PROGRAMME IN BUILDING SURVEYING

DEPARTMENT OF BUILT ENVIRONMENT STUDIES AND TECNOLOGY

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

PERAK BRANCH

SERI ISKANDAR CAMPUS

INTERGRATED PROJECT OF MANAGEMENT

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PRACTICAL TRAINING REPORT

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This practical training report is fulfilment of the practical training course.

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ACKNOWLEDGEMENT

It is always a pleasure to humbly acknowledge the excellent people in IFU ENTERPRISE for the sincere guidance. I have received in exercising my practical training for 22 memorable weeks starting from the 9th September until 31th Jannuary 2022.

To begin with, I undoubtely want to express my deep and humble gratitude to the Almighty Allah for giving me this excellent opportunity to undergo this practical training week successfully.

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EXECUTIVE SUMMARY

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1.0 INTRODUCTION

It is indeed undeniable that underlying theories and studies about the science in Building Surveying should be sought by every student of the registered course. However, one could not resist the important needs of developing critical thinking, enhancing communication and behavioural skills as well as having experiences and a bit of idea what is happening in the real planning world. In order to achieve the said elements, practical training is set as an utterly important program included in the Bachelor of Building Surveying in University Teknologi Mara (UITM). It is compulsory to be taken by all last Year students of this course.

This practical training consists of 14 weeks of industrial training for the students and be ultimately responsible for the tasks given during the practical training. Practical training will be conducted at various government departments, agencies and private firms that have been approved by the Department.

1.1 DURATION INDUSTRY TRANING

The internship report is being proposed based on the 22 weeks' practices in IFU ENTERPRISE under the supervision of its Sr Dr Mohamad Haszirul Bin Mohd Hashim from 9th September 2021 to 31th January 2022 as an academic requirement in the Bachelor of Building surveying. Being in a completely practical world has widened the trainee's eyes and gave abundance experiences intended very usefully for her future career.

This report contains the details of the respective company, including the structural organisation and services provided, practical training objectives, the trainee's working experiences, the relevancy of work experiences to studies as well as related Appendix and supporting documents.

This trainee has involved with real-life planning projects which naturally acquire various necessary skills and expertise, particularly regarding in building construction. The experience from internship program also learn how to manage worker and how to deal with problem with all parties in site.

1.2 PROBLEM STATEMENT

Delay in project is one of the problems that often occur on construction project in Malaysia and around the world. There are many projects cannot be operate as specified in the contract. The period of time for the project will be longer than it should be. Due to late completion of the project, many plan and programs related had to be postponed. This will be huge impact to many people such as investor.

The problem of project management also can make the project cost pass the limit that has been set up. This also will impact the quality of the project especially when the project timeline around the corner.

1.3 INTRODUCTION TO COMPANY

Detail of the practical training company are as follows

Name of the Company	: IFU ENTERPRISE
Registration No.	: IP0187450-T
Date of Establishment	: 2nd January 2003
Address	: Kampung Sungai Sejuk, 31100 Sungai Siput(U), Perak Darul Ridzuan
Type of Business	: Sole Ownership
Phone No.	: 019-4700875/019-4880875
Email	: ifukontraktor@gmail.com

1.4 COMPANY BACKGROUND

IFU ENTERPRISE business was established in 2003 and carries out the work of building construction, roads, drainage, bridge drainage, cleaning services, building cleaning, forest areas, agricultural and land works, transportation booking representatives, supplying raw food, dry, Islam's cooking, supply of sports and school clothes, motor equipment, canopy rental, Tarpaulin and Canvas Materials, supply of sand and red earth, supply of office equipment, stationery, laundry and catering. This business has been registered with the Contractor Service Centre as a Class F contractor since 1st July 2004. Also registered with the Construction Industry Development Board CIDB Grade G1 and also with the Ministry of Finance Malaysia.

Figure 1-1 Location plan of IFU Enterprise

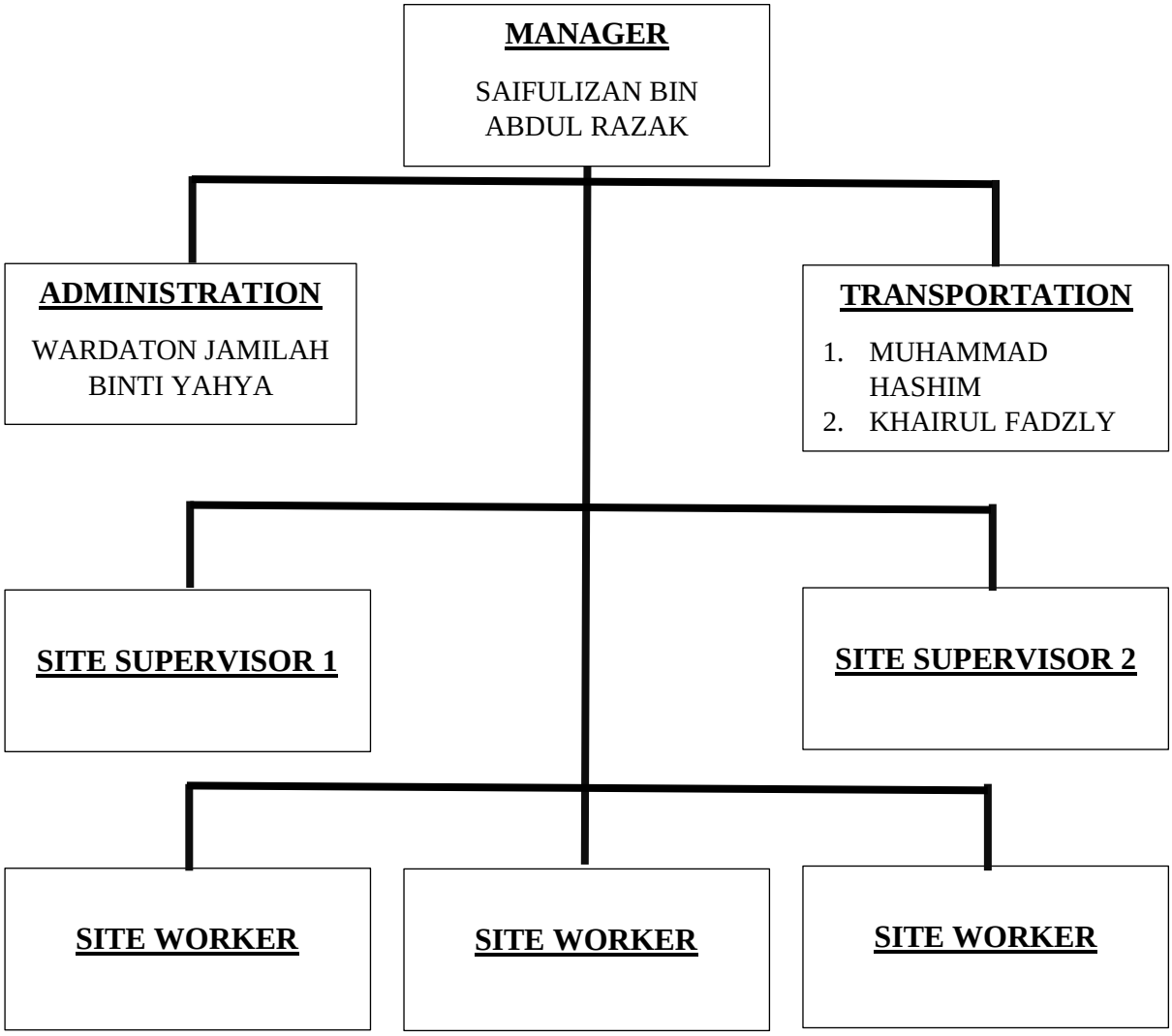
Starting small with a modest start-up capital, IFU ENTERPRISE's business has now begun to gain the trust of project owners such as Kuala Kangsar District Office, Public Works Department, Perak Islamic Religious Council, Kuala Kangsar Municipal Council, Fecra Berhad, Sungai Siput Hospital, Sungai Siput Community College, Perak Darul Ridzuan University College and District Education Office.

