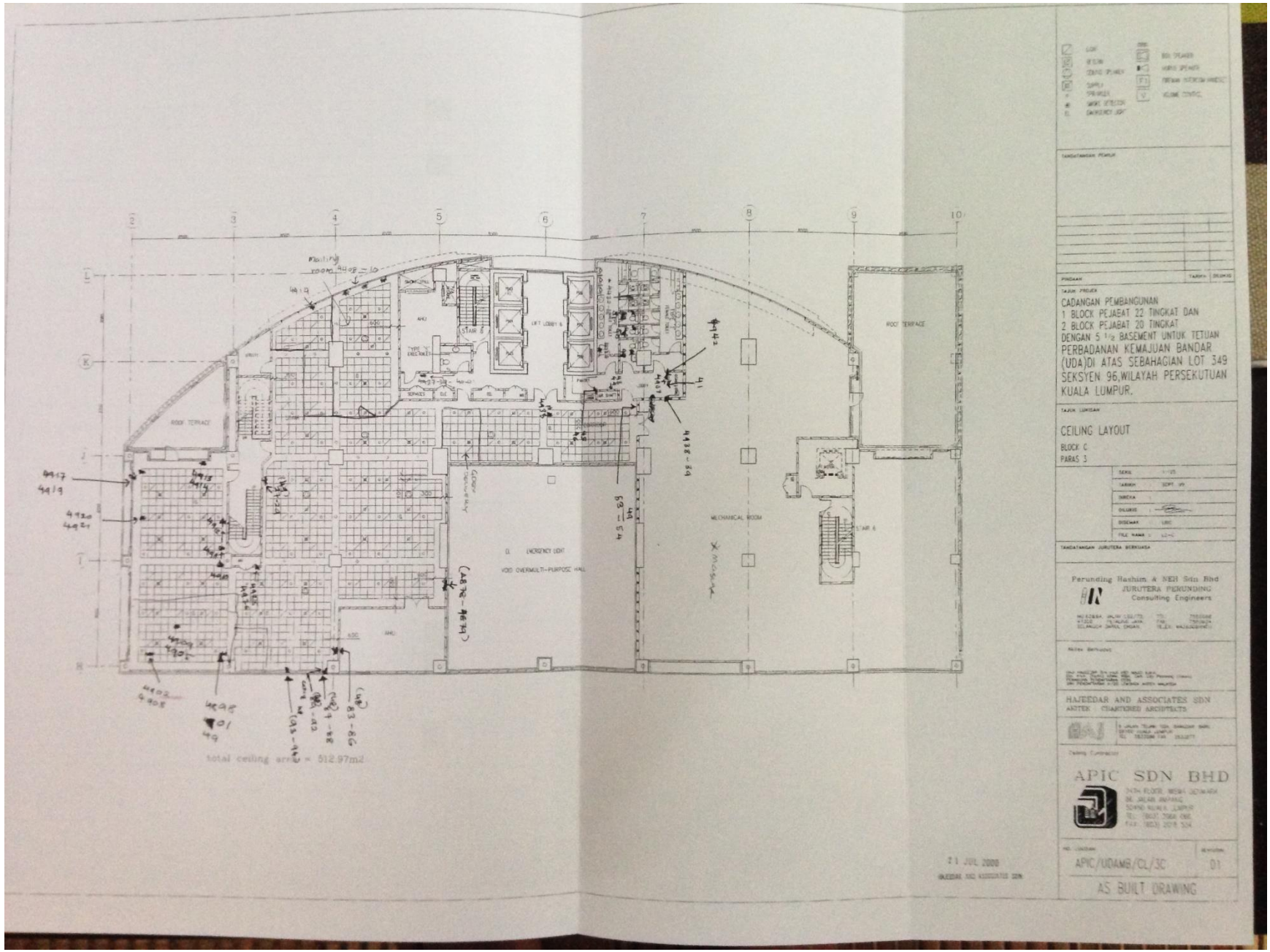

BLOCK C
total ceiling area = 833mm2
CADANGAN PEMBANGUNAN
1 BLOCK PEJABAT 22 TINGKAT DAN
2 BLOCK PEJABAT 20 TINGKAT
DENGAN 5 1/2 BASEMENT UNTUK TETUAN
PERBADANAN KEMAJUAN BANDAR
(UDA)DI ATAS SEBAHAGIAN LOT 349
SEKSYEN 96,WILAYAH PERSEKUTUAN
KUALA LUMPUR.
CEILING LAYOUT
BLOCK C
PARAS 10 - 20
APIC SDN BHD
AS BUILT DRAWING

