



**DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(SERI ISKANDAR, PERAK)**

THE CATEGORIES AND RENOVATION PROCESS

Prepared by:

HILMIHIDAYAT B ADBUL HALIM

2019420958

**DEPARTMENT OF BUILDING
DEPARTMENT OF BUILT ENVIRONMENT STUDIES AND
TECHNOLOGY, UNIVERSITI TEKNOLOGI MARA PERAK CAWANGAN SERI**

ISKANDAR

AUGUST 2021

It is recommended that the report of this practical training provided

by

HILMIHIDAYAT B ABDUL HALIM

2019420958

entitled

THE CATEGORIES AND RENOVATION PROCESS

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

Report Supervisor : Ts Muhammad Redza Bin Osman

Practical Training Coordinator : Cik Nur Azizah Binti Talkis

Programme Coordinator : Dr. Suryani Binti Ahmad

**DEPARTMENT OF BUILDING
DEPARTMENT OF BUILT ENVIRONMENT STUDIES AND
TECHNOLOGY, UNIVERSITI TEKNOLOGI MARA PERAK CAWANGAN SERI
ISKANDAR**

(10th JANUARY 2022)

STUDENT'S DECLARATION

Except for the extracts and summaries for which the original references are provided above, I hereby declare that this report is my own work, written during a practical training session that I go through at Dekad Wangsa Sdn Bhd for duration of 20 weeks starting from October 6, 2021 until January 14, 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.

.....

Name : HILMIHIDAYAT BIN ABD HALIM

UiTM ID No : 2019420958

Date : 10th January 2022

ACKNOWLEDGEMENT

Immeasurable gratitude and admiration are offered to the following individuals who have contributed in some way or another throughout my internship. The internship opportunity with Dekad Wangsa Sdn. Bhd was a great chance for learning and professional development. What a fantastic opportunity it was to be picked as an intern in this company since I was able to learn something new and enhance my abilities. Special appreciation goes to the operation manager of the company Mr. Radzy Bin Razif for conducting my training under his supervision. I would also want to thank the whole staff of this company for their devotion and assistance in guiding me through this internship time. Their enthusiastic engagement in all of my questions and queries has contributed to the success of my adventure.

Also, special appreciation goes to my practical training coordinator Miss Nor Azizah Binti Talkis as she is always willing to give ideas and information that helps me complete this report. My deepest sense of gratitude to report supervisor lecturer, Mr Muhammad Redza Bin Rosman, Mr Muhammad Naim Bin Mahyuddin as a programme coordinator and all UiTM lecturers who have taught us since they have given up a significant amount of their precious time and effort to guarantee I had a spot for my internship. Finally, my gratitude goes to my beloved parents and also to my siblings for their endless love, prayers and encouragement.

ABSTRACT

Construction industry in Malaysia is still in high demand due to the development and urbanization of Malaysia. Therefore, a lot of commercial and residential buildings are being developed. The increase in the number of construction projects in Malaysia will indirectly contribute to the increase in renovations to satisfy the owners about their house or shop. Accordingly, this report will discuss on renovation related to building technologies. This report was conducted for the proposed of renovation, designing and building at several house and shop within Kuala Lumpur and Selangor that need servicing for better conditions. The objective of this report to identify construction of the renovation process and categories. It will concentrate on the methods of renovation and how the work was done on various types of renovation in each location until the project was completed. This report will also show the overall progress and observations made during the building process.

CONTENTS	PAGES NO
Acknowledgement	i
Abstract	ii
Contents	iii-iv
List of Tables	v
List of Figures	vi
List of Figures	vii
CHAPTER 1.0 INTRODUCTION	1
1.1 Background of Study	1
1.2 Objectives of the study	2
1.3 Scope of Study	3
1.4 Method of Study	3-4
CHAPTER 2.0 COMPANY BACKGROUND	5
2.1 Introduction	5-6
2.2 Company Profile	7
2.3 Organization Chart	8
2.4 List of Project	9
2.4.1 Completed Projects	9
2.4.2 Project in Progress	10
2.5 Appendix	11-12
CHAPTER 3.0 CASE STUDY	13
3.1 Introduction	13-14
3.2 Renovation process	15-18
3.3 The Categories of Renovation	19
3.3.1 Structural Renovation	19-21
3.3.2 Cosmetic Renovation	22-23

3.4 The Problem and Reason That Happen While Constructing the Renovation Process.	24-25
4.0 CONCLUSION	26
5.0 REFERENCES	27