1.5 COMPANY VISION

Vision

To be among the contractors capable of providing the best quality of service, the IFU ENTERPRISE business is determined to perform the work entrusted to it with transparency and trust.

1.6 ORGANIZATION CHART



Mr. Saifulizan Bin Abdul Razak is the owner of IFU ENTERPRISE which is that has been established in 2003. IFU ENTERPRISE has four people in charge for company management that consist of administrator, transportation and two site supervisors. Every position has their own responsible and scope of work.

The scope of work for administrator which is Ms Wardaton Jamilah Binti Yahya is make claim and paper work for every site has been completed. This also, responsible on company cashflow to pay supplier and other site requirement.

For transportation department, Mr. Muhammad Hashim and Mr. Khairul Fadzly is responsible on make sure all the lorry which is six and ten tyres are in good condition also make sure the road tax and permit is comply. The responsible also, need to arrange schedule of lorry for every order has been received.

Site Supervisor for IFU ENTERPRISE need to focusing on every site also need to make bill of quantities for new project tender. The site supervisor, need to make sure site construction are comply with all the drawing beside need to prepare sources for site during the construction works. The site worker is work under site supervisor and need to follow the schedule that has been made.

1.7 SCOPE OF WORK

Practical training appeared to be the best medium to identify students' strength and overcome their weaknesses for the working environment in the future, as for the trainee, 22 weeks of practical training has indeed, excellently enhanced his soft and functional skills.

This trainee believed his strength in working independently during the study period has helped him in a great amount during practical training. Supervision and guidance also has helped him in a great amount during practical training.

The trainee has discovered that general knowledge other than planning should be sought as it seems quite important in understanding the job scope and discussion. It appears to be one of the trainee's weaknesses that need further enhancement before stepping in into the career life.

1.8 CONCLUSION

The internship program was started 9 September 2021 until 30 January 2022 and the total duration is 22 weeks. The internship program has been supervised by Sr Dr Mohamad Haszirul Bin Mohd Hashim. The project management is importance specially to make project operate as specified in the contract and it is also can make the project management cost low same has been set up.

IFU enterprise was establish in 2 January 2003 and located at Kampung Sungai Sejuk 31100 Sungai Siput (U) Perak. The type of company was sole owner. The IFU enterprise do not have many workers in management. IFU enterprise also hold the contractor licence G 1 which is project below RM 200,000.00 for the project.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION TO PROJECT MANAGEMENT

The management of construction project has been carried out since people first cooperated to erect building.[1] From conception to completion, construction project management entails coordinating and arranging each phase of the project life cycle. It's a comprehensive approach aimed at completing projects on schedule and on budget. Construction project management is a complicated profession that entails dealing with a variety of issues, including cost control, scheduling, procurement, and risk assessment. From architects to owners to contractors, project managers deal with everyone involved in a building project.

The mission-oriented character of a project distinguishes project management from corporate general management in general. The effective of project management are required a considerable background of general knowledge about management of a project.[2] When the mission is completed, a project organisation is usually discontinued. Project management, according to the Project Management Institute, is "the art of directing and coordinating human and material resources throughout the life of a project using modern management techniques to achieve predetermined objectives of scope, cost, time, quality, and participation satisfaction. General management in commercial and industrial enterprises, on the other hand, adopts a broader perspective and ensures more operational continuity. Nonetheless, there are enough similarities and contrasts between the two to allow for the adaptation of current management approaches established for general management to project management.

The responsible for project management is the team members from financial planner, contractors, engineer also the project manager.[3] The project manager must be filled by contractor who control the project this is to make sure the project achieve goal. This is because, the goal of project manager is to ensure the entire construction process goes smoothly and follow the plan. It responsible in maintain with the budget that has been set up also follow the schedule.

There are five stage to achieve project management goal: -

1. Planning and development

2. Design

3. Preconstruction

4. Procurement

5. Construction

2.2 PROJECT PLANNING, MONITORING & CONTROLLING

Project planning, monitoring and control are the process for analysing project data to make sure it is follow the schedule and budget.[4] The function is included initiating, planning, monitoring, communicating and closing out project cost and schedule. The project controller which is project manager should be reporting the specific of project progress time to time. This is to make sure the project running well and can identify the problem also easy to make precaution and solution.

The main purpose of monitoring and controlling the project also to be proactive in finding the issues during construction and taking corrective action.[5] The corrective action that made must can make the project run as has been schedule. The corrective action also must be avoiding the same issues repeated during the project run.

