



**DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

CONSTRUCTION PROCESS

**Prepared by:
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MOHD MANSOR
2019204266**



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DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
(PERAK)
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It is recommended that the report of this practical training provided

By

Nur'Ain Natasha Binti Mohd Mansor

2019204266

entitled

Construction Process

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

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DEPARTMENT OF BULIDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
(PERAK)

AUGUST 2021

STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references are stated herein, prepared during a practical training session that I underwent at Universiti Teknikal Malaysia Melaka for a duration of 20 weeks starting from 23th August 2021 and ended on 7th 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.

.....
Name : Nur'Ain Natasha Binti Mohd Mansor
UiTM ID No. : 2019204266
Date : 10 January 2021

ACKNOWLEDGEMENT

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

First of all, my name is Nur'Ain Natasha Binti Mohd Mansor (AAP1165A) from the Diploma in Building, would like to thanks Universiti Teknikal Malaysia Melaka for generously allowing me to take this very valuable opportunity to undergo the Industrial Training program at this university. Throughout my Industrial Training here so much experience and knowledge I have gained starting from 23rd August to 7th January in this section. I have also been exposed to the real world of work and a lot of new knowledge I have gained.

The highest appreciation to Ir. Dr. Mohd Rayme Bin Anang Masuri, Director of the Development Management Office for the opportunity given to me to learn and develop understanding and knowledge in this division. Not to forget, I would also like to thanks my supervisor while undergoing industrial training here, namely Mr. Amir Akmal Bin Alwee. They have given me a lot of advice, encouragement and words of encouragement. They have also been responsible for refining and evaluating my work throughout this industry training. Not forgetting the staff who are willing to give guidance, advice and words of encouragement that I will never forget. It is an honour for me to be given the opportunity of industrial training with all of you.

Thanks are also extended to the lecturers who are directly involved and not forgetting also to the colleagues at Universiti Teknologi Mara for the guidance and guidance given by them in preparing this Industrial Training Report. I greatly appreciate the time, effort, encouragement and ideas they have contributed towards the successful completion of my training, this report and the valuable knowledge they have shared over the years.

Without the cooperation and support of all parties, I would not have been able to complete my Industry Report. Finally, I would like to once again express my deepest appreciation and thanks to all parties involved either directly or indirectly in the production of my report.

Thank you so much.

ABSTRACT

Students in every university will be provided lecture rooms for them to conduct learning sessions. However, some universities provide limited lecture rooms and cause students to feel uncomfortable while learning. Therefore, this report will discuss about the lecture hall construction process. This report is conducted to design, build and designate a special place for students at the Universiti Teknikal Malaysia Melaka. The objective of this report is to identify the course of each construction process for lecture halls in each university. It will focus from the beginning of the project to be built until the project to be handed over. Therefore, we will be able to know in more detail how to do the construction process for a Dewan Kuliah complex.

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CHAPTER 1.0

INTRODUCTION

1.1 Background and Scope of Study

Everything that is done must have its own process so that a job becomes easier and more organized. Similarly, the construction process is very important in the field of construction so that the construction is always in good condition and smooth before, during and after construction. The construction process is the physical process of building, landscaping or overhauling as well as all related activities, such as demolition, site clearing, administration and so on. Construction work is usually carried out by a contractor. Contractors may be referred to as builders or home builders, and contractors may appoint subcontractors and other suppliers to help perform some or all of the work.

In addition, the construction process usually begins after the process of handing over the site from the customer to the contractor and the end of the construction process after the handover of the completed project to the customer. Furthermore, this construction process is not included in the pre-construction activities although these activities can be carried out at the same time as the construction such as brief preparation, forming a design team and so on.

Briefly, the construction process has six processes. First, planning and development. Sometimes called project conception, is the very beginning of the construction process. This process begins when a client or client consisting of an individual, government body or private party intends and plans to build a construction project. At first, the client has a vague idea of what the construction project looks like. Therefore, an architect will be appointed to produce the concept drawing and make an estimate of the initial cost of the project.

Second, analysis and design. The information obtained from the site investigation will be analyzed before the project design work is carried out. Examples of work during analysis and design are analyze and select sites, measure sites, investigate land, make building designs, prepare drawings and work specifications and make quantity lists to obtain project cost estimates. Third, management process. At this stage, the quantity surveyor collects information on the preparation of tender documents and makes tender bids. The terms of the contract are included in the tender document which touches on all three aspects of the quality of project management.

Fourth, construction. The construction stage includes site preparation work including construction of structures and work to complete the basic facilities of the project. Fifth, submission process. Once the project is completed, a certificate of completion will be issued to the developer or contractor. The developer or contractor will hand over the project to the client. Next, a Certificate of Fitness must be obtained from the Local Authority.

Last but not least, defect liability period process. The employer is responsible for providing the final payment to the developer or contractor. A total of 5% of the total cost of the building project will be withheld as retention money by the client for one year or as per agreement. During that period, if there is any defect or damage as a result of not meeting the specified specifications, the contractor is responsible for repairing it. If during that period there is no damage or the contractor has repaired all the damage reported, the detention money will be paid to the developer or contractor.

Therefore, the aim of this case study was made is to identify the process and the works involved in construction process for the project Kompleks Dewan Kuliah UTeM.

1.2 Objectives

There are a few objectives to be obtained in providing this Practical Training Report.

The objectives are as following:

- 1.2.1 To investigate the work process for each stage in construction.
- 1.2.2 To describe each stage involved in the construction process.
- 1.2.3 To states the authorities and technical personnel involved in the construction process.
- 1.2.4 To escribe each stage of work involved in the construction process.

1.3 Scope of study

This case study was conducted at Universiti Teknikal Malaysia Melaka (UTeM), Hang Tuah Jaya, 76100, Durian Tunggal, Melaka. The main focus of this study was to find out specifically the entire construction process on the building.