LIST OF TABLES

Table 2.1	List of completed projects
Table 2.2	List of projects in progress

LIST OF FIGURES

Figure 2.1	Organization chart of Dekad Wangsa Sdn. Bhd
------------	---

LIS OF PHOTOS

Photo 2.1	The company's logo
Photo 2.2	Certificates registration of Dekad Wangsa Sdn Bhd
Photo 2.3	Certificates registration of Dekad Wangsa Sdn Bhd
Photo 3.1	Cross section of the foundation for the roof structure
Photo 3.2	Information signboard project about upgrading futsal court
Photo 3.3	Wiring work at Subang Jaya, Selangor
Photo 3.4	Construction of foundation for roof structure at futsal court
Photo 3.5	Maintenance work on air-conditioner
Photo 3.6	The <i>facebook</i> page used by Dekad Wangsa Sdn Bhd to promote their services
Photo 3.7	The architect of Dekad Wangsa Sdn Bhd (right) attending a site visit with main contractor (left)
Photo 3.8	The construction of frame (metal stud) for partition wall (gypsum board)
Photo 3.9	The uses of canvas while painting the ceiling to protect the floor
Photo 3.10	The installation of carpet tiles
Photo 3.11	The installation of custom-made kitchen cabinet which the services provided by Dekad Wangsa Sdn Bhd at PPA1M, Putrajaya
Photo 3.12	The installation of partition board for making the separate room for office at Batu Caves
Photo 3.13	The installation of partition board at Subang Jaya
Photo 3.14	Professional automatic laser line used to make sure the partition wall is straight horizontally and vertically
Photo 3.15	The installation of reinforced concrete slab
Photo 3.16	The installation of reinforced concrete slab
Photo 3.17	Plain mild steel bar has been used for the slab
Photo 3.18	Ceiling trays type installed at the house
Photo 3.19	Painting works
Photo 3.20	Aesthetic lighting installation in the living room

CHAPTER 1.0

INTRODUCTION

1.1 Background of Study

The term 'renovation' refers to the process of returning something to a good state of repair. Renovation is the process of improving or updating an old, damaged, or malfunctioning structure in the construction business. This is in contrast to 'retrofitting,' which is the addition of a component or feature that was not initially installed, or 'refurbishment,' which is the act of improving something by cleaning, decorating, or re-equipping.

Renovation work is often classified as either 'cosmetic' or 'structural.' Structural renovation might include extensions, loft conversion, construction of a basement, redesign floor plan, re-wiring, re-plumbing and so on. However, cosmetic renovation may include flooring, fixture updates, light landscaping, minor repairs, painting, and other types of decoration.

A cosmetic renovation is any improvement to a building's look that does not change its size or structural integrity. Adding a new patio is more than an aesthetic upgrade, although resurfacing a concrete patio floor might be called a cosmetic enhancement. Another hallmark of a cosmetic renovation is the cost of the renovation. Cosmetic renovations are a small task such as painting or replacing a lamp. Hiring an interior designer to remodel a living room from floor to ceiling, such as carpets, paints and furniture, is beyond the limits of cosmetic renovation. However, hiring a colour advisor to assist in colour selection can be part of a successful cosmetic renovation.

In general, structural renovation entails changes ranging from relocating walls to modifying the whole floor plan of the property. As the term implies, the house structure is altered in order to provide a more comfortable home for the family.

1.2 Objectives of the study

The objectives of this report are as follow:

- i. To identify construction of the renovation process.
- ii. To identify the categories of renovation.
- iii. To determine the reasons of problem that happen while constructing the renovation process.

1.3 Scope of Study

The scope of study was carried out on how to construct the categories of renovation which is structural renovation and cosmetic renovation.

1.4 Method of Study

Two research methods were utilized to gather information and details for this report. There are two types of methods which are primary and secondary. Primary sources are materials that have not been processed or printed and are still in their original condition. These resources are unique and have not been interpreted. Primary sources are divided into observations, practical and interviews.

i. **Observation Method**

This observation method is done directly that is with site visits. This observation is corroborated by the use of a camera. This camera is used to take photos at the construction site to provide additional information about the project, such as a photo of the machine and the progress of the building site.

ii. **Practical method**

This method is done by doing the construction work and handling the tools.

iii. **Interview method**

The interviews are another option for gathering material for this report. This method is more accurate and allows for a fuller explanation into the project's details. This strategy is carried out through an interview or by constantly seeking advice from a supervisor and contractor who are more knowledgeable and experienced.