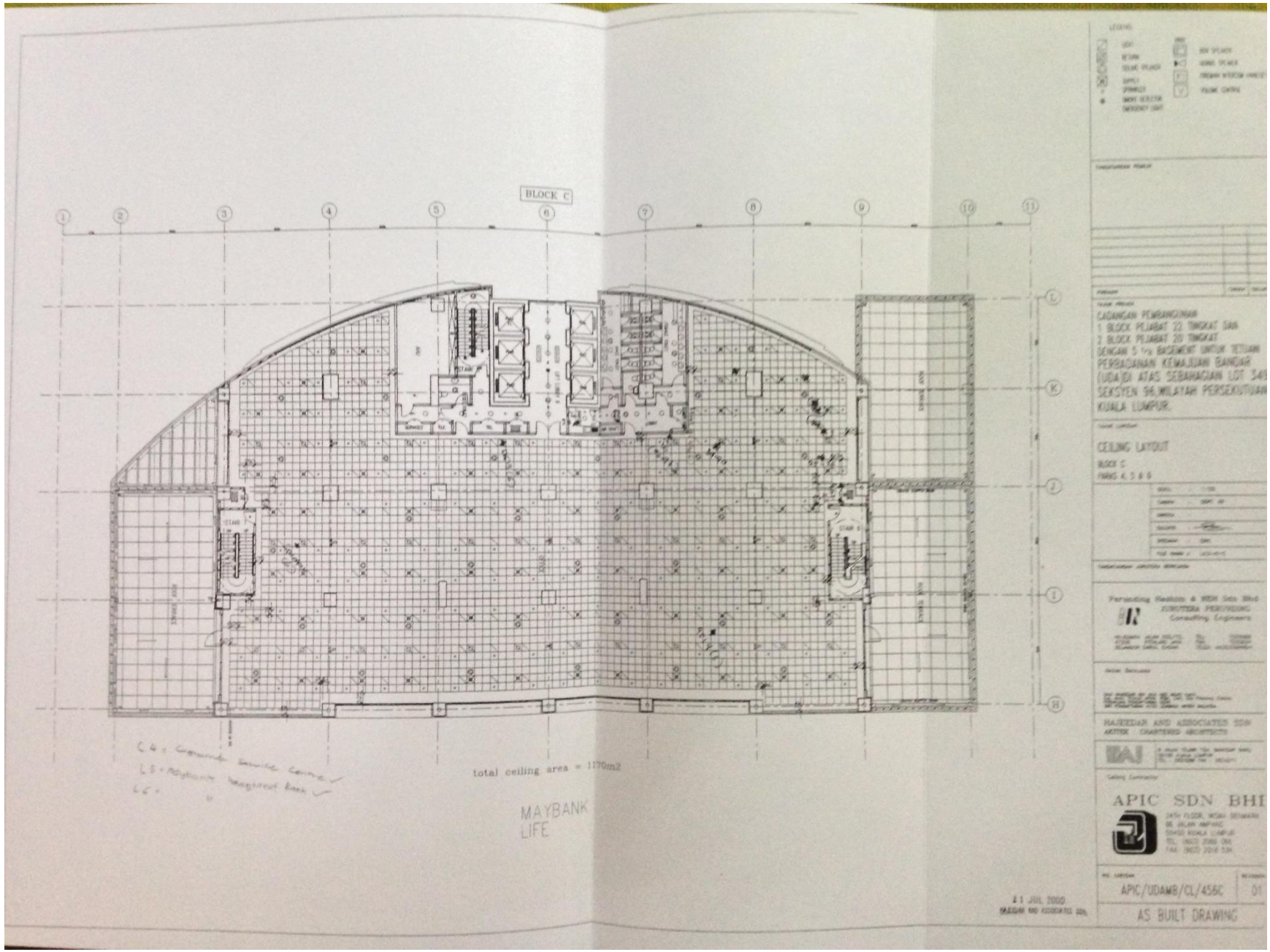

AS-BUILT DRAWING
RAJEEDAR AND ASSOCIATES SDN
AKITEK CHARTERED ARCHITECTS
SUNCO MAY CONSTRUCTION BERHAD
BRADYS
TOWER 1 & 2
PELAN PARAS 1
AS-BUILT REFLECTED CEILING PLAN
UDA/BM/CD/001