1.4 Method of study

There are some data collection methods used to achieve the objectives of this report such as:

1. Observation

Due to the exposure to real work, this strategy is used immediately while doing a project site visit. Throughout the completion time, observations were performed to analyse the construction process. By witnessing, the steps of the construction process may be easily identified. Throughout the observation procedure, pictures and videos were made to document the findings. Taking written notes throughout the observation is also necessary to ensure that any significant information is not overlooked.

2. Interviews

The interview is a good way to get a lot of information. When questions can be asked immediately and answers can be obtained on the spot, an unstructured interview process occurs. During the educational site visit, interviewing people with experience in the construction business, such as supervisors, architects, engineers, quantity surveyors, and labourers, is used to conduct qualitative research. Because different people have varied skills and experiences, it will be beneficial to gain a better understanding while conducting the observation.

3. Document reviews

This strategy entails systematic data collection from the organization's existing records, such as construction blueprints, corporate profiles, monthly progress reports, and pictures taken by employees. The majority of the relevant and secret data about the organisation or project can be obtained and used to meet the report's objectives.

CHAPTER 2

COMPANY BACKGROUND

2.1 Introduction of company

The establishment of the development office began with the establishment of UTeM on December 1, 2000. The development office of UTeM was established as the main function to support the development of a dynamic technical training center. The Development Office was initially headed by a Development Director. On September 9, 2002, the development office was renamed the Asset Management and Development Office, and the vehicle unit was also transferred from the registry office to this department. This restructuring was carried out by a Head of Development and Asset Management until February 12, 2010. In 2010 and this department has been restructured into a development office to continue operating the university.

The development office now has four main departments, namely the planning and development department, the service and maintenance department, the contracts department, and the administration department. Each business area has several units, which are based on function and experience in their respective areas. The role of the development office is important to the success and achievement of excellence in the teaching and learning system. Furthermore, effective maintenance is required to ensure that the facilities and infrastructure built are always used optimally and achieve a satisfactory useful life.

The Development Management Office has been actively involved in the development of infrastructure and physical facilities since UTeM was founded in 2000. The development and physical operation of the campus began at the temporary campus of Taman Tasik Utama until UTeM was operated in three campus currently. In recent years, development projects on the main campus of UTeM have also begun to be revitalized in line with the development of teaching and study, research and development needs, and university administration and management. The development office will continue to work with senior management on the planning and development of the campus in accordance with the mission and vision of UTeM.

optimal execution of the operation and maintenance is also an important concern of the department in particular and of the university in general, in order to guarantee the comfort and well-being of the users of the building at all times. Taking into account the importance of the operation and maintenance of the building, activities are implemented in the best possible way, various programs, initiatives and activities have been implemented, are and are being implemented, including the MS ISO 9001: 2008 standard certification of the development management office for maintenance. management, full use of the operational information system and others. All of this stems from the urgency of meeting the increasingly demanding requirements of maintenance management.

In addition to these two main activities, the development office is also responsible for managing the leases of buildings for the use of university operations, such as the technology campus, city campus, and off-campus student housing. . In a less complete situation, the promotion office can plan suitable installations in rental buildings based on the needs of the users.



Figure 2.1 : Development Management Office of Universiti Teknikal Malaysia Melaka

Source : Website Development Management Office

2.2 Company profile

Company Name : Development Management Office of Universiti Teknikal
Malaysia Melaka

Business Address : Universiti Teknikal Malaysia Melaka,
Hang Tuah Jaya, 76100 Durian Tunggal,
Melaka, Malaysia.
Tel No. : 06-2701370 Fax : 06-2701058
Email : ppp@utem.edu.my

2.2.1 Location

The location proposed for the Kompleks Dewan Kuliah UTeM project was placed near Tasik UteM and Dewan Canselor UTeM. Its surrounding was strategic and suited well for its purposes.

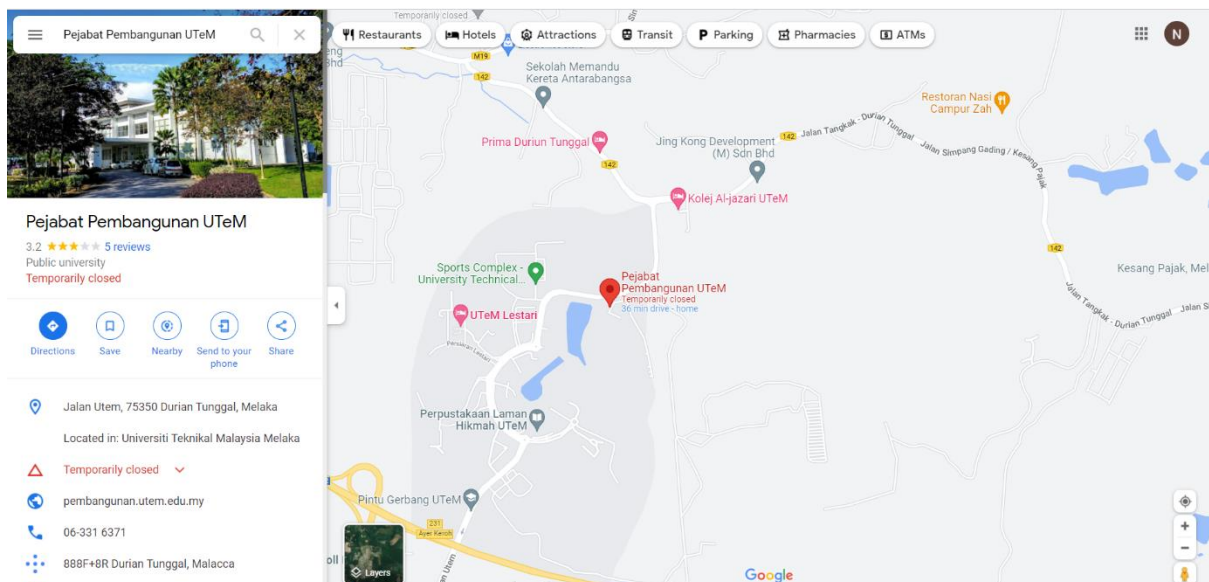


Figure 2.2 : Location Development Management Office of UTeM

Source : Google Maps View (2021)