Then, for the secondary sources, which is made up of items or documents that have been read and reviewed. The journals, articles, blogs and also the project documentation are examples of the secondary sources. Moreover, the drawing or documentation may be referred to for additional details and information. Otherwise, the secondary sources will be obtained through referring to articles, books, journals, the internet, and any other references related to the construction industry that would be called as the secondary sources.

i. Journals

One of the reading materials created by a person is a journal. The usage of a journal may provide a great deal of information. Journals are normally kept for individual work, although they can also be kept for a small group.

ii. Books

In this project, the book has been used as a secondary source to get more information about the installation or construction of the roof structure. There are several books that have been used to obtain information. These types of books are available from the internet and also from internet technology which is websites google books.

iii. Project Documentation

The process of capturing critical project details and providing the documents needed to successfully implement that known as project documentation. Project documents are one of the reading materials generated by Dekad Wangsa Sendirian Berhad. They range the project file status or progress and also the photography progress. The documentation would be the report as an approved that the maintenance services are completion that included in that record.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction

Dekad Wangsa Sdn. Bhd. is a subsidiary company located in Batu Caves, Kuala Lumpur, Selangor and this company is a newly re-established company. The company was established in 2001 also wholly owned by a named entrepreneur Dato' Dzulhelmi bin Abd Halib which is the founder of the company. The company generally commenced operations on 16 JULY 2001 with registration number 200101017624 (553381-x). The company located at Dekad Wangsa Sdn Bhd. 23A-GF, Jalan Medan Batu Caves, 68100 Kuala Lumpur, Selangor. The company also employs seventeen people, including the employer. Eight of the employees are certified and experienced in designing houses and constructions, as well as in building them.

The objective of the company are creating employment opportunities for Malaysians who find it difficult to get a job and improving the economy of Malaysians and further improving the skills of the workforce in Malaysia. The misión of the company is to be a world-class and competitive contractor. The vision of the company is strive to meet the needs of our clients by providing quality services, completing projects on time as well as offering value for money based on the principles of determination, dedication and discipline to serve their interests well.

The main services of Syarikat Dekad Wangsa Sdn. Bhd are aircond services, renovation, plumbing, electrical circuit connections inside and outside the building and construction.



Photo 2.1: The company's logo

2.2 Company Profile

Company Name: Dekad Wangsa Sdn. Bhd.
Business Address: Dekad Wangsa Sdn Bhd.
23A-GF, Jalan Medan Batu Caves,
68100 Kuala Lumpur, Selangor.
Email: dekadwangsa.marketing@gmail.com

Registered Address /
Company Secretary: No. 86 (A-2)
Pusat Perdagangan Manjung,
Jalan Lumut,
Seri Manjung,
Perak, 32040

Tel No: 011-65512020
Fax: 011-65512020
Company Registration No: 200101017624 (553381-x).
Date of Registration: 16 JULY 2001