The monitoring and control process that can be taken for project management is:-

1. Monitoring and controlling project work

    In this part, it must determine the process is tally with the schedule and identify if has any problem. In this part, it is included of recommended corrective action, recommend preventive action, forecast and also to request change.

    2. Integrated change control

    The project integrated change control ensures that changes as a result project corrective and other controlling factors are managed across the project knowledge areas.

    3. Scope verification

    The scope verification process ensures that project was deliverables accepted and requested change and also recommended corrective actions.

    4. Scope control

    The scope control is to make sure weather the change happen and it still follow the scope of project.

    5. Schedule control

    The schedule control is to make sure the project follows the schedule that has been set up also if have any changed it must been update time to time also must be update the schedule data and baseline and also must request changes.

6. Cost control

The cost control process is to monitor if the changes give impact on cost or project budget. It will be updated on cost baseline update and project management plan.

7. Performing quality control

The quality control performance process is to measure the specific project result and to determine whether the project is meet the quality standard that has been set up during project preliminary. The project management must be alerts on quality control measurement, validated defect repair, updates to the quality baseline, request changes and recommend defect repair with proper way.

8. Managing project team

The process tracks of team member performance and provide feedback to resolve all the issues during construction stage is very importance it is to avoid delay.

9. Performance reporting

All the process, budget and data must be report this is to make the project easy to track and also can know the real budget.

10. Managing stakeholders

Every stage and problem of project must be report to stakeholder this to make sure stakeholder alert and understand every change that has been make during construction project and also to get approved.

The project control, planning and monitor are importance to control and collect the data and also make analysing every process during the construction stage to make sure any work delay and the project is following the budget that has been set up. The project management should play their role responsible in monitor the project and take action to make sure the project running smooth.

2.3 STANDARD AND GUIDELINE

Poor quality in construction projects is a common phenomenon in the world.[6] Project management is the key of successful for project construction. Without proper project management it can make project do not achieve the project standard also timeline that has been set up during preliminary stage. To make sure project management can be manage well it need experience project manager that can control pressure and also creative to solve the problem.

The important role of site manager must good in communicate with worker and also sub-contractor. This is because, site manager will make sure the worker follows the quality standard and sub-contractor must follow time that has been set up. Quality is one of the important key performance indicators of a construction project which may cause cost overrun and time delays.[7]

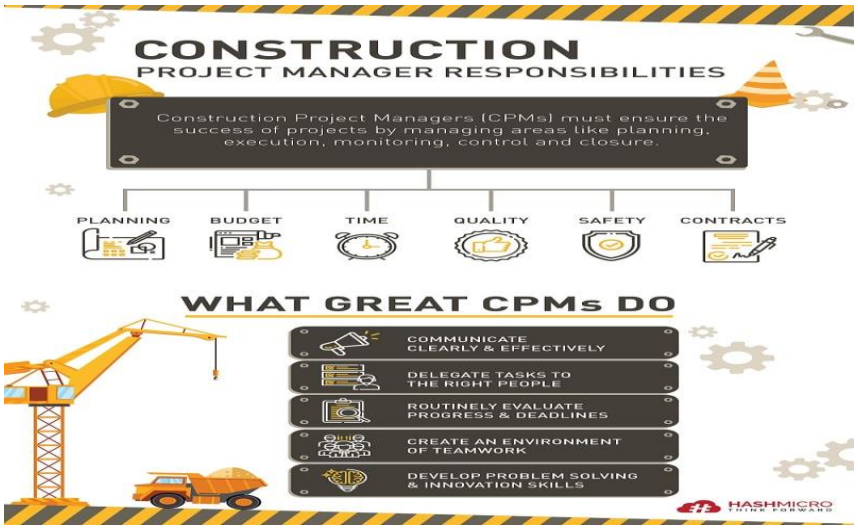


Figure 2-1 Project manager role responsible

This all of the main of project manager responsible starting from planning until contract hanging over to customer. The project manager should in all stage to make sure project manager easy to plan and know how to run the project.[8] Every stage of construction is important for project manager to make sure quality, cost and follow the schedule timeline.

There are five criteria in construction works: -

1. Environmental protection

2. Safety

3. Speed

4. Economy

5. Aesthetic

This all of criteria is need to take serious for every construction project even in town or village. This all aspect needs to detail for every aspect such as environmental protection. Nowadays, people neglecting the environment for the sake of development also for their life. This can bring negative impact to our environment especially for our forest, animal because it can eliminate natural habitat.[9]

In aspect of safety, it is important thing to make sure worker or people around the site is safe from any danger or hazard.[10] For example, site construction near the main road it must to make sure the safety people who use the road guaranteed from any hazard. The site management should put the signage for people can slow down their vehicle and give more attention during use the road. This can avoid any incidence happen and also can avoid site delay.

CHAPTER 3: CASE STUDY

3.1 INTRODUCTION TO PROJECT

I started my internship program in 9 September 2021 and I was held accountable to Surau Muhibbah construction project. In my fist day internship, the site has been clear and done make setting out was ready to proceed with piling work. The site was start late because of Pandemic covid-19 and this project to be done before 16 Dismember 2021.

The project was be run almost 3 months to fully completed. From the bill of quantities amount of this project is Rm 437,956.00. The challenges that need to face to complete this project are need to make sure all work follow time schedule beside comply with quality standard that has been set up.

The challenge from design aspect is this project use concrete rain gutter. During the construction the safety of worker and visitor are highly emphasized. This is because, adjacent of the building have another building that people still use for prayer and this make many visitors for this construction site.