2.2.2 Company Mission & Vission

Mission : Mewujudkan Pembangunan Fizikal Dan Insfrastruktur Yang Holistik Serta Komprehensif Berteraskan Kemahiran Dan KepakaranTerkini Seajar Dengan Aspirasi Universiti

Vission : Menjadi Peneraju Pembangunan Fizikal Dan Infrastruktur Yang Profesional

2.3 Company Organisation Chart

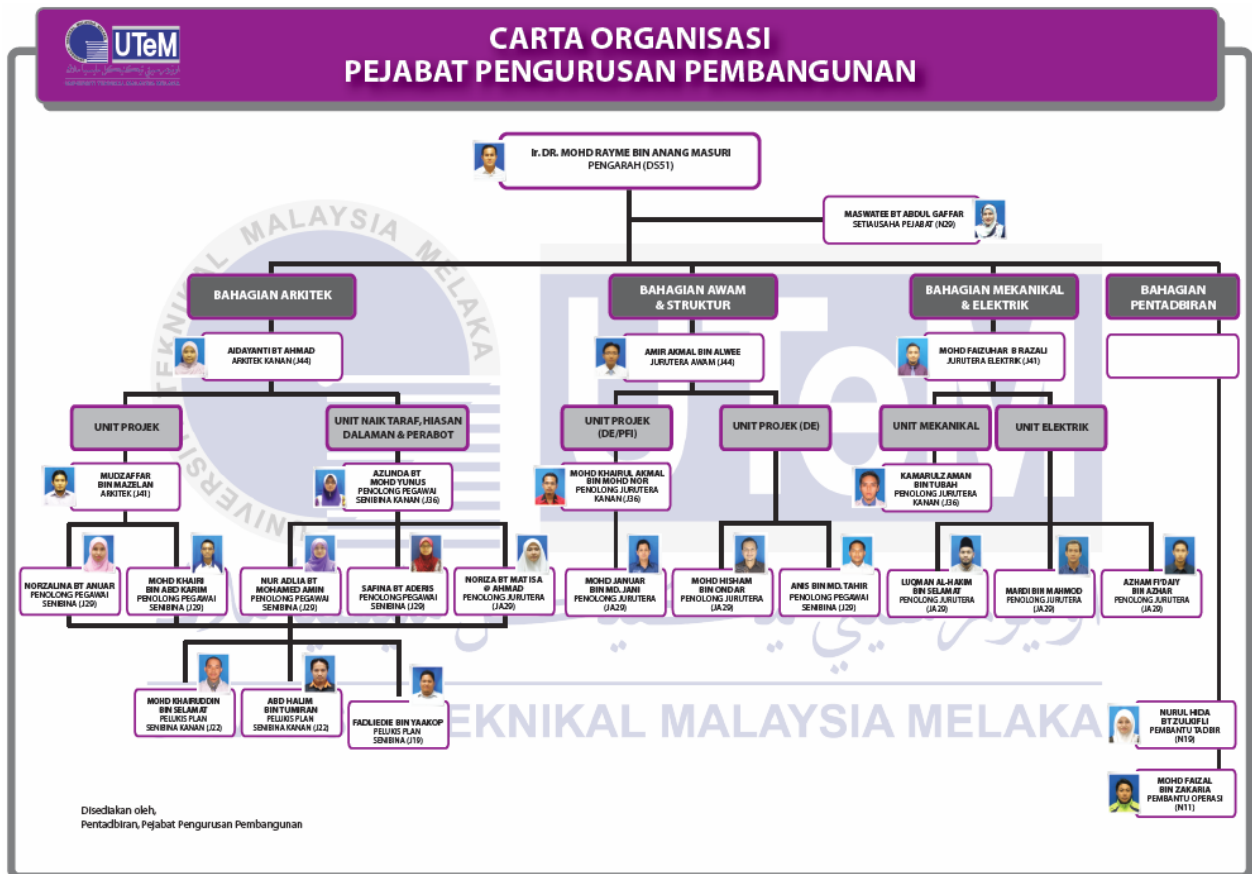


Figure 2.3 : Organization Chart of Development Management Office of UTeM

Source : Official Portal of Development Management Office of UTeM

2.4 List of Projects

2.4.1 Completed Projects

Table 1 shows the list of the latest completed projects in Kampus Induk, Universiti Teknikal Malaysia Melaka.

No.	Project Title	Project Value	Start Date	Completion Date	Contractor In-Charged
1.	Pembinaan Fakulti Kejuruteraan Pembuatan	RM55,586,930.00	23/10/2017	4/12/2019	Muar Usaha Bakti Sdn. Bhd
2.	Pembinaan Bumbung Tambahan di Kawasan Rehat PPS	RM45,000.00	22/9/2020	19/10/2020	Haji Yahaya Construction and Training
3.	Naiktaraf Ruang Percetakan Penerbit Universiti	RM152,500.00	2/1/2020	3/3/2020	Kahar Umar Eterprise

Table 1 : Completed Projects

2.4.2 Projects in Progress

Table 2 shows the list of the latest projects that are still on-going at Kampus Induk, Universiti Teknikal Malaysia Melaka.