2.3 Organization Chart

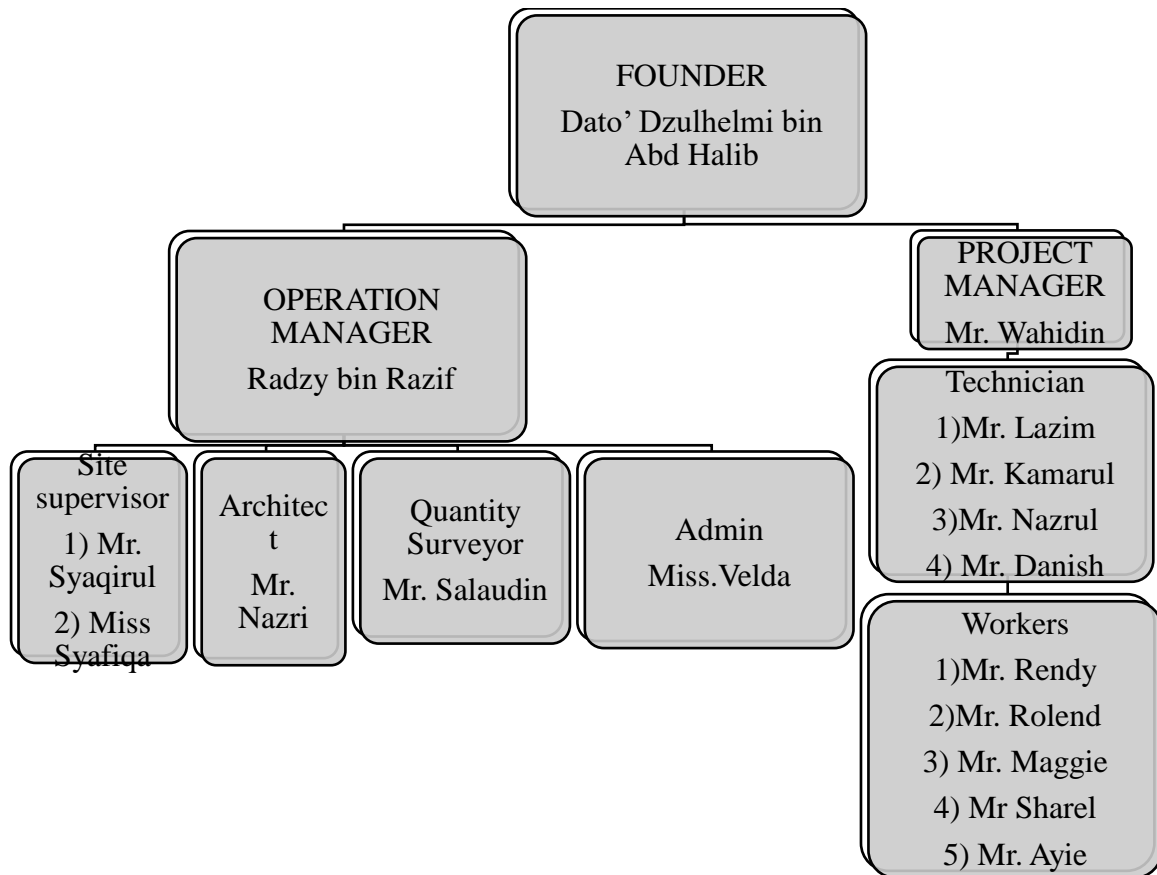


Figure 2.1: Organization chart of Dekad Wangsa Sdn. Bhd
Source: Dekad Wangsa Sdn. Bhd Management

2.4 List of Project

2.4.1 Completed Projects

NO	PROJECT NAME	GDV (RM)	COMMENCEMENT DATE	COMPLETION DATE
1	Partition wall installation on garage at Semenyih, Shah Alam, Selangor		3 rd August 2021	31 th August 2021
2	Full house renovation at PPA1M, Presint 17, Putrajaya		3 rd September 2021	1 st November 2021
3	Renovation and maintenance on cosmetic shop at Subang Jaya, Selangor		15 th September 2021	3 rd November 2021
4	Aircond services and maintenances		5 th September 2021	7 th September 2021
5	Custom cabinet installation at PPA1M, Presint 17, Putrajaya		8 th August 2021	8 th September 2021
6	Partition wall installation, wiring and etc to make an office for Dekad Wangsa Sdn Bhd at Batu Caves, Kuala Lumpur		9 th September 2021	9 December 2021

Table 2.1: List of completed projects

2.4.2 Project in Progress

NO	PROJECT NAME	GDV (RM)	COMMENCEMENT DATE	COMPLETION DATE
1	Construction of roof structure and upgrade the futsal court at Kampung Melayu, Ampang, Selangor		16 th October 2021	6 th February 2021
2	Construction of roof structure and upgrade the futsal court at Srin Intan, Ampang, Selangor		16 th October 2021	26 th January 2021


Table 2.2: List of projects in progress

2.5 Appendix

⊗

1 / 6 ⊗

Ⓜ



Although all efforts have been carried out to ensure that the information provided is accurate and up to date, the Registrar of Companies will not be liable for any losses arising from any inaccurate or omitted information.

CERTIFIED TRUE COPY

KAMARUL AZHAR DAHAMAN HURI
Company Secretary (MIA 12204)

<u>CORPORATE INFORMATION</u>	
Name	:DEKAD WANGSA SDN. BHD.
Last Old Name	:Nil
Date Of Change	:Nil
Registration No.	:200101017624 (553381-X)
Incorporation Date	:16-07-2001
Type	:LIMITED BY SHARES PRIVATE LIMITED
Status	:EXISTING
Registered Address	:NO. 86 (A-1) PUSAT PERDAGANGAN MANJUNG JALAN LUMUT SERI MANJUNG PERAK
⊗ Postcode	:32040 ⊗
Origin	:MALAYSIA
Business Address	:125-9(1), JALAN SEBALIK SUNGAI PELONG SUNGAI BULOH SELANGOR
Postcode	:47000
Nature Of Business	:GENERAL MERCHANTS, GENERAL IMPORTERS & EXPORTERS, PROPERTY DEVELOPER & BUILDING CONTRACTORS, GENERAL CONTRACTOR, PILING & ENGINEERING WORKS

Photo 2.2: Certificates registration of Dekad Wangsa Sdn Bhd
Source: Dekad Wangsa Sdn Bhd management



SURUHANJAYA SYARIKAT MALAYSIA
 COMPANIES COMMISSION OF MALAYSIA
 (Agensi di bawah KPDMBRP)