3.2 BACKGROUND OF PROJECT

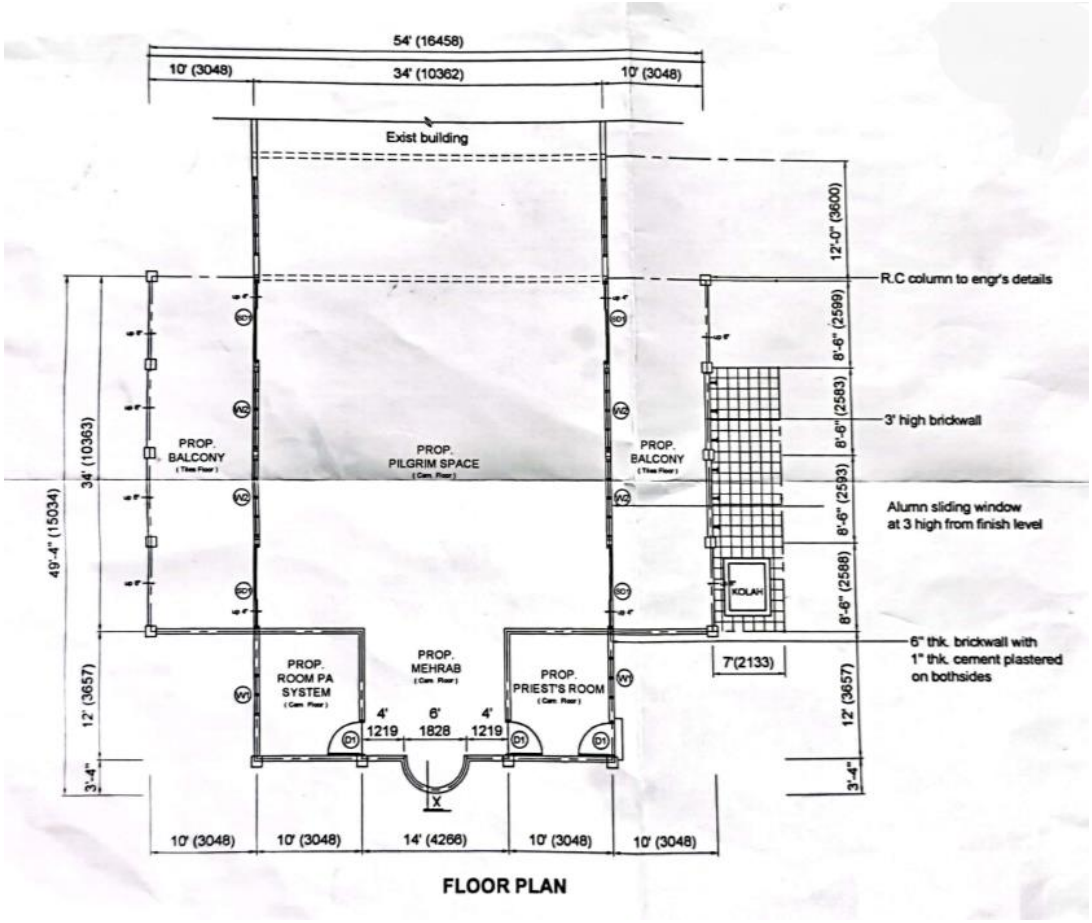
Figure 3-1Surau Muhibbah Building

Name of project	Membina Surau Al-Islamiyyah Kampung Muhibbah, Sg Siput (U)
Storey no.	Single Storey
Area of building	3626 sqf
Cost	Rm 437,956.00
Project owner	Pejabat Daerah dan Tanah Sungai Siput.
Contractor	IFU ENTERPRISE
Start date	9 September 2021
Finish	14 December 2021

The name of the project is Building Surau Al-Islamiyyah Kampung Muhibbah Sungai Siput (U) Perak. This building was single storey and the area of the building is 3626 Sqf. The total cost for this building is Rm 437,956.00. The cost of project is included fence, permit and cut off three coconut trees.

Owner of this project is Pejabat Daerah dan Tanah Sungai Siput and technician who held accountable for this project is Mr. Safwan. The main contractor for this project is IFU ENTERPRISE. During first stage of this construction the problem has been faced is Pandemic Covid-19. This is because, this project should be started in June 2021.

This project starts after end of control movement order by the government which is in 9 September 2021 and finish on 14 December 2021. The challenges for this project are need to be complete before 16 December 2021 which is Around 3 months. Finally, this project succeed finish on the project timeline that has been set up.



FLOOR PLAN

3.3 WORK PROGRESS

3.3.1 Piling Work

During The construction stage, all the work procedure, quality and timeline has been emphasized. This is because The project needs to complete in short time. The project manager should make sure the project run follows the quality standard and complete before date the date.

Figure 3-2 Piling work

The project was started 9 September 2021, the piling point was 42 points and the size of piling pile is 5x5 and the total of used was 144 piles. The deepest point for this site was using 5 piles and it was for 4 points. Most of pilings point are using 3 piles and 2 piles for one points.

Type of soil is sandy, because from the historical this place was be mines. The duration of piling works was 9 days. The duration takes too long because of the weather too hot and piling work cannot work directly until the evening.

3.3.2 Excavation Of Pile Cap

Figure 3-3 Excavation of pile cap

The excavation for pile cap was be run on 20 September 2021 this is for 38 point which is have two different size of pile cap. Most of pile cap are using 450mm x 450mm x 550mm. To excavate the pile cap, backhoe was be using this is because the factor of soil and also size of pile cap.

The size of steel for this pile are using 12 mm this is follow the standard that has been set up. During the pile cap excavation and concrete the most challenge are when rain weather, this is because water trap inside the hole. Before concrete some pile cap point need to use water pump to bring out the water.

Concrete grade 30 are been use for pile cap concrete. The concrete was been supply from Hyper concrete Kuala Kangsar Perak. The total of concrete has been use is 14 meters. The pile cap was concrete for two days. This is because the numbers of formwork is not enough and this also the way to saving cost.

3.3.3 Beam Work

Figure 3-4 Beam construction

For beam construction it was used 18 inches formwork size this also to follow standard that has been set up during design stage. Beam work was started on 25 September 2021 this after finish concrete for pile cap. Beam is the structure of building that transfer load from column into pile cap. The beam construction should be making improper way, this also to avoid structure failure and sloping wall.

Figure 3-5 Beam marking

To avoid any failure, happen such as wall tilted its needs to make some marking at pile cap before make beam work. This is very importance beside the beam work more accurate after finish install. Some of the worker for other site was neglect to make this process, the result is beam cannot be totally straight.

Total concrete for Surau Kg Muhibbah is 9 meters and it also use crane for easier and to make sure concrete work follow the guideline that has been set up. During concrete work, vibrate also has been used this is to avoid honeycomb.

3.3.4 Column

Figure 3-6 Column

Column is structure element that transfer load from above structural element to above structural. The steel bar using for column is very importance to make sure the column can carry the load. For Surau Kg Muhibbah, the steel was using 12 mm that follow design stage.

