



DEPARTMENT OF BUILDING UNIVERSITI TEKNOLOGI MARA (PERAK)

TENDERING PROCESS

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

FEBRUARY 2022

It is recommended that the report of this practical training provided

By

Hafizuddin bin Kaiben 2019212176

Entitled

Tendering Process

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

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

(PERAK)

FEBRUARY 2022

STUDENT'S DECLARATION

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

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Date : 10/1/2022

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First of all, I would like to thank Allah s.w.t and His Messenger, Prophet Muhammad s.a.w. It is because of His blessing; it is possible for me to finish this practical report. I had finally managed to finish up this practical report with determination. All the time spent was worth my effort and time.

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Thank you so much.

ABSTRACT

A tender is a request to participate in a project or to accept a formal offer, such as a takeover bid, that is sent to the project's owner. The purpose of tendering is to ensure that real competition is developed, and bids are evaluated in accordance with a set of criteria. Therefore, this report will discuss the effectiveness of department building in the tendering process. There are two objectives in this report which are to identify type of tender that involve in tendering process and to exposes process are included in tendering process of construction works. To achieve the objective of this report, there are some works have been done. First, keep tracking tenders offered on the website. Then, attend the site visit to participate in the tender and conduct an inspection during the site visit to determine the programmed of works and cost for the project. Next step to achieve the objective is to create the tender document. All related data from the site visit can be include in the tender document and submit to the client at the specific date and time. The most important consequences of the work are every bidder will do their best to get the tender by remove operational inefficiencies as much as possible in order to cut costs while simultaneously improving quality and efficiency.

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CHAPTER 1.0

INTRODUCTION

1.1 Background of Study

A tender is a request to participate in a project or accept a formal offer, such as a takeover bid. Tendering is the procedure through which any organizations bids for significant projects that must be completed within a certain time frame (Kenton, 2019). It is a proposal from the client to the contractor to do a job at a certain cost and within a specific period. According to the cost of the work, it is announced in the form of a tender notice in newspapers, notice boards, and other places (Mahajan, 2020).

The purpose of tendering is to guarantee that real competition is established, and tenders are assessed using a set of criteria. These criteria may be represented in terms of financial considerations, such as a basic review of tender quantities or a more complicated financial evaluation that takes into account predicted expenditures across the project's life cycle (Davis & Stafford, n.d.). This means that all bidders must get the same information, which must be adequate in substance and accuracy to enable them to correctly analyze the project's implications and bid appropriately.

To obtain offers, tender documents are created. Tender documents may be prepared for a range of contracts, including equipment supply, the main construction contract which includes contractor design, demolition, enabling works, and so on. The tender documents allow tendering contractors to price the project and submit a bid to accomplish it. While the documents' content varies, it is critical that they be in a format that allows the tenderer to completely comprehend the extent of the task. The tender documents comprise specifications and drawings in the absence of bills of quantities (Heidenreich, 2010). The tendering process provides a number of advantages. It encourages a competition. Tenders make contractors aware that if they do not deliver their best, they will not be given a contract. As a consequence, the client company may expect the greatest outcomes (Manuel, 2021). Tenders give the greatest value for the money invested from the client's side. It is because the client has the flexibility to choose from a wide pool of potential providers who can give the highest quality service at the lowest cost. The aim of this study is to look into the effectiveness of department building in the tendering process.

1.2 Objectives

The following are the objectives to be achieved about the tender process in the construction industry.

- i) To identify type of tender that involve in tendering process
- ii) To exposes process are included in tendering process of construction works

1.3 Scope of Study

The scope of study has been carried out at Kampung Kastam, Lot 290, Jalan Lama Rantau Panjang, Kelantan. The site visit for the project was on 30 September 2021. This study will be focused on the type of tender which will determine the content of the tender document. Then, this study also focus on the process in the tendering process of construction works. It consists a procedure on how tender is carried out from beginning towards end. Last, this study will focus on the content that must be included in the tender document. All content must be perfect, reasonable, and follow to standard tendering procedures.