No.	Project Title	Project Value	Start Date	Expected Completion Date	Contractor In-Charged
1.	Pembinaan Dewan Kuliah	RM15,000,000.00	17/6/2019	7/4/2021	Koperasi Peserta-Peserta Rancangan Felcra Seberang Perak Berhad
2.	Pembinaan Fakulti Teknologi Kejuruteraan	RM53,000,000.00	1/6/2019	28/11/2021	Pembinaan Pulau Sebang Sdn Bhd.
3.	Pembinaan Pejabat Keselamatan	RM2,489,955.00	3/2/2020	2/2/2021	MyAsas Engineering Sdn. Bhd.
4.	Membina PocketPark Dan Tiang Papan Tanda Rakan Industri di Perpustakaan Laman Hikmah	RM45,575.00	4/11/2020	5/1/2021	Gagasan Emas Enterprise
5.	Naiktaraf Bilik Guru Bahasa dan Bilik Rakaman TV UTeM PBPI	RM290,000.00	23/9/2020	22/2/2021	CTerra Win Sdn. Bhd.

Table 2 : Projects in Progress

CHAPTER 3

CASE STUDY CONSTRUCTION PROCESS

3.1 Introduction to Case Study



Figure 3.1 : Dewan Kuliah UTeM

Enrolled in Pejabat Pengurusan Pembangunan UTeM for 20 weeks as an intern student, all work focuses primarily on construction sites, inspecting the project entitled Cadangan Membina Dan Menyiapkan Kompleks Dewan Kuliah dan Lain-Lain Kerja Berkaitan Di Kampus Induk Universiti Teknikal Malaysia Melaka Di Atas Sebahagian Lot PT6560, Mukim Durian Tunggal, Daerah Alor Gajah Hang Tuah Jaya, Melaka. The assigned project was valued up to Ringgit Malaysia Fifteen Million (RM15,000,000.00). The construction project has already started on June 17, 2019 and is expected to be completed by December 16, 2020. But, ever since the covid-19 pandemic, the Kompleks Dewan Kuliah project had to be postponed and is expected to be finishes on early April 2021. In this conventional project, UTeM is the client and the main contractor in-charged is Koperasi Peserta- Peserta Rancangan Felcra Seberang Perak BHD (KPF).