The height of column is 10 foot and the size was 3-inch x 7 inch. From the picture above, the worker is using thread that having load above it. This process to make sure columns straight. Some of worker is using water level to make this process. From the experience that I get from internship program, by using thread and load is more accurate and easier.

The distance between link for column steel also follow the standard that has been set up which is 225mm. This to make sure the steel bar cannot be open during concrete work. The concrete grade use for column is grade 25.

3.3.5 Concrete Floor

Figure 3-7 Concrete floor

The thickness of floor is followed size of beam which is 18 inches. Before concrete work, the floor has been filled by small river stones for first layer than the upper put crush run before compacting work started. The total thickness left for concrete is 7 to 6 inch this is because for put polythene sheet brc.

Figure 3-8 Polythene sheet and brc

Polythene sheet and brc a7 has been used for this site. The polythene sheet is to avoid brc steel exposed directly to soil. The concrete work has been done on 6 October 2021. 33 meters grade 25 has been used for floor concrete.

3.3.6 Roof Beam

Figure 3-9 Roof beam

Roof beam is the load-bearing element for roof it is to provides support for roof above and transfer load to above structure element which is column. For Surau Muhibbah site, it uses 18 inches size of formwork, it also makes roof beam before brick work. This follow the standard JKR that has been set up for this construction during design stage.

To construct roof beam before brick works it must make sure numbers of “wooden stick” is enough because it is very importance to avoid beam failure during concrete work and also to avoid any incident happen.

Size of steel has been used for beam work is 15.5 mm and total concrete 9 meters. For beam work it has been used crane this to make work easier and faster. Concrete work has made on 18 October 2021.

Figure 3-10 Roof gutter

The most challenge for Surau Muhibbah design is equipped with roof gutter. This is because it needs meticulous work especially during make supporting work by using staging this is because it can make work failure and also safety of worker. The concrete gutter works more difficult from roof beam because size is bigger also it heavier.

3.3.7 Brick Work

Figure 3-11 Brick works

Wall is the element to divided space in the building and also give protection to building occupant from outside thread. There are two type of wall which is load bearing wall and non-load bearing wall. For this site, it is use none load bearing wall it also can be look from the picture size of wall from above and below is same. Clay brick has been used for this building which is 9cm x 9xm x 19cm.

The brick works was carried out for five days the total clay brick has been use is 11 pallets of bricks. Five days not included with plaster works. For plaster works, clay brick needs more detail and additional way from sand brick. This is because, clay brick absorbs more water and plaster must be at least three layers for surface flat and avoid defect.

Figure 3-12 Curve Brick work

The most critical part for brick work is at front of the building which is curve section. Worker need to take long time for make the brick work. This is because to make sure brick follow the right row this can affect the plaster work if brick work not properly. During brick work are curve section, worker need to use many threads and the result is attractive.

3.4 ANALYSIS OF WORK

PROJECT NAME		PROJECT DURATION	PROJECT START DATE	PROJECT END DATE
Membina Surau Al-Islamiyyah Kampung Muhibbah		25-Mar	9-Sep	3/12/2021

Task ID	Task Description		Task DurationStart Date	Start Date	End Date
1	PILING WORKS	PLANNED	9	9/9/2021	18/9/2021
		ACTUAL	9	9/9/2021	18/9/2021
2	PILE CAP	PLANNED	5	18/9/2021	23/9/2021
		ACTUAL	5	18/9/2021	23/9/2021
3	GROUND BEAM	PLANNED	6	23/9/2021	29/9/2021
		ACTUAL	6	23/9/2021	29/9/2021
4	GROUND SLAB	PLANNED	3	29/9/2021	2/10/2021
		ACTUAL	3	29/9/2021	2/10/2021
5	COLUMN	PLANNED	5	2/10/2021	7/10/2021
		ACTUAL	5	2/10/2021	7/10/2021
6	ROOF BEAM	PLANNED	8	7/10/2021	15/10/2021
		ACTUAL	8	7/10/2021	15/10/2021
7	CONCRETE GUTTER	PLANNED	8	15/10/2021	23/10/2021
		ACTUAL	13	15/10/2021	28/10/2021
8	ROOF	PLANNED	10	23/10/2021	2/11/2021
		ACTUAL	20	28/10/2021	17/11/2021
9	BRICK WORK	PLANNED	4	2/11/2021	6/11/2021
		ACTUAL	8	17/11/2021	25/11/2021
10	PLASTERING	PLANNED	8	6/11/2021	14/11/2021
		ACTUAL	8	25/11/2021	3/12/2021

In this project, I was given responsibility to be project supervisor for this project. The job of scope is to make sure the project construct with the budget and timeline that has been set up. This is very importance thing for every project construction.

From the project, the basic planning is very importance specially to comply with work timeline. The good management also can make the quality project can be guaranteed also the cost management also can become low. The lack of management can make project delay from the timeline set up.

From the chart above, we can see the work start postponed after the roof work delay. This is because, sub-contractor worker takes easy during work. The roof work should be 10 days work and it make 20 days. This make work after it postpone. In this situation, the project engineer should play the role and responsible also negotiation skill properly to deal with the problem.

Finally, the project can be complete before the timeline has been set up. This make the project was successfully has been manage. The management is very importance in control all the sub-contractor to follow the project timeline.

CHAPTER 4: PROBLEM AND RECOMMENDATION

4.0 PROBLEM AND RECOMMENDATION

Every site has different and unique problem for every stage of construction. This make project manager need creative to deal with the problem. The problem may come from design, budget or timeline that has been set up. For Masjid Muhibbah the critical problem is deal with timeline that has been set up. This is because, the project was started late from the dateline due to pandemic covid-19. Finally, the project complete at time that has been set up.

4.1 SUB-CONTRACTOR NOT FOLLOW TIMELINE

Dealing with defaulting subcontractor is a nightmare for every project manager. Some of subcontractor negligent and disobedient with timeline that has been set up by the contractor. This can lead delay and can project timeline fail to achieve. Some of subcontractor make deal with main contractor without any agreement and the end subcontractor late because have another project need to finish fist.