SUMMARY OF FINANCIAL INFORMATION

Name : DEKAD WANGSA SDN. BHD.
 Registration No. : 200101017624 (553381-X)
 Auditor : HALIM AHMAD & CO. (AF1205)
 Auditor Address : NO.86 (TINGKAT ATAS)
 PUSAT PERDAGANGAN MANJUNG
 JALAN LUMUT
 32040, SRI MANJUNG
 PERAK
 Exempt Private Company : N/A
 Financial Year End : 31-12-2012
 Unqualified Reports (Y/N) : Y
 Consolidated Accounts (Y/N) : N
 Date of Tabling : 30-06-2013

BALANCE SHEET ITEMS

Non-Current Assets	:	50,668.00
Current Assets	:	339,962.00
Non-Current Liabilities	:	0.00
Current Liabilities	:	409,824.00
Share Capital	:	100,000.00
Reserve	:	-119,194.00
Retain Earning	:	0.00
Minority Interest	:	0.00

INCOME STATEMENT ITEMS

Revenue	:	312,852.00
Profit/(loss) before tax	:	-25,355.00
Profit/(loss) after tax	:	-25,355.00
Net dividend	:	0.00
Minority Interest	:	0.00

** END OF REPORT **

This information are from the company's document registered as at 11-12-2020

Registrar of Companies
 Dated : 15-07-2021

This information is computer generated. No signature is required.

Photo 2.3: Certificates registration of Dekad Wangsa Sdn Bhd
 Source: Dekad Wangsa Sdn Bhd management

CHAPTER 3.0 CASE STUDY

3.1 Introduction

This project is about to renovate people’s house, shop and garage within Kuala Lumpur and Selangor which is doing maintenance work or upgrade customers ’premises according to their wishes. Besides, Dekad Wangsa Sendirian Berhad also took part in subcontracting project on upgrading the futsal court. It is conveniently located at village area at Kampung Melayu, Ampang, Selangor. This project is built with the total construction cost of RM 500,000 and the date of completion was on 2nd February 2022. Majlis Perbandaran Ampang Jaya (MPAJ) is the client of the project.

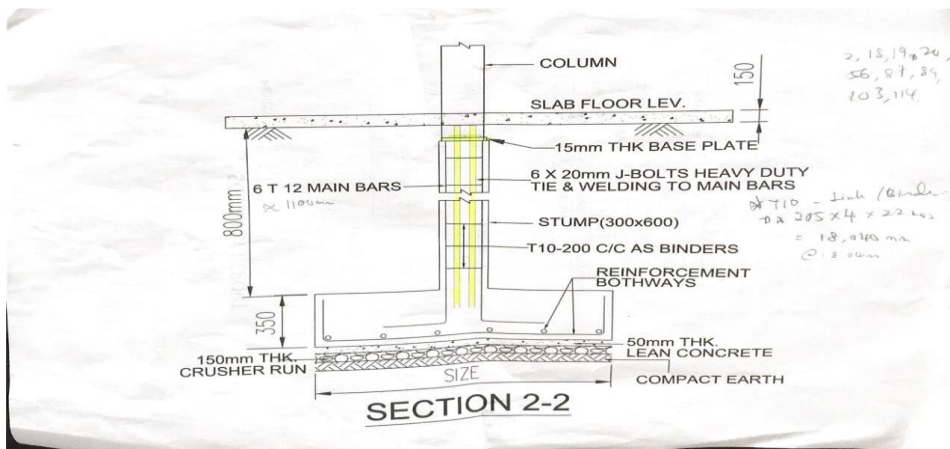


Photo 3.1: Cross section of the foundation for the roof structure



Photo 3.2: Information signboard project about upgrading futsal court



Photo 3.3: Wiring work at Subang Jaya, Selangor



Photo 3.4: Construction of foundation for roof structure at futsal court



Photo 3.5: Maintenance work on air-conditioner

3.2 Renovation process

1) Finding a Project.

The marketing management of Dekad Wangsa Sdn Bhd will be doing marketing works by using social media platform which is Facebook to promote about the company offered services. Other, there are also close acquaintances of the C.E.O of Dekad Wangsa uses the services of the company. Lastly, the easiest way to get a project is to always produce a good work that satisfy the clients which will raise the name of the company.