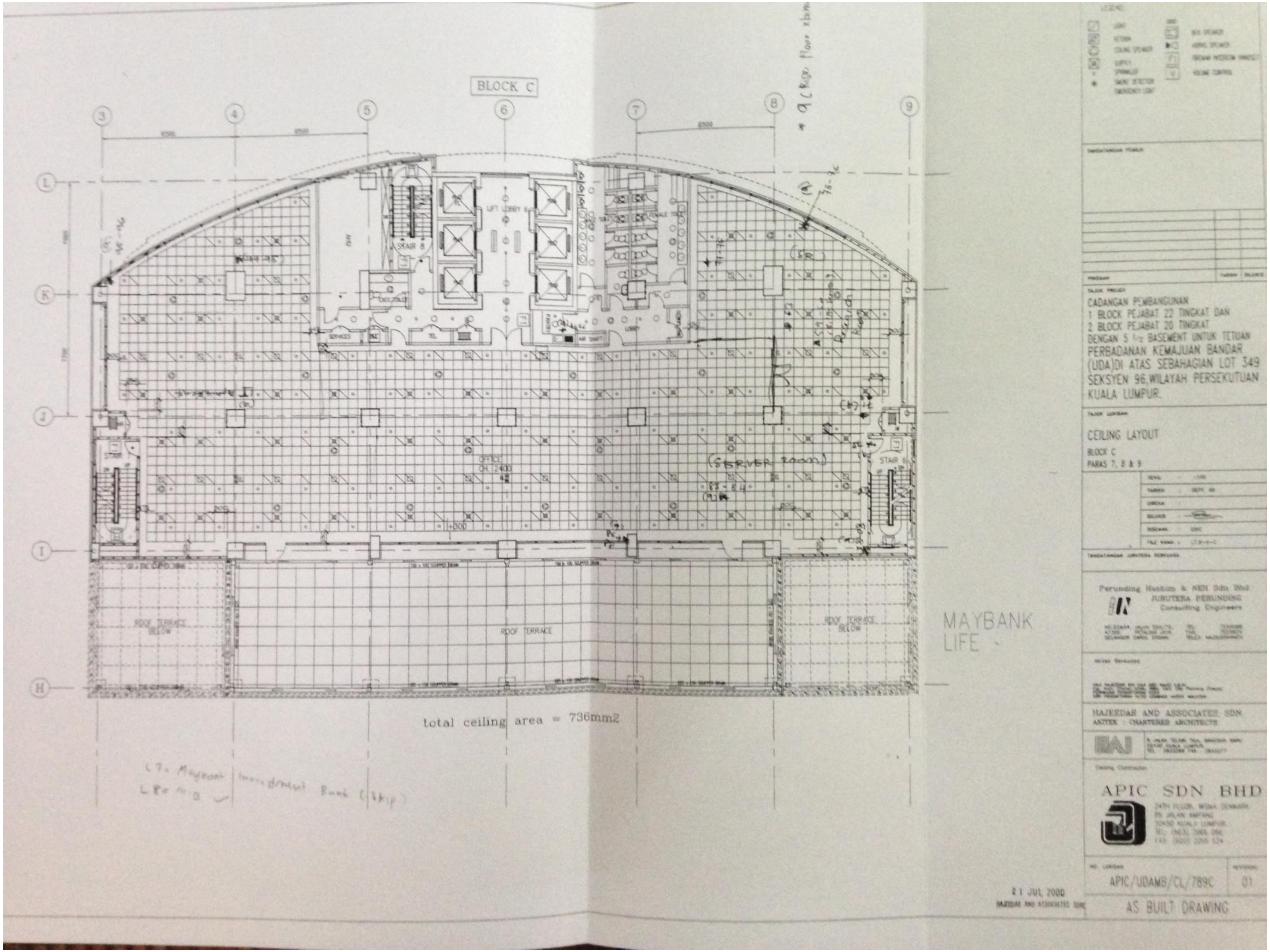

AS-BUILT DRAWING
HAJEEDAR AND ASSOCIATES SDN
BRADYS
TOWER 1 & 2
PELAN PARAS 2
AS-BUILT REFLECTED CEILING PLAN
UDA/BM/CD/002


AS-BUILT DRAWING
HAJEEDAR AND ASSOCIATES SDN
AKITEK CHARTERED ARCHITECTS
SUNGEI WAY CONSTRUCTION BERHAD
BRADYS
TOWER 3
PELAN PARAS 1
AS-BUILT REFLECTED CEILING PLAN
UDA/BM/CD/005
W00


AS-BUILT DRAWING
TOWER 3
PELAN PARAS 2
AS-BUILT REFLECTED CEILING PLAN
UDA/BM/CD/006
W00
BRADYS
SUNCON


CADANGAN PEMBANGUNAN
1 BLOCK PEJABAT 22 TINGKAT DAN
2 BLOCK PEJABAT 20 TINGKAT
DENGAN 5 1/2 BASEMENT UNTUK TETUAN
PERBADANAN KEMAJUAN BANDAR
(UDA)DI ATAS SEBAHAGIAN LOT 349
SEKSYEN 96,WILAYAH PERSEKUTUAN
KUALA LUMPUR.
CEILING LAYOUT
BLOCK C
PARAS 3
Perunding Hashim & NEH Sdn Bhd
JURUTERA PERUNDING
Consulting Engineers
HAJEEDAR AND ASSOCIATES SDN
ARITEK CHARTERED ARCHITECTS