Figure 4-1 Roof structure

For project Surau Muhibbah, the problem of subcontractor happened during roof structure work. This is because, the subcontractor worker not disciplined and take it easy during work and lastly, the subcontractor need change another worker to make it. Follow the schedule timeline, roof structure work should be complete during 6 days which is 1 week work but the roof structure finish after 13 days which is 2 weeks.

The effect of this delay work, plastering work is ongoing during roof structure work and this make plastering work more challenge due to hot weather and need be more alert during make work.

4.2 COMPLY WITH DRAWING

Drawing is part of the information that is incorporated into tender document and contract documents for construction works. The main purpose of construction drawing is to provide representation of the building. The drawing must be avoiding any confusion to the contractor and al the detail, material and standard must be included in drawing.

The complete of drawing must be comply with floor plan, elevation, section and detail drawing. For Surau Muhibbah construction the drawing has confusion and some of the design and material need to change. This is to make sure the building design look more interesting, comply with customer need and also can retain the function for long time.

Figure 4-2 Roof Gutter Steel

The picture above showed concrete gutter steel that has been change from brc a6 to 10mm diameter steel. This is because, by using steel 10mm diameter is easier compare to brc. This because, to bent brc need to take long time compare to steel that can bent one by one. The steel 10 mm diameter also can make concrete gutter have more bonding with roof beam.

Figure 4-3 Roof Design

From the picture above, the circle is showing the roof design that should be “nasi lemak” at this section but it needs to change. This is because, the roof gutter is not covered at the section. This problem because, the contractor is not involved during design stage because customer pay third party to make design. The contractor does not have any choice and change the roof design because take precaution to avoid seeping through in the future. Before make change at the roof design, project manager play the role to get permission.

Figure 4-4 Ablution Space

Based on construction drawing, ablution area should be at another place and project manager propose to change ablution area at other space for more proper and for occupant comfort. The ablution area that has been propose is more comfortable because do not disturb other

function building and also easy to occupant to use it especially during afternoon it have awning can protect occupant from direct sunlight.

4.3 MACHINERY PROBLEM

Some of the problem are happen after machinery such as piling crane, crane, concrete lorry, backhoe or other machinery are problem. The problem maybe come from broken or the machinery cannot use for this site. For example, concrete need to extend to another day because do not have lorry are free on that day. This make the timeline works was postponed.

The machinery such as backhoe can make site postponed for example, backhoe cannot come to site after piling works done this make site progress may be delay for two or three days. Every machinery on site need to be prepare properly this to avoid delay happen occur.

CHPATER 5: CONCLUSION

5.0 CONCLUSION

In conclusion, the internship program at IFU Enterprise has given the trainee a lot of knowledge and experience. It had been a great and informative learning process for the trainee,

Generally, the whole process has helped the trainee to widen his view on real life planning firm and improve the knowledge on town planning in Malaysia while sharpening his technical skills. Besides, task that were given has helped the trainee to have more matured thought process in doing the task and to be more creative and critical.

Finally, it can be firmly said that the whole journey of internship has given positive impact and has helped the trainee to equip himself with skills and knowledge which are vital in this field of work.

6.0 REFERENCE

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APPENDICES

RINGKASAN SEBUTHARGA (PELARASAN)

No. Sebutharga: PLB.SS 3 / 2021
Tajuk Kerja : MEMBINA SURAU AL-ISLAMIYYAH KAMPUNG MUHIBBAH, SG. SIPUT (U)