Figure 3.2 : Project Signboard

Source: Development Management Office, Universiti Teknikal Malaysia Melaka

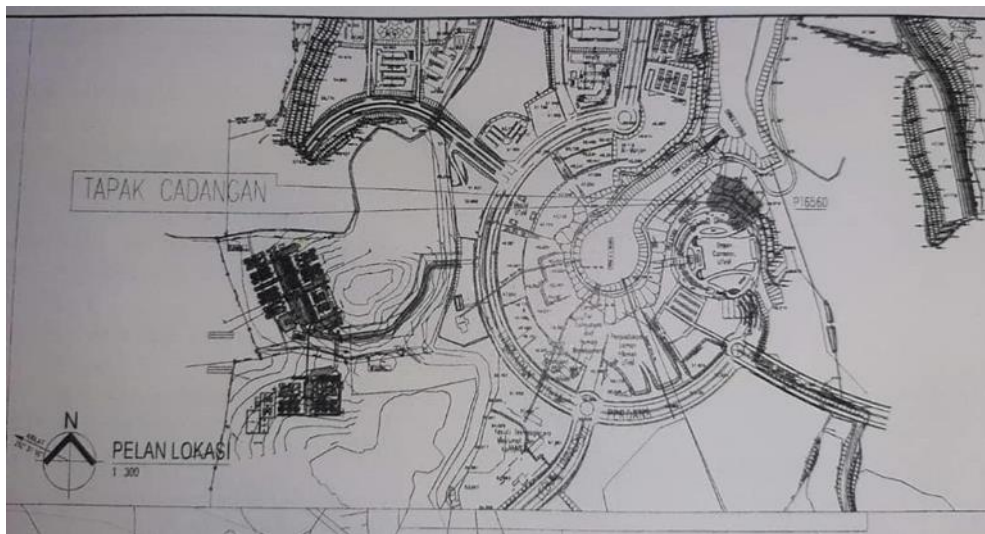


Figure 3.3 : Location Plan

Source: Development Management Office, Universiti Teknikal Malaysia Melaka

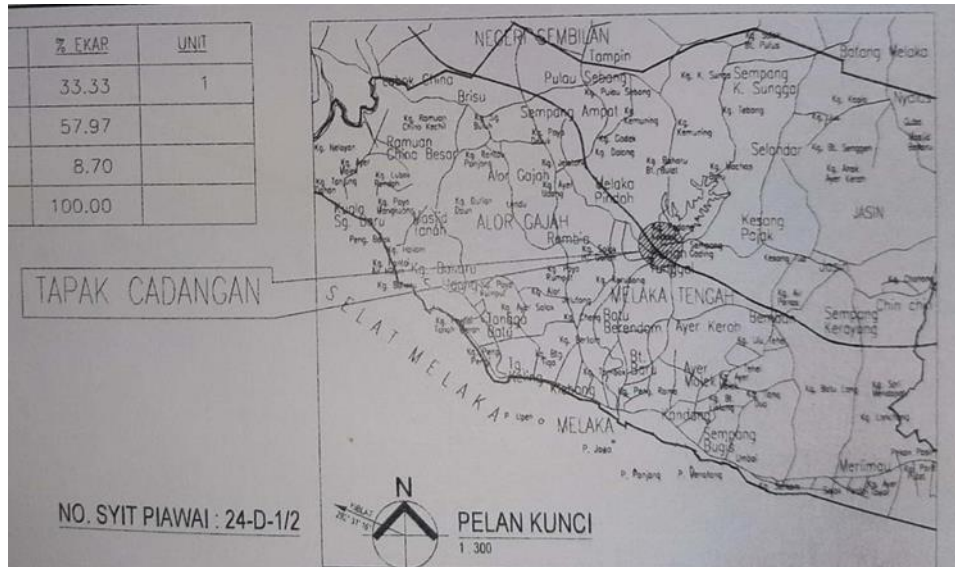


Figure 3.4 : Key Plan

Source: Development Management Office, Universiti Teknikal Malaysia Melaka

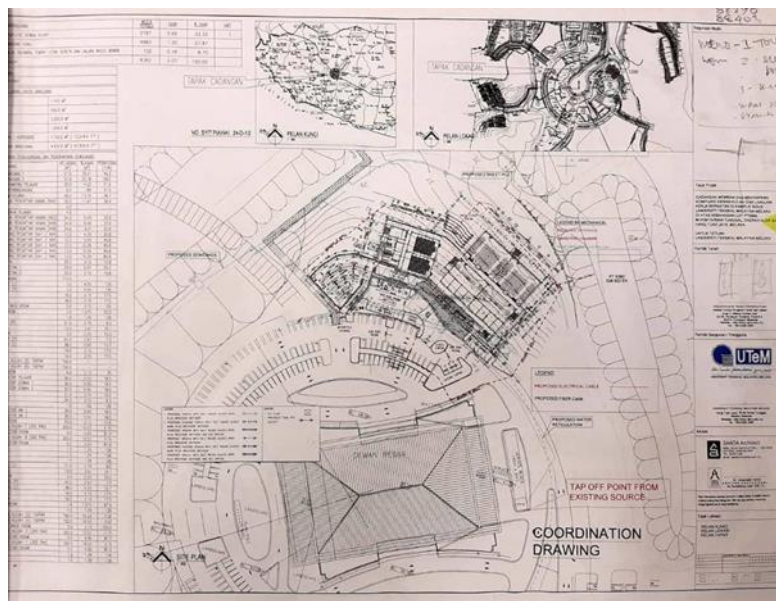


Figure 3.5 : Coordination Drawing

Source: Development Management Office, Universiti Teknikal Malaysia Melaka



Figure 3.6 : Setiing Out Plan

Source: Development Management Office, Universiti Teknikal Malaysia Melaka



Figure 3.7 :View of the Project

Source: Project Kompleks Dewan Kuliah construction site

This project is about to build and complete a Dewan Kuliah at the main campus of Universiti Teknikal Malaysia Melaka (UTeM) which consists of two blocks and have four levels. On the first floor there are two reading rooms in block B with area 57m². Besides, first floor is a special place for students to make referrals after class or a place for students to relieve stress. The second level is the administrative section in block B as well. The Administration

Office of the Academic Management Division, which is an office provided for staff. The administrative division has a discussion room, meeting room, senior deputy registrar room, assistant registrar room, staff room, file room, printing room and toilets.

Next, the third level in block A there are two lecture rooms, namely lecture rooms 5 and 6 which can accommodate 150 students each. While block B also have two lecture rooms, namely lecture rooms 7 and 8 which can accommodate 300 students each. Then, the last level which is level four is also the same as the third level which has two lecture rooms which are lecture rooms 3 and 4 in block A which can accommodate 150 students and has two theater lecture rooms which are lecture rooms 1 and 2 in block B which can accommodate 300 students each.



Figure 3.8 : Reading room on the first floor

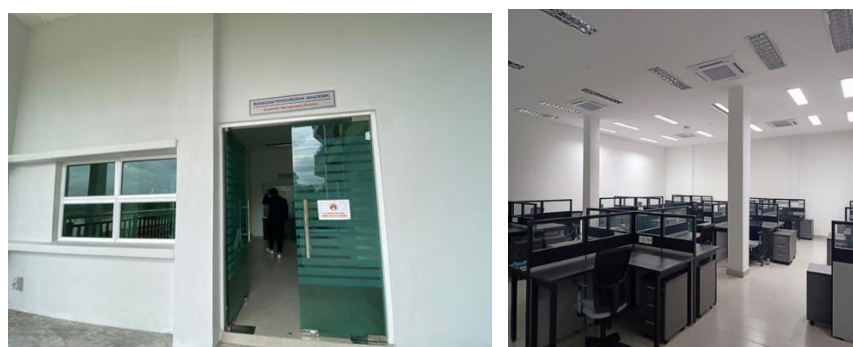
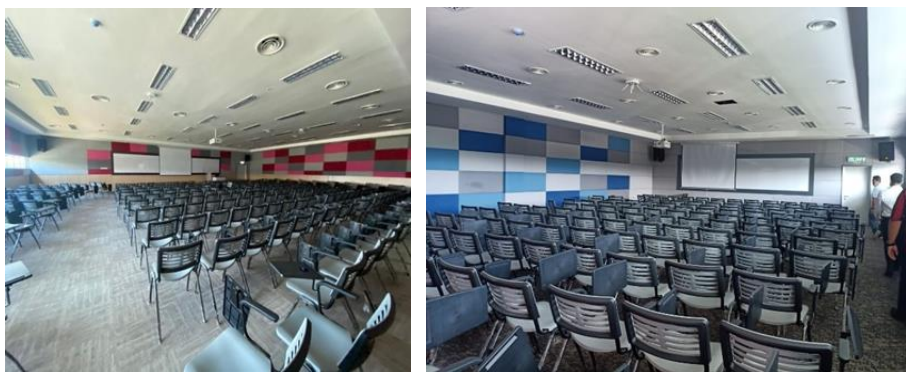




Figure 3.9 : Administrative division on the second level



UTAM		BBB1 3
KOMPLEKS DEWAN KULIAH <i>Lecture Hall Complex</i>		
• BILIK BACAAN 1 <i>Reading Room 1</i>	BBB1 1	
• BILIK BACAAN 2 <i>Reading Room 2</i>	BBB1 2	
• BAHAGIAN PENGURUSAN AKADEMIK <i>Academic Management Division</i>	BBB1 2	
• KAUNTER PERKHIDMATAN PELAJAR <i>Student Service Counter</i>	BBB1 3	
• DEWAN KULIAH 5 <i>Lecture Hall 5</i>	BBB1 3	
• DEWAN KULIAH 6 <i>Lecture Hall 6</i>	BBB1 3	
• DEWAN KULIAH 7 <i>Lecture Hall 7</i>	BBB1 3	
• DEWAN KULIAH 8 <i>Lecture Hall 8</i>	BBB1 3	
• STOR DEWAN 1 <i>Store Hall 1</i>	BBB1 3	
• STOR DEWAN 2 <i>Store Hall 2</i>	BBB1 3	
• STOR PELAJAR <i>Store Student</i>	BBB1 3	
• STOR AM 1 <i>General Store 1</i>	BBB1 3	
• STOR AM 2 <i>General Store 2</i>	BBB1 3	
• DEWAN KULIAH 1 <i>Lecture Hall 1</i>	BBB1 4	
• DEWAN KULIAH 2 <i>Lecture Hall 2</i>	BBB1 4	
• DEWAN KULIAH 3 <i>Lecture Hall 3</i>	BBB1 4	
• DEWAN KULIAH 4 <i>Lecture Hall 4</i>	BBB1 4	