1.4 Methods of Study

i. Observation

This method is done directly when doing the site visit for the project due to the exposure to the real work. Observation was made to investigate sites such as identifying the terrain, surface water run, availability of project proposal sites and so on by conducting site visits and reviewing project development proposals approved by the client to ensure that the project complies with the project scope and criteria. By observing, the programme of works can be determined clearly and the process creating the tender document could be figured out. During the site visit, photos and videos were taken. Taking written notes throughout the observation is also necessary to ensure that any significant information is not overlooked.

ii. Interviews

The interview is a good way to get a lot of information. Unstructured interviewing happens when questions may be asked directly, and responses can be obtained on the spot. The question was asked to the client during the site visit. Then, the semi structured interviews also happen in this case study. The date was set up to hold a meeting and discussion with the client to ask more detail about the need statement of the project and any important information regarding the condition of the existing project site.

iii. Document Reviews

The completion of this report is referring based on the past document tender, tender need statement, company profile and standard specification of works by JKR.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of Company

Perunding Teras Wajar started in 2008 with the objective of providing consulting and Management services in all fields related to civil and structural engineering structures for the private sector and the government.

Perunding Teras Wajar policies governing the administration of its operation reflect both a deep commitment and a sense of identification with each project served. It takes pride for the works that it performs, and the quality of the services rendered. From experience on many feasibility and planning studies as well as design and construction management projects, the firm has gained familiarity with the requirement and procedures of approving authorities. This experience has been invaluable in successfully meeting technical procedure requirement.

Perunding Teras Wajar conducts each and every engagement in accordance with the highest established and accepted standard for consulting firms. The company's uncompromising commitment towards quality professional service ensures client's success in projects of every magnitude and complexity.

Perunding Teras Wajar goal is always to bring the design services for all related activities in civil engineering, structure and road to us and future customers in terms of Cost, Quality and Delivery Time.

The Mission of Perunding Teras Wajar is to undertake each engineering venture with the aim of providing the highest standard in quality, efficiency, costeffectiveness, safety and environmental preservation through the application of technology and the continuous development and enhancement of human potential based on Islamic Principles.

2.2 Company Profile

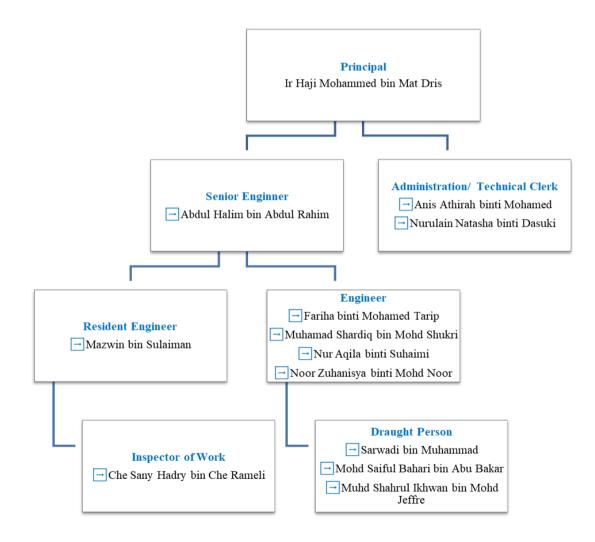
Company Name	Perunding Teras Wajar
Established Date	January 2008
Address	PT363, Tingkat 2, Rumah Kedai Lembah
	Sireh, 15050 Kota Bharu, Kelantan
Contact	09-747 1270/ 09-747 5270
Business type	Consultant Civil and Structure
Registered Company	i- Corporate Responsibility Agenda
	ii- Board of Engineers Malaysia
	iii- Ministry of Finance

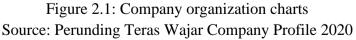
Table 2.1: Company profile

Source : Perunding Teras Wajar Company Profile 2020

2.3 Company Organisations Chart

In Perunding Teras Wajar, there are 12 employees who have their own role in doing their job to implement a project smoothly. It is headed by Ir. Haji Mohamed bin Mat Dris as chairman of the company and assisted by the engineers, draught persons, administrator, and clerks. In this company, there are 6 engineers who will perform their duties according to their respective expertise. They were also assisted by three draught persons who performed the task by preparing drawings for each construction to be referred by engineers. Also not forgetting to the administrator and clerk who played a role in correspondence and managing company expenses and accounts. Figure 2.1 show the organization chart of Perunding Teras Wajar.





2.4 List of Projects

2.4.1 Completed Projects

Perunding Teras Wajar have been involved in various project scopes. Among the scope of the projects involved are Road and Highway Engineering, Water Supply and Treatment Engineering and Building and Structural Engineering. Perunding Teras Wajar have experience in all phases of the scopes from concept to the operational and maintenance phases. Table 2.2 show the completed projects by Perunding Teras Wajar for the last five years.