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA
A.	**KERJA-KERJA AWAL.**				
1.1	**Menyediakan polisi-polisi Insurans Pampasan Pekerja atau PERKESO, dan Insuran Tanggungan Awam serta lain-lain kerja berkaitan.**	**H.P**			**RM 590.24**
1.2	Menyediakan 3 set laporan bergambar untuk kerja-kerja sebelum, semasa dan siap projek dalam bentuk cetakan berwarna (hard copy)	H.P			RM 300.00
1.3	Kerja meroboh binaan sedia ada termasuk kerja mengangkut keluar sampah dan buang ke tempat yang disediakan oleh kontraktor 3 set.	H.P			RM 4,800.00
1.4	Mengemas, memperbaiki kerosakan dan membersih tapak apabila siap kerja.	H.P			RM 3,200.00
1.5	Melantik Jurutera Perunding yang bertauliah untuk kerja-kerja di bawah. -Menyediakan plan lengkap bangunan termasuk As Built Drawing -Menyelia / mengawal pekerja di tapak bina sehingga projek siap	H.P			RM 15,000.00
B.	**KERJA-KERJA UJIAN.** Membekal segala perburuhan, mesin, jentera, bahan dan lain-lain lagi bagi kerja-kerja berikut mengikut penentuan kerja dan lukisan ditentukan oleh Pegawai Penguasa di tapak bina.				
2.1	Ujian Tanah. Menjalankan ujian tanah 'Mackintosh probe' sebanyak 6 bilangan dan ujian swa mengikut penentuan Pegawai Penguasa.	H.P			RM 800.00
2.2	Ujian Kiub. Menjalankan ujian kiub konkrit pada umur konkrit 7, 14 dan 28 hari dengan gred 30N/sq.mm dan mengikut penentuan Pegawai Penguasa.	H.P			RM 500.00
JUMLAH DIBAWA KEHADAPAN					**RM 25,190.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**25,190.24**
C.	**KERJA CERUCUK.** Membekal segala perburuhan, mesin, jentera, bahan dan lain-lain lagi bagi kerja-kerja cerucuk mengikut penentuan kerja dan lukisan ditentukan oleh Jurutera Awam di tapak bina.					
3.1	Kerja-kerja persiapan tapak dengan korekan tanah asal 150mm tebal dan buang ke tempat yang disediakan oleh kontraktor.	H.P.			RM	1,000.00
3.2	Kerja-kerja memancang tanda (setting out) untuk bangunan dan sebagainya.	H.P.			RM	2,000.00
3.3	Kerja penanaman cerucuk 150mm x 150mm dari konkrit bertetulang dengan kedalaman 18m. (Piling Layout) Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05.	H.P.			RM	15,500.00
D.	**KERJA STRUKTUR / BUMBUNG.**					
4.1	Membina dan menyiapkan tetopi cerucuk termasuk kerja korekan, acuan, tetulang, konkrit menanam semula setelah kerja siap.(Pilecap)					
	P1 750mm x 750mm.	Nos	30	300	RM	9,000.00
	P2 1200mm x 600mm.	Nos	4	325	RM	1,300.00
	Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05.					
4.2	Membina dan menyiapkan 'stump' untuk tiang termasuk kerja acuan, tetulang, dan konkrit.(Column Schedule) Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05.	H.P.			RM	1,200.00
4.3	Membina dan menyiapkan rasuk tanah termasuk kerja korekan, acuan, tetulang, dan konkrit. (Floor Key Pelan, Ground Beam Details & Ground Details) Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05.	H.P.			RM	39,000.00
	JUMLAH DI BAWA KE HADAPAN				**RM**	**94,190.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR
	JUMLAH DIBAWA DARI BELAKANG				**RM 94,190.24**
	Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/02/05. JPW/2106/SURAU_MUHIBBAH/SR/03/05.				
4.4	Membina dan menyiapkan lantai konkrit 150mm tebal, lapisan kalis air dan apron termasuk kerja acuan, tetulang, dan konkrit. (Floor Key Pelan & Typical detail of ground Floor And Apron Slab). Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05. JPW/2106/SURAU_MUHIBBAH/SR/03/05.	H.P.			RM 10,000.00
4.5	Membina dan menyiapkan tiang konkrit termasuk kerja acuan, tetulang, dan konkrit. (Roofbeam Details & Upper Roof Beam Datails). Rujukan Lukisan JPW/2106/SURAU_MUHIBBAH/SR/01/05.	H.P.			RM 10,000.00
4.6	Membina dan menyiapkan rasuk bumbung dan talang air hujan konkrit termasuk kerja acuan, tetulang, konkrit dan tupang. (Floor Key Pelan, Ground Beam Details & Ground Details) JPW/2106/SURAU_MUHIBBAH/SR/04/05. JPW/2106/SURAU_MUHIBBAH/SR/05/05.	H.P.			RM 42,000.00
4.7	Membina dan menyiapkan kerangka bumbung dari aluminium termasuk kerja pemasangan mengikut butiran pengilang berukuran di antara 16,200mm x 14,800mm.	H.P.			RM 25,000.00
4.8	Bekal dan pasang bumbung dari metal deck gred 28 termasuk kerja pemasangan kelengkapan mengikut perincian pengilang berukuran di antara 16,200mm x 14,800mm. Rujukan Lukisan. JPW/2021SURAU_MUHIBBAH/SS/08/03/1.	H.P.			RM 18,000.00
	JUMLAH DI BAWA KE HADAPAN				**RM 199,190.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**199,190.24**
E.	**KERJA ARKITEK.** Sila Rujuk Perincian Arkitek yang di sediakan.					
5.1	**Membina dan menyiapkan lantai konkrit 150mm tebal, lapisan kalis air dan apron termasuk kerja acuan, tetulang, dan konkrit.**	**H.P.**			**RM**	**5,935.77**
5.2	**Menyediakan dan memasang awning bagi keluasan tidak melebihi 5 meter persegi termasuk 25mm tebal bingkai / rangka besi (framing)**	**M2**	**1.87**	**141.3**	**RM**	**264.23**
5.3	**Kerja-kerja memecah dinding sedia ada termasuk membawa bahan buangan keluar dari tapak bina**	**H.P.**			**RM**	**1,500.00**
5.4	Bekal dan pasang paip turun talang air hujan dari uPVC berdiameter 75mm.	H.P.			RM	2,000.00
5.5	Bekal dan pasang ikatan bata 113mm tebal dan tetulang exmet di setiap 4 lapisan batu bata.	H.P.			RM	15,000.00
5.6	Bekal dan melepa skrid simen pasir 1:3 pada ikatan bata, tiang konkrit dan bahagian rasuk yang terdedah.	H.P.			RM	19,200.00
5.7	Bekal dan pasang longkang 230mm diameter untuk sekeliling bangunan dan bersambung dengan longkang sediada.	H.P.			RM	9,000.00
5.8	Bekal dan pasang konkrit berongga dengan corak keislaman.	H.P.			RM	3,000.00
5.9	**Bekal dan pasang 'Aluminium ventilation Board '**	**H.P.**			**RM**	**3,000.00**
5.10	Bekal dan pasang pintu dan tingkap aluminium termasuk kerangka dan 'tinted glass'.	H.P.			RM	15,000.00
	JUMLAH DI BAWA KE HADAPAN				**RM**	**273,090.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**273,090.24**
5.11	Bekal dan pasang karpet termasuk satu lapisan 'under lay' untuk lantai mengikut arahan Pegawai Penguasa. Spesifikasi Karpet dan Underlay : PU Form, Fiber Carpet Underlay Karpet : Total Height : 10-12mm	H.P.			RM	24,000.00
F.	**KERJA LUAR.**					
6.1	Bekal dan pasang pagar kawasan jenis 'anti climb' dan rasuk dari konkrit setinggi 300mm termasuk kerja konkrit tiang mengikut arahan Pegawai Penguasa.	M^2	198.30	100.00	RM	19,830.00
6.2	Bekal dan pasang pintu pagar hadapan jenis 'sliding' termasuk semua kelengkapan mengikut arahan Pegawai Penguasa.	Bil.	2	3180	RM	6,360.00
6.3	Bekal dan pasang pintu pagar berukuran 3ft x 6ft termasuk pemasangan kelengkapan seperti selak dan yang terlibat mengikut butiran pembuat.	Bil.	1	300	RM	300.00
6.4	150mm tebal lapisan 'crusher run' untuk dasar jalan dan mampatkan dengan mesin penggelek 6 tan.	M^2	600.00	13.00	RM	7,800.00
6.5	40mm tebal lapisan pengikat (Binder course) termasuk lapisan asas berbitumen bergred penebusan 80/100 (prime coat) di sembur pada kadar 2 liter/meter persegi dan lapisan atas di sembur pada kadar 1.4 liter/meter persegi dan mampatkan dengan mesin penggelek 6 tan.	M^2	600.00	26.00	RM	15,600.00
6.6	Membina dan menyiapkan tanda nama surau mengikut arahan Pegawai Penguasa.	H.P.			RM	3,000.00
	JUMLAH DI BAWA KE HADAPAN				**RM**	**349,980.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**349,980.24**
6.7	Kerja mengecat bangunan sedia ada dan baru dengan menggunakan 1 lapisan sealer dan 2 lapisan cat kalis cuaca (bahagian luar), 2 lapisan cat emulsi (bahaian dalam) dan cat 'hi-gloss' untuk permukaan logam dan kayu.	H.P.			RM	8,900.00
6.8	Kerja membina dan menyiapkan tempat wuduk termasuk kerja penyambungan paip dari bangunan sedia ada dan enam kepala paip serta kerja menjubin juga membina 'awning' mengikut seperti rujukan lukisan.	H.P.			RM	7,000.00
6.9	Kerja meroboh bahagian bangunan sedia ada dan membina ruang sambungan ke surau baru berukururan 10,200mm x 3,657mm mengikut rujukan lukisan JPW/ 2021SURAU_MUHIBBAH/SS/08/03/1A.	H.P.			RM	6,500.00
6.10	Kerja-kerja membina parkir (parking) berbumbung (Metal Deck) yang berukuran 57' x 16' serta kerja-kerja yang berkaitan dengan mengikut arahan Pegawai Penguasa	FT2	912	15.50	RM	14,136.00
6.11	Kerja-kerja memotong pokok yang tidak melebihi 600mm ukur lilit (Pokok Kelapa)	Nos	3	200.00	RM	600.00
G.	**<u>KERJA ELEKTRIK.</u>** Bekalan dari bangunan sedia ada ke surau baru.					
7.1	*Papan Agihan Utama.* *Membekal dan memasang semua bahan mengikut spesifikasi standard SIRIM.*					
	Peti agihan unit pengguna bertebat penuh, kutub tebal & neultral l/d pemutus litar kecil MCB berkadaran sehingga 32A dengan beban pemutus 6aK, 63A pemutus litar arus baki dengan kepekaan arus 100mA dan 30mA.(24 hala)	H.P.			RM	2,000.00
	JUMLAH DI BAWA KE HADAPAN				**RM**	**389,116.24**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**389,116.24**
7.2	*Pemutus litar kecil (MCB).* Pemutus litar kecil kutub tunggal berkadaran sehingga 32A (4 bila), 20A (8 bil) dan 10A (8 bil).	H.P.			RM	1,000.00
7.3	*Membekal dan memasang semua bahan mengikut spesifikasi standard SIRM secara pendawaian konduit permukaan dengan menggunakan kabel PVK l/d konduit PVC dan eksesori.* *Konduit 'Rigid and high impact' PVC (uPVC) mudah lentur. 20mm*	H.P.			RM	500.00
7.4	**Mata lampu (dengan suis yang bersesuaian) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan.(Lampu)**	**Nos**	**25**		**RM**	**3,749.96**
7.5	Mata soket alur keluar kuasa l/d suis soket keluar 13A, berkembar terlitup PVC menggunakan kabel 2 x 2.5mm persegi l/d kabel perlindungan.(Soket 13A,2 gang)	Nos	5	250.00	RM	1,250.00
7.6	Mata soket alur keluar kuasa l/d suis soket keluar 15A, tunggal terlitup PVC menggunakan kabel 2 x 2.5mm persegi l/d kabel perlindungan.(Air-cond)	Nos	4	250.00	RM	1,000.00
7.7	Mata kipas dinding (dengan suis yang bersesuaian) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan.(Kipas dinding))	Nos	11	250.00	RM	2,750.00
7.8	Untuk jarak tidak melebihi 15 meter dari papan agihan yang berkenaan dengan menggunakan kabel 2 x 10mm persegi l/d kabel perlindungan.(Kabel dari bangunan sedia ada ke bangunan baru)	H.P.			RM	980.00
	JUMLAH KESELURUHAN				**RM**	**400,346.20**