Figure 3.10 : Lecture room on the third floor

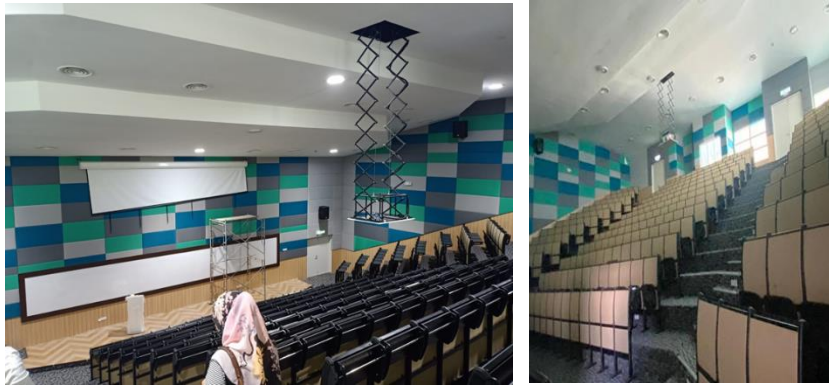


Figure 3.11 : Lecture room on the fourth floor

The main objective of this project is to provide a comfortable and convenient place for students during learning sessions which consists of a reading room, administration space and support room for the needs of facilities and management. Felcra Seberang Perak Berhad (KPF) plan participant cooperative is confident that this project will be completed sooner or later on the completion date determined by UTeM. Next, from the main contractor company, the person assigned to handle construction work is project manager, project engineer, architect protege, site security supervisor, project coordinator and mechanical & electrical coordinator. This is the person running the project works to run smoothly and build work based on it schedule. In addition, they are responsible for detecting any defects or problems that may occur affect the progress of the project.

3.2 Construction Process of Dewan Kuliah

1. Planning and development

The construction planning stage begins when the client or customer i.e. UTeM intends and plans to build and complete the lecture hall complex. In the beginning, UTeM needs to have a clear idea of the shape of the construction project it wants. Therefore, an architect from Saada Architect will be appointed to produce the concept drawing and estimate the initial cost of the project.

Subsequently, a materials surveyor from Synergy Tech Consult Sdn Bhd will be appointed to estimate the cost of the proposed project based on the concept drawing provided by Saada Architect and in accordance with the financial allocation made by UTeM.

1) Feasibility study

The feasibility study consists of a pre-feasibility study and a feasibility study. This study involves preliminary investigation to ensure that a construction project can be implemented. The purpose of this study is to ensure the suitability of the project from the aspects of engineering, economics and environmental impact (EIA). It is made based on data and information obtained from authority offices and visits to construction sites. This data and information needs to be scrutinized before site research work is carried out.

2) Provide financial allocations

The financial or capital allocation to carry out a construction project is fully funded by the client.

3) Appoint a consultant

Upon the client's agreement, the appointed architect will act as a consultant. Consultants consist of civil engineers, mechanical and electrical engineers, materials surveyors and land surveyors. The consultant then coordinates the work at all stages in the construction process. Typically, for large construction projects, a technical consultant or construction consortium will be appointed to handle and execute the construction process in more detail and using high technology.

2. Analysis and design

The information obtained from the site investigation will be analyzed before the project design work is carried out. The analysis and design stage involves work such as:

1) Analyse and select site

Various information needs to be studied and known before choosing a construction site. Therefore, all consultants like architectural consultants, civil and structural consultants,

mechanical and electrical consultants as well as quantity survey consultants should visit the project site to ensure and select the appropriate project site orientation. Among the factors in selecting a construction site are as follows:

- Position and area of the construction site
- The terrain of the site and the beautiful scenery
- Existing public infrastructure and facilities such as access roads to construction sites, electricity supply, drainage sources and telephone lines.

2) Measure the site

The position and location of the construction site is identified by surveyors with reference to data and information from survey maps and geological maps issued by the Department of Survey and Mapping (JUPEM) as well as data obtained from site survey work made previously. Based on the data and information, the position and location of the construction site can be determined.

3) Investigating the land

Soil investigation is one of the work processes done in the construction process. This soil investigation aims to identify soil layers and soil strength as well as to prove the validity and add to the information gathered. The information obtained will be used to provide a safe and economical building design.

4) Making a Building Design

The stage of making a building design is divided into three:

- Architectural design
 - It contains the layout of the site plan and building plan with emphasis on the beauty and space requirements of a building. In this design, detailed drawings are provided for the details of the work required in the structural design.
- Structural design
 - Made based on site plan and architectural building plan.
 - It aims to determine the size and type of substructure and superstructure foundation.

- Civil engineering design
 - Made based on site plans to determine water supply routes, sewerage, roads, drains and infrastructure facilities. This design must meet the requirements of the fire and the Uniform Building By-Laws 1984. At the same time, the electrical and mechanical designs are provided based on the same plan.

5) Provide Drawings and Work Specifications

The results obtained from the building design are used to prepare working drawings. This working drawing consists of design drawing, structural drawing and service drawing. At the same time, specifications of construction work standards will also be provided. The specification document contains details of the written work that describes the specifications of the building and the construction work that needs to be done.

