



اَبُو سَيِّدِي تَيْكُو لَوِي مَبَارَا
UNIVERSITI
TEKNOLOGI
MARA

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

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(PERAK)**

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It is recommended that this Practical Training Report prepared

By

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entitled

DESIGN OF BUILDING USING AUTOCAD

accepted as a partial fulfillment of the requirements for obtaining a Diploma in Building.

Practical Training Reports

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UNIVERSITY TECHNOLOGY MARA
(PERAK)

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STUDENT'S DECLARATION

I hereby declare that the work of this Practical Training Report was the result of my own investigations, except where otherwise stated through the practical training that I went through for a period of 20 weeks started from 13rd May 2013 until 28th September 2013 at Arkitek Punca Cipta . It is also one of the requirements to pass the course, DBN307, and received as a partial fulfillment of the requirements for obtaining a Diploma in Building.

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Date : 28th September 2013

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Thank you.

ABSTRACT

This report explained about the how to design the building before the construction. The drawing of the building is important in the first stage of the construction the site. There are many type of the drawings that are used before and after construction. It is made based on five months experiences at the site. This report is divided into several chapters which includes the company's background and drawing project's background .From the observation ,it is clearly shows that the design of the drawing is not as easily as it seems. Before the construction ,the project manager or the contractor must know how to read the drawing or learn how to understand the drawing basic. This is basic experiences and knowledge for all contractor ,site manager and others. As the conclusion ,this report has provided sufficient information about the basic drawing for the construction.

| TITLE | PAGE NO |
|-----------------------|---------|
| Acknowledgement | i |
| Abstract | ii |
| Table of Content | iii |
| List of Tables | v |
| List of Figures | vi |
| List of Abbreviations | viii |

CHAPTER

| | | |
|-------------|---------------------|----|
| 1.1 | INTRODUCTION | 1 |
| 1.2 | RESEARCH OBJECTIVES | 3 |
| 1.3 | SCOPE OF RESEACRH | 4 |
| 1.4 | METHOD OF RESEARCH | 5 |
| CHAPTER 2.0 | COMPANY BACKGROUND | 6 |
| 2.1 | INTRODUCTION | 7 |
| 2.2 | COMPANY PROFILE | 14 |
| 2.3 | ORGANISATION CHART | 15 |
| 2.4 | LIST OF PROJECTS | |
| 2.4.1 | FINISHED PROJECTS | 18 |
| 2.4.2 | ON-GOING PROJECTS | 20 |

| | | | |
|--------------------|-----|--------------------------------------|----|
| CHAPTER | 3.0 | THE FIRST STAGE IN DESIGN OF BULDING | |
| | 3.1 | INTRODUCTION | 21 |
| | 3.2 | PROJECT BACKGROUND | 23 |
| | 3.3 | CASE STUDY | 49 |
| | 3.4 | PROBLEMS AND WAYS TO OVERCOME IT | |
| CHAPTER | 4.0 | SUMMARY AND RECOMMENDATION | 50 |
| LIST OF REFERENCES | | | 51 |

LIST OF TABLE

| | | |
|-----------|----------------------------|---------|
| Table 4.1 | Example AutoCAD Drawing | 52 – 60 |
| Table 4.2 | Example Sketch up/Render . | 60 - 74 |

LIST OF FIGURES

| | | |
|-------------------|--|--------|
| Figure 2.2 | The organization chart. | 15 |
| Photo 3.1 - 3.1.1 | Arkitek Punca Cipta | 24 |
| Photo 3.2 - 3.3 | First task (Bungalow house) | 25 |
| Photo 3.4 - 3.5 | Second task (Lot Land) | 26 |
| Photo 3.6 - 3.11 | Bungalow house | 27-28 |
| Photo 3.12 | Drawing sheets | 29 |
| Photo 3.13 – 3.17 | Semi D House | 29-30 |
| Photo 3.18 – 3.22 | Bungalow House | 21-33 |
| Photo 3.23 – 3.34 | UNISZA (Café) | 33- 27 |
| Photo 3.35 – 3.42 | Bungalow House (Design A & Design B) | 39-41 |
| Photo 3.43 – 3.47 | Photoshop Render | 42-47 |
| Photo 3.48 – 3.65 | Conservation of Masjid Sultan Aleaddin at Jugra. | 44-49 |

LIST OF ABBREVIATIONS

CIDB Construction Industry Development Board

PKK Pusat Khidmat Kontraktor

CHAPTER 1

INTRODUCTION

1.1 Introduction

Malaysia is one of the developed countries in South East Asia. There are a lot of the projects under construction and other projects will be constructed in the future. So it creates competition in the construction industry in this country. So I take the chance to seek more experience and knowledge in this industry in another way such as learn in how to understand to read drawing in the basic way. Besides, I get the experience from the drawing exercise that I get from the architect, most of the task that I get are to design or create the housing and shop house this can help me to realize my dream to be the housing developer in the future.

However, on the first day at **Arkitek Punca Cipta Firm** I was hoping to get a job in construction management but this area was fully staffed and Ar Nasharuddin Bin Hj Abdul Majid as a principal of the firm, assign me as the assistant to the draft man and the architect. I learn about the work the architect does, before the project design is submitted to the contractor or developer for the construction. Maybe the architect job is not too difficult compare to the contractor that takes much time, money and labors but they use lot of the ideas to design the building that the client likes and efficient in cost.