No.	Project Title	Project	Start	Completion	Project	Client
		Value	Date	Date	Durati on	
1	Cadangan Membina Dan Menyiapkan Sebuah Stesen Minyak Diatas Tanah Seluas 1.00 Ekar (0.4047 Hektar) Bagi Pt5914 Mukim Pulai, Daerah Galas, Jajahan Gua Musang, Kelantan Darul Naim.	3.8M	1/2017	9/2017	8 Months	PETRO N
2	Projek Menaiktaraf Sistem Bekalan Air Di Perkampungan Rkt Chalil, Gua Musang, Kelantan	6.8M	6/2020	10/2020	4 Months	KESED AR
3	Perumahan Taman Kesedar Putra 2, Bandar Gua Musang, Jajahan Gua Musang, Kelantan Darul Naim.	45M	5/2020	8/2021	1 Year 3 months	KESED AR
4	Cadangan Pembaikan Cerun Dijalan Kemubu Bertam (D233) Di Km	91K	10/201 8	1/2019	3 Months	SELEN GGARA TIMUR SDN BHD.

Table 2.2: Completed projects

	12.10 Daerah Kuala Krai, Kelantan Darul Naim.					
5	Cadangan Membina Dan Menyiapkan 2 Unit Rumah Teres 2 Tingkat Di Atas Lot Pt 689 & Pt 705 Dan 15 Unit Rumah Teres 1 Tingkat Di Atas Lot Pt 690–Pt 704, Mukim Seterpa, Seksyen 70, Daerah Banggu, Jajahan Kota Bharu, Kelantan.	1.8M	6/2016	4/2017	1 Year	WIRA HOMEL AND SDN. BHD
6	Cadangan Membina Dan Menyiapkan 2 Unit Kedai Pejabat 3 Tingkat, Dan 6 Unit Kedai Pejabat 2 Tingkat, Bandar Baru Gua Musang, Jajahan Gua Musang, Kelantan Darul Naim.	1.3M	12/201 8	12/2019	1 Year	KESED AR
7	Cadangan Membina Dan Menyiapkan 2 Blok Bangunan Transit Giatmara Jeli, Kelantan	800K	12/201 8	11/2019	11 Months	MARA
8	Pembinaan Jalan Utama Jaringan Jalan Dalam Kampus Dan Kerja-Kerja Infrastruktur Kampus Jeli	12M	4/2018	7/2018	3 Months	UMK KELAN TAN
9	Projek Membina Dan Menyiapkan Poliklinik Usains Di Universiti Sains Malaysia.	800K	1/2017	5/2017	6 Months	U SAINS HOLDI NG SDN. BHD

10	Cadangan Membina	1.2M	3/2019	5/2020	1 Year	KPJ
	1 Unit Rumah				2	DEVEL
	Kaedai/Pejabat 4				Months	OPMEN
	Tingkat Di Atas Lot					Т
	Pt 3798 Mukim					SDN.
	Gual Nering,					BHD
	Daerah Rantau					
	Panjang, Jajahan					
	Pasir Mas,					
	Kelantan.					

Source: Perunding Teras Wajar Company Profile 2020

2.4.2 Project in Progress

There are two projects in progress right now. The scope for the project is Water Supply and Treatment Engineering and Building and Structural Engineering. Table 2.3 show the project in progress by Perunding Teras Wajar.

No.	Project Title	Project	Start	Completi-	Project	Client
		Value	Date	on Date	Durati on	
1	Projek Menaiktaraf	49.8M	6/2017	-	-	KKLW
	Loji Rawatan Air					
	Tualang,					
	Kuala Krai					
	Kelantan					
2	Cadangan Membina	900K	12/2021	-	-	Encik
	Sebuah Banglo 2					Mujahid
	Tingkat di Atas Lot					
	2109 (GM 1634),					
	Mukim Pachor di					
	Kg Panchor,					
	Pengkalan Chepa,					
	Kota Bharu,					
	Kelantan.Ter					
	1	1	1	1	1	1

Table 2.3: Project in progress

Source: Perunding Teras Wajar Company Profile 2020

CHAPTER 3.0

TENDERING PROCESS

3.1 Introduction to Case Study

The project is to propose "Kerja-Kerja Menaiktaraf Secara Reka & Bina Pusat Sokongan Sosial Setempat di Perumahan Kastam (Kg. Kastam), Lot 290, Jalan Lama, Rantau Panjang, Kelantan". The quarters are the resident of Kastam officers for the convenience of officers to serve in the Rantau Panjang area as shown in figure 3.1. After a few years the quarters were used and have now been abandoned for 5 years. Therefore, the Ministry of Women, Family and Community Development took the initiative by making "Kuarters Perumahan Kastam" as a One Stop Social Support Centre (PSSS).