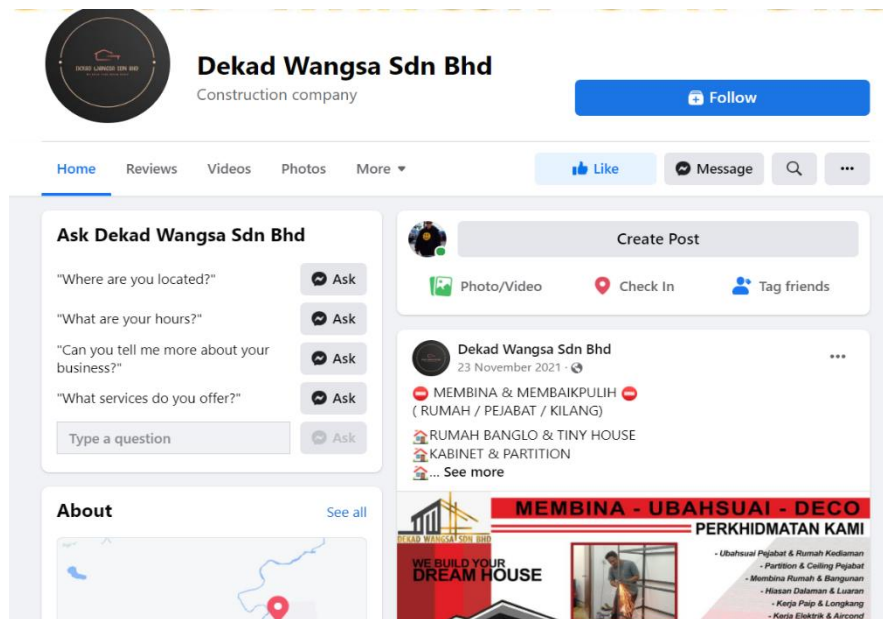


Photo 3.6: The facebook page used by Dekad Wangsa Sdn Bhd to promote their services

2) Financing

The finance of the project can be derived from company savings or loan from an accredited bank. If more structural work is required, such as making the home liveable, financing may require a specialist lender. There are several lenders that offer renovation-specific mortgages with only small cash deposits required. They are often stage payment mortgages meaning that funds are released at various milestones during the project delivery. In other hand, the budget of the project come from the clients which the amount of the budget is stated by the quantity surveyor. However, the finance of the project must be managed properly because the profits of the company directly come from the project. Sometimes, there is always unexpected things happen in construction that will cost huge amount of money.

3) Condition Assessment

Usually, the supervisor, architect or interior designer will go through site visit with the client to obtain information from the site about what the client desires, to ask question about the site condition and to trade each other opinion about the renovation project. A chartered surveyor also will be commissioned to provide a building report identifying essential repairs or further investigation that is needed. This will also help identify the type of construction used throughout the structure which can provide a steer in terms of appropriate redesign and construction techniques.



Photo 3.7: The architect of Dekad Wangsa Sdn Bhd (right) attending a site visit with main contractor (left)

4) Construction Works

After all of the planning, it's finally time for the big moment. Securing the site, identifying areas for materials and plant storage, identifying available options if the site has restricted access, ensuring there is a water and electricity supply, identifying any work required to stabilise the structure, such as underpinning, piling, or foundation stabilisation, demolition work required to strip the structure back as required, and treatment of any infestations are all examples of works. Once the current structure is stable, structural work may commence. The Building Regulations must be followed for any structural construction. It is important to protect

the current structure from harm throughout the construction process by utilising plastic sheets, boards, and other materials.

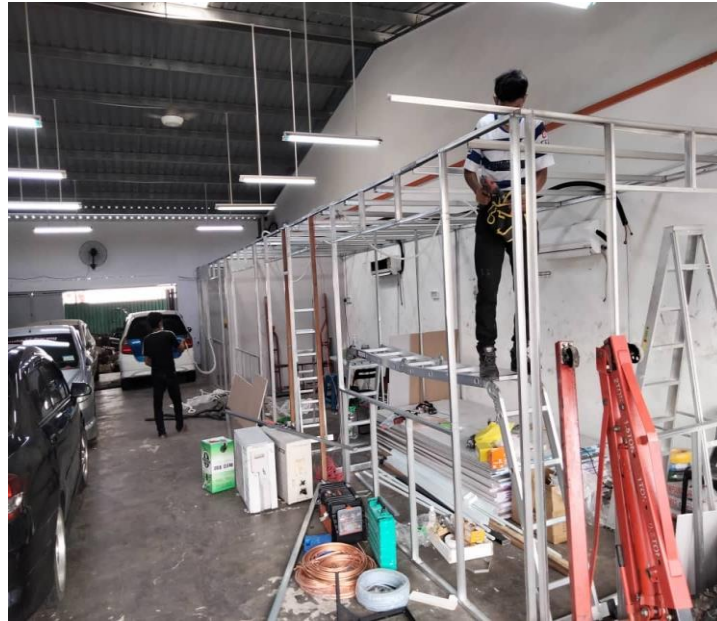


Photo 3.8: The construction of frame (metal stud) for partition wall (gypsum board)