6) Make a list of quantities to get an estimate of the cost of the project.

Project cost estimates are prepared based on working drawings and standard specifications, either in the form of a list of quantities or a lump sum price (LumpSum). Based on the cost estimates, the cost of progress and the overall cost of the project can be determined.

3. Management

Systematic project management in the construction sector is needed especially in terms of time management, work quantity and implementation team. At this stage, the materials surveyor collects information on the preparation of tender documents and makes tender bids. The terms of the contract are included in the tender document which touches on all three aspects of the quality of project management.

1) Obtain information

Upon complete on of all work at the analysis and design stage, information such as work standard specifications, addendum specifications, appropriate working drawings, instructions and revisions to tenderers, tender summaries and contract forms will be collected and consolidated in tender documents. Based on the information, the offer and pricing will be made by the contractor.

2) Tender offer

Tender offers will be advertised upon completion of the work of providing tender documents. The offer can be made either in the form of an open offer, a limited offer, a consulting offer or a pre-qualification offer. The tender offer depends on the type of work and the form of the offer issued. Interested developers or contractors need to purchase documentaries from the project management. After the offer is closed, the materials surveyor will make an assessment to select a contractor who is eligible to receive the contract. Once the contractor has been appointed, a 'Letter of Acceptance' will be submitted to the client. After that, an agreement or contract will be signed. The agreement or contract made between the contractor and the client must follow the conditions contained in the tender document. After receiving the construction contract award, the contractor will get insurance coverage in the form of performance bond, check construction law confirmation and get notice to enter the construction site. Next, the contractor needs to provide cost planning and project construction work.

3) Get employees

The contractor who successfully secures this project is responsible for all stages of construction work at the construction site including appointing subcontractors. The appointed subcontractor will try to get employees to carry out the construction project. The workers required vary according to the stage of work such as site work, structural construction work, tidying work, electrical work and machinery work.

4) Obtain materials and equipment

The delivery of adequate and timely supplies of materials is essential to ensure that the construction project runs smoothly. The contractor must make careful planning of the quantity and type of materials required for construction. This planning should be made based on the job specifications. In addition, materials must be stored properly in a suitable place and managed properly. In addition to obtaining materials, construction equipment must also be obtained. This equipment consists of light equipment and heavy machinery. Light equipment is usually purchased by contractors, while heavy machinery is purchased or rented.

4. Construction process

The construction stage includes site preparation work including construction of structures and work to complete the basic facilities of the project.

1) Structural Construction

Structural construction is divided into four parts namely Preparation to build, Earthwork, Construction of substructure and Construction of superstructure.

- Preparation to build

After obtaining permission to enter the construction site, the following things need to be done are cleaning the construction site, provide entry and exit routes to the construction site, provide temporary roads, provide temporary buildings such as site offices, material and equipment stores, control huts, residences and canteens, provide storage of materials such as reinforcement steel, structural steel, pile pieces and other materials, provide fences and barrier walls and provide project signage.

- Earthworks

Earthwork involves the process of preparing the formation level as required in the site work drawings. Based on the level of the baseline and the datum that has been marked, cutting and reclamation work is carried out. For areas with higher ground level from the formation level of the site, ground clearing work is carried out, while land reclamation work is carried out for areas with ground level lower than the formation level. Cutting and reclamation work is carried out until the site level is exactly at the formation level.

- Substructure Construction

All civil engineering structures have loads that need to be borne by the ground. Therefore, each construction of the structure begins with the construction of the substructure. Substructure refers to all parts of a building that are located below the ground level or moisture -proof layer. Substructure construction work includes piling work (if necessary), foundation, single pillar, basement (floor

and basement) and floor foundation layer. Usually, after the position of the foundation and the building wall is determined, the excavation of the foundation hole is started. Buildings with high loads will use pile foundations to bear the load. Concrete for foundation construction will be allowed to harden before earth beam work and a solid ground floor layer is continued. The hardened substructure is backfilled with the original soil.

- Superstructure construction

The superstructure, on the other hand, covers all the members of the structure that are located above the substructure, that is, at the top of the ground level. Building superstructures are built in stages and begin with the construction of structures such as columns, earth beams, first floor beams, solid ground floor, upper floor beams, roof beams and roof frames. This is followed by the construction of other building superstructures such as walls, doors, windows, stairs, ceilings, roof coverings and finishing work.

- Site meeting

Site meetings are meetings that are held on a monthly basis according to the suitability of the work. The purpose of this meeting is to know the progress of the work that has been done by the contractor as well as discuss the problems faced by the contractor and how to deal with them.

2) Complete the facility

During the construction of the structure, basic building facilities such as mechanical and electrical works for piping system, clean water supply, electricity supply, communication and telecommunication system as well as multimedia, air conditioning. Fire system and cleaning system must be provided. In addition, basic facilities outside the building such as providing construction area nameplates, access road signs, roads, drainage, landscaping and others should also be provided for the convenience of all parties who use them. In addition, site clearance work was carried out before the project was handed back to the client.

5. Submission

Once the project is completed, a certificate of completion will be issued to the developer or contractor. The developer or contractor will hand over the project to the client. Next, a Certificate Of Fitness must be obtained from the Local Authority. The employer is responsible for providing the final payment to the developer or contractor. A total of 5% of the total cost of the building project will be withheld as retention money by the client for one year or as per agreement. This period is known as the Defects Liability Period. During that period, in the event of any defects or damage as a result of not meeting the specified specifications, the contractor is responsible to repair it. If during that period there is no damage or the contractor has repaired all the damage reported, the detention money will be paid to the developer or contractor.