Perumahan Kastam with an area of 1.806 hectares and located in mukim of Pekan Rantau Panjang. It is about 20 kilometers to Pasir Mas and 44 kilometers to Kota Bharu and borders southern Thailand. It has been known as a 'Duty Free Zone' which is also the main entry point into Thailand especially to the Sungai Golok town.



Figure 3.1: Location of Rantau Panjang: Source: <u>https://earth.google.com/web/</u>

The proposed project area has been abandoned for five years but the existing structure condition is still in good conditions and safe for living there. However, there are a few things that need to be emphasized in order to upgrade the area in order to become a One Stop Support Centre. Figure 3.2 show the location of the proposed project. The objective of the project is to redevelop the area equipped with the infrastructure facilities such as guidance and counseling units temporary placements and shelters for victims in need as well as welfare assistance.



Figure 3.2: Location of the project Source: <u>https://earth.google.com/web/</u>

3.2 To identify type of tender that involve in tendering process

The type of tender involved in this project is open tender. Open tender is the main tendering process employed by both the government and private sector (Jeasika, 2016). Open tendering allows anyone to submit a tender to supply the goods or services required and offers an equal opportunity to any organization to submit a tender. This type of tender is most common for the engineering and construction industry (Kenton, 2019). The tender was open to all bidders who passed the eligibility requirements. Although it is open tender, not all contactors are allowed to participate in the project. In the invitation tender, it is stated that contractors with G4 CIDB grade are allowed to participate in this project. The G4 code represents projects that have a cost not exceeding 3 million. In this project, Yayasan Kebajikan Negara (YKN) as a client has advertised the tender in their website to all bidders. All interested bidders can enter the tender because there is no limit number of participants in this type of tender. All contractor who passed the eligibility requirements can apply for the tenders. This procedure prevents discrimination and favoritism.

During the site visit on 30 September, there are many construction firms came to join the tender. The process of open tender will take a long period of time for completion of the procurement action. At least 10 bidders came during the site visit. Among of them are Maju Tanjong Sdn. Bhd and Prima Properties & Construction. With large number of bidders, the client will make a strict selection about the decision to choose the best bidders that can offer higher-quality services at a lower cost and more quickly. Once all the contractors have attended and marked attendance, a representative from YKN gives a briefing on the project as shown in figure 3.3.



Figure 3.3: Briefing from YKN representative

All important information on the tender process has been notified by YKN representatives and recorded by all contractors. Later, YKN representative will bring all contractors around the area that want to be renovated and inform about the problems of the place as well as the proposed work to renovate the place. There are many problems in the area including broken ceilings and broken floor tiles as can be seen on figures 3.4 and 3.5. Many of the problems in this place are likely caused by many pests as a result of the buildings have been abandoned for five years. After all briefings from YKN representative have been completed, the contractors will be given tender document and will be charged for each tender document. Completed documents must be sent to YKN office on the specified date to be received by YKN.



Figure 3.4: Broken ceilings



Figure 3.5: Broken floor tiles

3.2.1 Call for teamworking

Call for teamworking are essential to the success of the work. Working well with other teamwork can help to complete the tender efficiently. Among the parties involved in the project are contractors, architects, civil & structure consultants, mechanical & electrical consultants and quantity surveyors as shown in figure 3.6.

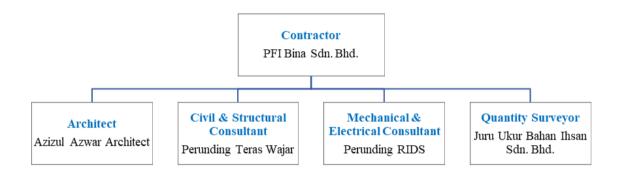


Figure 3.6: Project Organisation Source: Perunding Teras Wajar tender document

. The parties involved will work together to share ideas, improve each other's work. Some of the work that requires cooperation between the parties are as follows. Perunding Teras Wajar has provided a detailed slope protection and security fencing drawing. Juru Ukur Bahan Ihsan who will take on the task of assessing the price for the cost of the completeness of the works. In addition, Perunding Teras Wajar will also work with Azizul Azwar Architect in preparing drawings for the upgrading project.