APIC SDN BHD
APIC/UDAMB/CL/3C
01
AS BUILT DRAWING
total ceiling area = 512.97m2
21 JUL 2000


BLOCK C
total ceiling area = 1170m2
MAYBANK
LIFE
CADANGAN PEMBANGUNAN
1 BLOCK PEJABAT 22 TINGKAT SAHA
2 BLOCK PEJABAT 20 TINGKAT
DENGAN 5 ½ BASEMENT UNTUK TETUAN
PERBADANAN KEMAJUAN BANDAR
(UDA)DI ATAS SEBAHAGIAN LOT 54
SEKSYEN 94,WILAYAH PERSEKUTUAN
KUALA LUMPUR.
CEILING LAYOUT
BLOCK C
PARAS 4, 5 & 6
APIC SDN BHI
APIC/UDAMB/CL/456C
AS BUILT DRAWING


BLOCK C
MAYBANK LIFE
total ceiling area = 736mm2
CEILING LAYOUT
CADANGAN PEMBANGUNAN 1 BLOCK PEJABAT 22 TINGKAT DAN 2 BLOCK PEJABAT 20 TINGKAT DENGAN 5 1/2 BASEMENT UNTUK TETUAN PERBADANAN KEMAJUAN BANDAR (UDA)DI ATAS SEBAHAGIAN LOT 349 SEKSYEN 96,WILAYAH PERSEKUTUAN KUALA LUMPUR.
ROOF TERRACE
ROOF TERRACE BELOW
APIC SDN BHD
APIC/UDAMB/CL/789C
AS BUILT DRAWING