6. Defect liability period




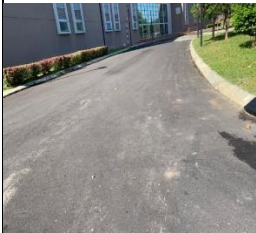
The defect liability period is a period during which the contractor has to repair any defects identified by the supervising officer after a work is certified complete. All defect repair expenses shall be borne by the contractor and no additional costs shall be imposed on the Government.

List of defect that detected at Dewan Kuliah:




Project details





<i>Contract completion date</i>	12 Oktober 2021	<i>EOT</i>	N0.4
<i>Date of inspection</i>	23 September 2021	<i>Weather condition</i>	Fine
<i>Inspection by</i>	En. Mohd Khairul Akmal Bin Mohd Noor (UTeM) Pn. Nur Hamizah Binti Mahiran (PKM) En Ahmad Kamari bin Salimin (KPF)		




No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
1.		<p>The floor in the hose reel room needs to be repaired.</p> <p>(Structure)</p>	16/05/2021		23/09/2021
2.		<p>There is excess concrete in the hose reel room level 4 block A.</p> <p>(Structure)</p>	23/09/2021		
No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
3.		<p>Honeycomb on beam level 2 block B.</p> <p>(Structure)</p>	23/09/2021		




4.		Honeycomb on beam level 2 block B. (Structure)	23/09/2021		
5.		Ground finishing on the outer wall of Block A (Structure)	23/09/2021		
No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
6.		Improving line marking in car parking areas Infra – R&D	16/05/2021		
7.		The road in front of the lecture hall is dirty Infra – RD	16/05/2021		23/09/2021





8.		Improving road marking on motorcycle routes Infra – R&D	16/05/2021		
No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
9.		Improving sump height Infra – R&D	16/05/2021		23/09/2021
10.		Struts in the drain route need to be repaired. Infra – R&D	16/05/2021		23/09/2021
11.		Old water reticulation pipes should be cut so that they are parallel to the drain wall. Infra – R&D	16/05/2021		23/09/2021

No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
12.		<p>Make sure all weep holes are not clogged, parallel and clean of any dirt or excess cement.</p> <p>Infra – R&D</p>	16/05/2021		
13.		<p>Make sure all weep holes are not clogged, parallel and clean of any dirt or excess cement.</p> <p>Infra – Slope Protection</p>	16/05/2021		
14.		<p>There are no weep holes along the rubble pitching in the motor parking area.</p> <p>Infra – R&D</p>	23/09/2021		

No	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
15.		<p>There is rubbish on the scupper drain</p> <p>Infra – R&D</p>	23/09/2021		
16.		<p>There is no water passage on the scupper drain.</p> <p>Infra – R&D</p>	23/09/2021		24/09/2021
17.		<p>There is a pile of rubbish in the area near the water meter</p>	23/09/2021		

NO	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
18.		<p>There is excess tar in some areas along the drain especially on the motor parking drain</p> <p>Infra – R&D</p>	23/09/2021		
19.		<p>There is a space between the pitching rubble and the drain that needs to be closed.</p> <p>Infra – R&D</p>	23/09/2021		
20.		<p>There is rubbish in the drain of the motor parking area.</p> <p>Infra – R&D</p>	23/09/2021		

NO	GAMBAR KECACATAN	KETERANGAN	TARIKH PEMERIKSA AN	TINDAKAN	TARIKH PEMBAIKA N
21.		<p>Unmounted hoarding iron near motor parking entrance area</p> <p>Infra – R&D</p>	23/09/2021		
22.		<p>Piles of sand at the entrance to the motorcycle parking lot</p> <p>Infra – R&D</p>	23/09/2021		
23.		<p>There is a stream of water that is not drained into the drain.</p> <p>Infra – Slope Protection</p>	23/09/2021		

NO	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
24.		<p>Stagnant water area under the entrance stairs of level 3.</p> <p>Infra – Slope Protection</p>	16/05/2021		23/09/2021
25.		<p>The number of weep holes is not enough.</p> <p>Infra – Slope Protection</p>	16/05/2021		
26.		<p>There got ground behind rubble pitching.</p> <p>Infra – Slope Protection</p>	16/05/2021		




NO	DEFECT PICTURES	DESCRIPTION	CHECKING DATE	ACTION	DATE OF REPAIR
27.		<p>There is a hole around the weep hole in the rubble pitching area.</p> <p>Infra – Slope Protection</p>	23/09/2021		
28.		<p>The landfill is untidy and there is no grass in the area.</p> <p>Infra – Slope Protection</p>	23/09/2021		
29.		<p>Land on footpath needs to be streamlined.</p> <p>Infra – Slope Protection</p>	23/09/2021		

Table 3 : List of defects

CHAPTER 4.0

CONCLUSION

4.1 Conclusion

In conclusion, the construction process includes all activities performed on the construction site to meet all the requirements of drawings and specifications contained in a construction contract document. A construction contract is an agreement signed by the client (project owner) and the contractor (the building party). The construction contract only specifies the desired result and does not specify how to obtain that result. Drawings and determinations only detail graphically and in writing about what the client wants. The client does not have the right to question the finished result, but does not have the right to intervene in terms of methods or means of construction.

Next, during this industry training I have many opportunities to improve my knowledge as well as techniques scope of work. I could see the progress of the work process related to the . The experience of undergoing training here is very meaningful to me because it can improve the knowledge with the staff in this development management office. They are not shy to share all their work experiences. So I made the sharing as an additional note for my future use. Furthermore, learning during lectures is not the same when compared to the training experience of this industry. The knowledge I have learned here I will practice and share with other friends. In addition, the construction process must be planned as well as possible so that construction activities run smoothly without any problems. A good process followed by careful and orderly planning will achieve the desired goal. In addition, employees who participate in the construction process need to work together and work hard so that the objectives and goals of the project are achieved successfully.

Lastly, the achievement of the objectives of the study is very important to ensure the study which has been run to achieve its goal. Some conclusions can be drawn for achieve each objective of the study

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