3.3 To exposes process are included in tendering process of construction Works

Tendering is the process of seeking bids for significant projects, and it is often used by government agencies. The primary goal of the construction tendering process is to avoid favoritism and corruption in the awarding of contracts to construction firms. There are two process in tendering procedure on how tender is carried out from beginning until the end. The following process are tender invitation and tender submission

i. Tender Invitation

An invitation to tender, also known as an ITT, is a formal procurement document sent by the client requesting competitors to submit bids for the contract of works they want to complete. It is the initial step in competitive tendering. A competitive environment exists when an invitation to tender is issued. When it comes time to choose the winning offer, both the client and the supplier are aware that all of the suppliers' items will be compared. Yayasan Kebajikan Negara (YKN) has issued an advertisement in their website which can be access at https://yknm.org.my/sebutharga-tender/ to advertise tenders to the interested construction firms as shown in figure 3.7. It was advertised on 20 September 2021. In the advertisement, there are some important items were been included. For example, the date, time and place of site visit has been set on 30 September 2021 at Perumahan Kastam (Kg. Kastam), Lot 290, Jalan Lama, Rantau Panjang, Kelantan. Closing date for tender submission is 29 October 2021. It is also mention about the place of the submission tender which located Yayasan Kebajikan Negara, Malaysia, Aras 8, Kementerian Pembangunan Wanita, Keluarga dan Masyarakat (KPWKM), No. 55, Persiaran Perdana, Presint 4, 62100 Putrajaya.

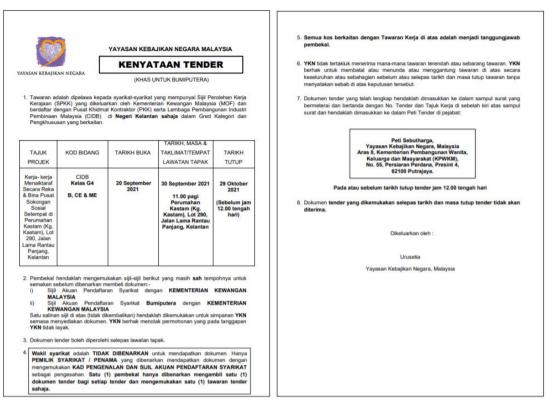


Figure 3.7: Tender advertisement Source: <u>https://yknm.org.my/sebut-harga-tender/</u>

ii. Tender Submission

When contribute into the tender, Perunding Teras Wajar has prepare the tender document before the date for the submission which on 29 October 2021. In one month, the company has prepared the tender document. It is important to submitting all essential tender documents in their entirety, because an incomplete collection of documents would result in an invalid tender. All tender documents which consist the tender form, bill of quantities, tender drawings and others important item must be sealed and submitted at the location stated in the tender advertisement which is at YKN office located at Persiaran Perdana Presint 4, Putrajaya. Figure 3.8 show the process of wrapping the tender document one day before the tender submission date.

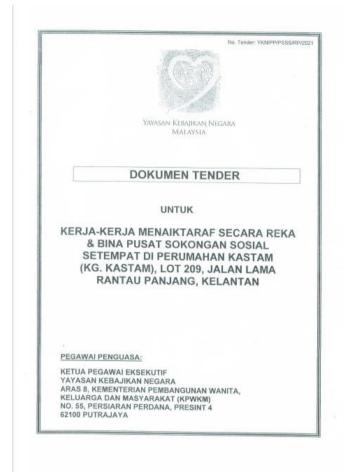


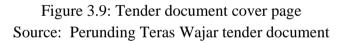
Figure 3.8: Process of wrapping the tender document before submitting the tender

Tenderers may submit documents in person or through a representative. The principal of the company has submitted the tender document at the mentioned location. Then, client will evaluate the tender in order to select the best contractor for the construction project.