Photo 3.9: The uses of canvas while painting the ceiling to protect the floor

5) Decorating

Painting, staining, varnishing and so on begins once all the huge construction renovation is complete. To achieve a good finish, it is important that the surfaces are thoroughly smooth and clean in advance. Tiling of bathrooms and kitchens should also be done at this stage, as well as any soft floor coverings such as vinyl and carpet. For example, the installation of carpet tiles on the new office of company Dekad Wangsa Sdn Bhd at Batu Caves, Kuala Lumpur.



Photo 3.10: The installation of carpet tiles



Photo3.11: The installation of custom-made kitchen cabinet which the services provided by Dekad Wangsa Sdn Bhd at PPA1M, Putrajaya

3.3 The Categories of Renovation

House renovation is divided into two types which is structural renovation and cosmetic renovation. Structural renovation focuses on creating better space and comfort, whereas cosmetic renovation focuses on improving the appearance of the area.

3.3.1 Structural Renovation

The example for the structural renovation project that have been undertaken by Dekad Wangsa Sdn Bhd is proposed a full inner renovation to make the office at Batu Caves, Selangor and proposed a full renovation on the cosmetic factory which is wiring, partition board, painting and maintenance works at Subang Jaya, Selangor.



Photo 3.12: The installation of partition board for making the separate room for office at Batu Caves



Photo3.13: The installation of partition board at Subang Jaya



Photo 3.14: Professional automatic laser line used to make sure the partition wall is straight horizontally and vertically



Photo 3.15: The installation of reinforced concrete slab



Photo 3.16: The installation of reinforced concrete slab

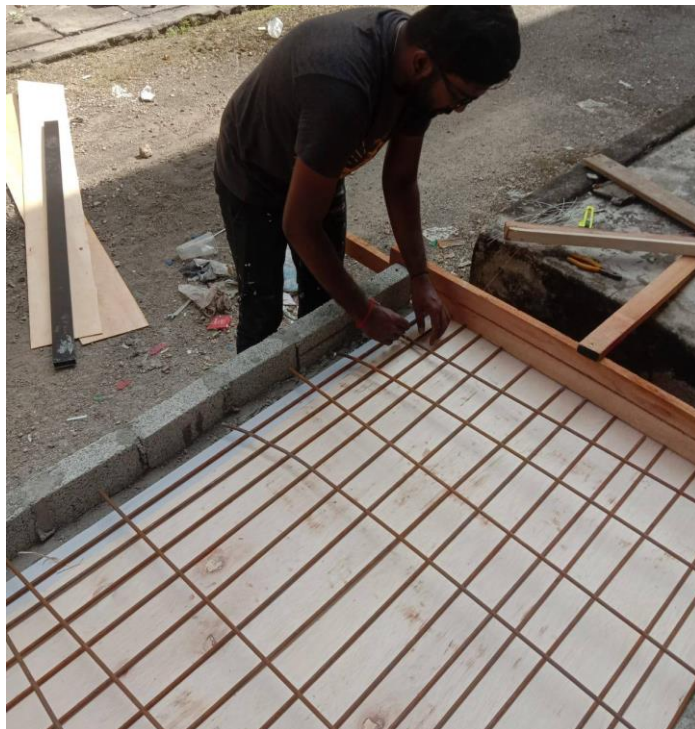


Photo3.17: Plain mild steel bar has been used for the slab

3.3.2 Cosmetic Renovation

The example for the cosmetic renovation project that have been undertaken by Dekad Wangsa Sdn Bhd is proposed to make the aesthetics ceiling, custom-made cabinet and furniture, painting, wiring, air conditioner installation and etc. The renovation project took place at PPA1M, Putrajaya.