BIL.	PERKARA	UNIT	KUANTITI	KADAR	HARGA SEBENAR	
	JUMLAH DIBAWA DARI BELAKANG				**RM**	**400,346.20**
7.9	Pembumian padu untuk PSU menggunakan kabel 6mm x 1(16mm g.p. x 1.8m panjang) dengan menggunakan Elektrod yang di clip dan ruang pemeriksaan bumi jenis heavy duty l/d penutup konkrit boleh alih.	Bil.	1	1,800.00	RM	1,800.00
7.10	**Lampu dari jenis (Down Light)**	**Nos**	**30**	**33.66**	**RM**	**1,009.80**
7.11	**Kipas dinding 14inci.**	**Nos**	**11**	**250.00**	**RM**	**2,750.00**
7.12	Soket 13A.	Nos	10	20.00	RM	200.00
7.13	Mata untuk speaker (4 bil.) dan mata untuk pembesar suara (4 bil.) termasuk P.A sistem (1 set) mengikut seperti diarahkan oleh Pegawai Penguasa.	H.P.			RM	7,850.00
	PENGHAWA DINGIN (AIR COND)					
8.1	Kerja-kerja membekal dan memasang Penghawa Dingin dari jenis Daikin (Ceiling Suspended / Exposed) 4HP serta kerja-kerja yang berkaitan	Nos	4	5,500.00	RM	22,000.00
H.	**Bekalan Air.**					
9.1	Penyambungan paip bekalan air termasuk semua kelengkapan mengikut seperti diarahkan oleh Pegawai Penguasa	H.P.			RM	2,000.00
	JUMLAH KESELURUHAN				**RM**	**437,956.00**

Ringgit Malaysia : Empat Ratus Tiga Puluh Tujuh Ribu Sembilan Ratus Lima Puluh Enam Ringgit Sahaja

(Nota : Orang yang menandatangani di bawah ini mestilah pemilik sah syarikat seperti yang terdapat dalam Lesen Pusat Khidmat Kontrak (PKK)

Disediakan : Disemak : Tanda Tangan Kontraktor

RINGGIT Malaysia *:* _____

DAN SEN *:* _____

TEMPOH SIAP : _____

Nama Penuh *(Penama)*	**:**	_____	**Nama Penuh** *(Saksi)*	**:**	_____
No. K/P	**:**	_____	**No. K/P**	**:**	_____
Alamat	**:**	_____	**Alamat**	**:**	_____
		_____			_____
		_____			_____
No. Telefon	**:**	_____	**No. Telefon**	**:**	_____
Cap Syarikat	**:**		**Cap Syarikat**	**:**	
		_____			_____