3.3.1 Contents in the tender document

Tender documents may be created for a variety of contracts, including equipment supply, the primary construction contract, which covers contractor design, demolition, enabling works, and so on. Construction companies who are bidding on the project are given the opportunity to price it and submit a proposal to complete it. Tender documents must be detailed and clear because an incomplete collection of documents would result in an invalid tender. There are some content that must be included in the tender document which are form of tender, specification of works, bill of quantities and tenders drawings. Figure 3.9 shows the cover page of the tender document of the project.





i. Form of Tender

The form of tender is a document that the client makes and that the tenderer signs to show that it understands the tender and agrees to the terms and conditions and other rules of participating in the project. The form contains the main points of the tender which are starting date, duration, and the tender sum.

ii. Need Statement

Need statement is what client need. It is intended to state the problem of the project as well as what work needs to be done to complete the project. For this project, the entire roof truss frame should be changed due to termite problems and the existing fence that is about to collapse will be replaced by an anti-climb type gate and fencing.

iii. Bills of Quantities

Bills of Quantities (BQ) are a systematic method used in the construction industry to record items of work for tendering purposes and to create a fair agreement between the parties involved in the contracting process. So, it is important to be included in the tender document. In the open tendering procedure, the BQ tender is applied. Contractors may rate work based on the same information using the BQ documents with the minimum amount of effort. BQ containing the description, quantities and cost of project works. There are preliminaries item, civil, electrical and any other items contain in the BQ for this project. Figure 3.10 show the item preliminaries in the bills of quantities. Preliminaries item are done before starts the project such as provides work insurance policy and work compensation insurance policy.

No	Keterangan	Unit	Kuantiti	Kadar (RM)	Jumlah (RM)
1.0	KERJA - KERJA PERMULAAN (Preliminaries) Sebarang buliran yang tidak dihargakan adalah dianggap talah dimasukkan didalam harga butiran-butiran lain, Petender wajib menghadiin melawat tapak bina serta memahami kehendak dan keperluan kerja dan menabaga syarat-Syarat Kontrak bersam-asma dengan Pelan-Pelan dan Spealifkasi untuk memastikan sendri liputan kerja yang tirtihat sebelam menghargakan tendemya kerana sebarang tumtuhan dengan perkara di atas tidak akan dipertimbangkan. Segala kerja yang dilakukan pertu mengikut garis panduan "Good Engineering Practico" terutama bagi data-data kecil yang tidak dilampirkan di dalam Senaral Kuantti (BQ) dan setiap kerja-kerja pemasangan pertu mengikut cara				
	pemasangan dan kerja yang dicadangkan oleh pihak pengeluar barangan tersebut				
a	Menyediakan polisi Insuran Kerja dar/atau Liabilifi Awam (Contractor All Risk) dan Polisi Insuran Pampasan Kerja (Workmen Compensation) dan No. Pendaftaran dengan PERKESO	Pukal			
b	Menyediakan keperluan berkaitan pembersihan dan pembuangan sampah bagi memastikan kawasan pembinaan sentiasa dalam keadaan bersih sebelum dan selepas pembinaan	Pukal			
c	Membekal tenaga kerja, peralatan, bahan-bahan, pengangkutan dan lain-lain bagi menjalankan kerja-kerja mengikut spesifikasi JKR stau sahan yang dikolunarian oleh Pegawai Penguasa. Setiap perkakasan atau pemasangan perlu mendapat kelulusan SIRIM atau JKR diau JKRP (jika perlu)	Pukal			
d	Menyediakan sampei/bahan serta katalog bagi keseluruhan kerja	Pukal			
_	To Collection				_

KERJA - KERJA MENAIKTARAF SECARA REKA BINA PUSAT SOKONGAN SOSIAL SETEMPAT DI PERUMAHAN KASTAM (KG. KASTAM), LOT 209, JALAN LAMA RANTAU PANJANG, KELANTAN

Figure 3.10: Preliminaries item Source: Perunding Teras Wajar tender document

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iv. Specification of work

The work should be carried out according to these specifications. All work must be completed in conjunction with the installation of electrical, plumbing, sanitary, and other services. The specification used in the construction right now is Standard Specifications for Building Works 2014 by Jabatan Kerja Raya Malaysia (JKR) as shown in figure 3.11.