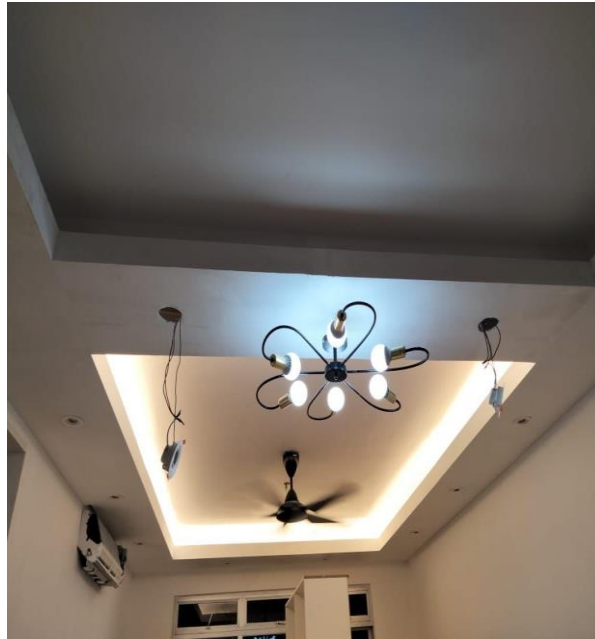


Photo 3.18: Ceiling trays type installed at the house



Photo3.19: Painting works



Photo 3.20: Aesthetic lighting installation in the living room

3.4 The Problem and Reason That Happen While Constructing the Renovation Process.

In the course of a construction project, there are several possible major obstacles. Project managers are responsible for keeping a site running successfully, safely, on time, and under budget. This can be a challenging task at times. There are some of the problem and reason that happen while constructing the renovation process.

1) Delayed cash flow

The construction industry relies on invoicing, which might be an outdated system at times. In addition, late payments might have a negative impact on a company's financial flow. This, in turn, might deplete money for other projects and cause delays. Therefore, systems of invoicing need to evolve. With improved software and enough follow through, construction companies can ensure that cashflow does not affect other projects negatively.

2) Limited skills

Construction is a tremendously reputation-driven sector. People like to collaborate with people they know and trust. This is frequently a good thing, since teams that know how to work together may be quite efficient. However, if the team has a skills gap, it may create considerable delays. The key is to be aware of these skill gaps before they have an influence on the project. Once you've identified these holes, you can close them quickly and efficiently.

3) Poor communication

Communication is an essential skill in any profession, but it is more crucial when work is assigned to many parties. Without clear and effective communication, key tasks might fall through the cracks, and the team may be unaware of a problem until it's too late to fix it. As a result, project managers must establish explicit guidelines. At the conclusion of each day, there should be clear communication up a clear ladder informing the team of any progress or challenges. Problems can be solved more effectively this way. If in-person meetings are not possible, using different types of software such as WhatsApp, Telegram and etc could be an excellent solution.

4) Inadequate risk management

Project managers frequently put protections in place to mitigate long-term risk. Short-term difficulties, on the other hand, are frequently overlooked. These problems may swiftly escalate and have a significant impact on the bottom line.

Whether it's untrustworthy subcontractors, scheduling difficulties, or changing stakeholder preferences, any apparently little issue may destroy a project. As a result, contingency measures are essential. Schedule some wiggle room and invest in programmes like safety training to avoid any of these possible concerns.

5) Unrealistic expectations or bad forecasting

Some clients and customers may make significant requests. Whether customers anticipate a project to be finished quickly or on a tight budget, there may be certain obstacles associated with their expectations. While certain things are within the scope of a good project manager, others just are really not. Working with unattainable goals might stifle productivity.

Some of these expectations are the result of poor forecasting. It is possible that this forecasting, like risk management, focuses on the long term rather than the immediate term. Divide those projections into monthly, weekly, and daily targets to discover if they are genuinely attainable. The concerns should then be communicated to stakeholders, if necessary. Provide an alternate strategy so they can see an aggressive, yet achievable, timeframe or budget.

6) Lack of structure

It is tough to get things done efficiently if do not have a clear goal. If individuals do not have a clear aim to reach, a construction project can easily slip behind or go over budget (or both). And without these objectives, it is impossible to hold people accountable for their contributions to a project.

Performance management is an essential component of project management. To put this into action and keep everyone on track, they all need specific duties to do. Divide larger, project-wide goals into smaller, daily tasks for people to achieve. If something is not done one day, it builds up to the next. Using procedures, it can hold individuals accountable.

4.0 CONCLUSION

Finally, renovation is a well-known form of building enhancement. When a building begins to have defects, renovation is required to boost value and attractiveness, ensure space comfort, and so on. The reconstruction, done in accordance with the homeowner's wishes and with expert assistance, will result in a successful, problem-free project with no complaints. One of the decision tool's primary issues is to enable the merger of project stakeholder points of view, which is based on extensive interaction between specialists and owners. As a result, agreement by both sides is vital. Failure to plan implies a willingness to abandon the entire undertaking.

5.0 REFERENCES

Michael Page, (2016), Top 6 Construction Project Challenges. Retrieved from <https://www.michaelpage.com/advice/management-advice/top-6-construction-project-challenges>