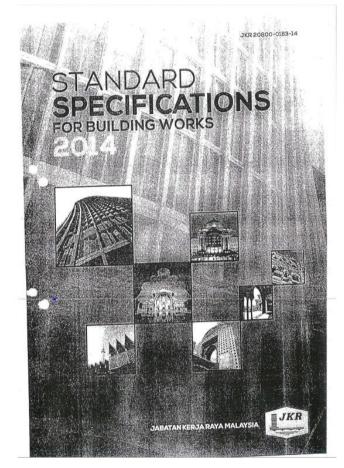


Figure 3.11: Specification of work Source: Perunding Teras Wajar tender document

v. Critical Path Method (CPM)

Critical Path Method is a process for identifying work schedules to be performed on site until the project is completed. The CPM stated the estimated total duration of the project which is 9 months. It also contains a list of works performed, duration as well as the start and end dates of certain works. Figure 3.12 show workflow for temporary works and temporary service.

Task Mode *	Task Name	Duration 👻	Start -	Finish
* ~	KERJA KERJA MENAIKTARAF SECARA REKA & BINA PUSAT SOKONGAN SOSIAL DAN SETEMPAT DI PERUMAHAN KASTAM (KG.KASTAM).LOT 290. JALAN LAMA RANTAU PANJANG, KELANTAN.	270 days	Sat 1/1/22	Thu 12/1/23
-	1.0 SITE POSSESION	1 day	Mon 3/1/22	Mon 3/1/22
*	# 2.0 PRELIMINARIES	30 days?	Tue 4/1/22	Mon 14/2/22
*	2.1 Law, Regulations and Requirements	30 days	Tue 4/1/22	Mon 14/2/22
*?	Insurance against personal injuries and damage to property	30 days		
\$?	Insurance Workman Compensation	30 days		
*?	Insurance of works	30 days		
*?	SOCSO scheme	30 days		
*?	Performance bond	30 days		
*	# 2.2 Temporary Works	8 days	Tue 4/1/22	Thu 13/1/22
k?	Access and temporary roads and signage	2 days		
*?	Site dewatering and pumping	2 days		
17	Hoarding and Project Signboard	2 days		
*?	Material storage	2 days		
*	Temporary Service	14 days	Thu 13/1/22	Tue 1/2/22
1?	Water and power supply	4 days		
×?	Plant, equipment and machinery (scaffolding and staging)	7 days		
*?	Safety signage	1 day		
*?	Dust prevention	1 day		

Figure 3.12: Critical Path Method (CPM) Source: Perunding Teras Wajar tender document

vi. Tender Drawings

The working drawings are used to carry out the building work on the job site. They're full of much information. All relevant information may be presented in one set of drawings, depending on the size of the project. This process is fairly specific and has its benefits. For example, the bricklayer can see what the electrician has to perform and can quickly understand why any tight tolerances are necessary. For this project, there is about 22 drawing submitted to the client. All the drawing consists of the site plan, plan and elevation, slope protection, layout trusses and electrical services. Figure 3.13 show the list of drawing on the proposed project.

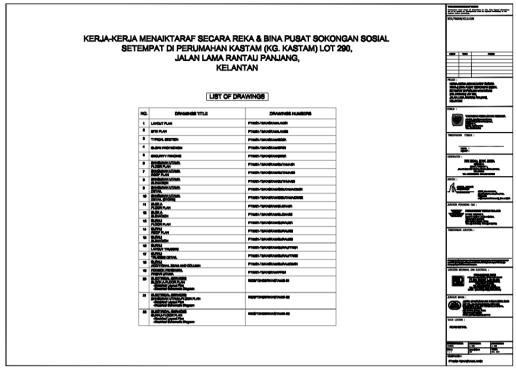


Figure 3.13: List of tender drawing Source: Perunding TerasWajar tender document

CHAPTER 4.0

CONCLUSION

In a nutshell, the tendering process are a method or process that can be used effectively and intelligently. Tender can be a good way to choose the bidders. Since selection is based on both quality and price, every bidder makes every effort to remove operational inefficiencies as much as possible in order to cut costs while simultaneously improving quality and efficiency. This whole process promotes healthy competition in the construction industry. In open tendering, the tender is open to all bidders without any limit participation. All qualified bidders as per the conditions set by the client may participate in the tender. This open tender process is common type of tender used in Malaysia and have many benefits such prevents discrimination and favoritism because all eligible bidders can apply for the tenders. Then, the tender document also the important document in the tendering process. Tender document will state all the important points for each project such as cost, time, programmed of work and drawing to be evaluated by the client. It can be concluded that tendering process is effective in the department of building.

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