Many procedures and steps must be taken before the construction starts and many types of the drawings are involved and must be designed before submit this to Majlis Bandar Raya Kuala Terengganu (MBKT), Balai Bomba dan Penyelamat (BOMBA) ,Syarikat Air Bersatu Terengganu (SATU) and others.

After undergoing practical training in this firm I have learn a lot such as how to use the AutoCAD software and the other related software to the design that give me advantages in the future .Beside I find the problem today is that do most of the construction company and other firm just take the employees capable of using the AutoCAD software and good in the construction drawing.

1.2 Research Objectives

There are several objectives need to be done namely :

- i) To identify the software that involve in the design of the drawing.
- ii) To identify the type of the drawing before the construction
- iii) To analyze the problem that occur in today to the building student and other student that don't know how to use the AutoCAD software.
- iv) To identify the importance of the drawing in the constructions.

1.3 Scope of Research

The scope of this research is involving the first stage in the design of the drawing before the construction start such as design of the housing and shop house. The drawing design consists of :

- i) Site plan
- ii) Floor plan
- iii) Elevation plan
- iv) Section x-x
- v) Section y-y
- vi) Roof plan
- vii) Sanitary plumbing diagram
- viii) Piping plan
- ix) Electrical and ceiling plan

1.4 Method Of Research

Information about the drawing design is gained by using two methods. The first one is known as primary method and the other is secondary method.

For the primary method, information was obtained via interview sessions that were held by the researcher. The information was provided by the respondents who are professionals in their own fields and is considered reliable as they have years of working experiences. The researcher conducted interviews with several architect or staff to obtain information regarding the design before the construction. The flexibility of changing questions also helped in doing the research as different people had different views and experiences. Information also can be gained through observations. Observations are were during the researcher's time at the office and site besides directl recording from the first person view, which is the researcher itself.

For the secondary method, every knowledge and information taken through various sources, which include collection data from books, magazine, reports and Internet. It consists of various findings and research from different resources related to the topic.

CHAPTER 2

COMPANY BACKGROUND

2.1 Introduction

Assalamualaikum wb

We have now come to our sixteen year in practice. A decade that had us growing from a small home based office to a 40 person multi-disciplinary practice. The experience we gathered through the many projects completed over the period has prepared us to undertake new projects with confidence and maturity. For those whom we had served, we thank you for your years of support and we hope for the relationship to be continuing. For those new to us, allow us to thank you for giving us the opportunity to introduce ourselves to your organization. It is our sincere hope that this acquaintance may lead to an equally beneficial relationship between us. Our organization is an architectural practice established in 1995. From our base in Kuala Terengganu, and presently the project office in Kuala Lumpur, we had undertaken projects of varying magnitude and complexity in almost all states in Malaysia.

We are able to offer a multidisciplinary approach to development consultancy by multi-disciplinary staffing and strategic partnership with firms of other disciplines. The number of clients in the various sectors from private homeowners to corporations, multi-nationals to government, many of which our 'repeat client' perhaps best indicate our commitment to the service. We hold on to the principle that no job is too small and we try our best to do better. Our exposure to multi-national corporations, particularly in the petrochemical industry and industrial related development has exposed us to cross-border environment, and the stringent standards. This has helped us to mature into a dynamic organization, ready to provide service and to be your partner in development.

The corporate profile for the year 2011 with you now together with our website at (www.puncacipta.com.my) shall give you an insight to our history, works, clients, people and achievements. We are committed to serve you if given the chance, and the level of our service to our other client shall be the benchmark for which we hope to improve on.

Thank you.

Ar Nasharuddin bin Haji Abdul Majid. APAM, AIPDM

Prinsipal

Logo syarikat



2.2 Company profile

ARKITEK PUNCA CIPTA

Principal

Ar Nasharuddin bin Haji Abdul Majid

Diploma in Architecture UTM, Advance Diploma in Architecture UiTM

Corporate Member Pertubuhan Arkitek Malaysia (M 1135)

Corporate Member Lembaga Arkitek Malaysia (LAM A/N 56)

Corporate Member Lembaga Arkitek Malaysia – Pereka bentuk Dalaman (ID/N 9)

Corporate Member Institut Pereka bentuk Dalaman Malaysia (IPDM A/N.36)

Address

1340 Jalan Sultan Mahmud, Kuala Ibai,

20400 Kuala Terengganu, Terengganu Darul Iman

Tel : Faks :

E-Mail : apcipta@puncacipta.com.my Website : <http://www.puncacipta.com.my>

Registration

Lembaga Arkitek Malaysia

Registered 3rd April 1995

Kementerian Kewangan Malaysia

Registration No.: 465-00000451

Registered 9th March 1996

* (Validity: 30/05/2014)

Petroliam Nasional Berhad (Petronas)

Registration No. SC5 – Consultancy Services / 05 – Architectural

Registration No. SO1 – Office and Estate Service / 65 – Architectural Related Services

Registration No. RKT-P000009

Registered 16 April 2004 (Validity: 04/07/2014)

Putrajaya Holding Sdn. Bhd.

Registration No. A 0006

Registered 8th August 1997

Syarikat Perumahan Negara Berhad

Registration No. SPNB/1/2/SJ (A 182/26)

Registered 8th April 2003

Consultancy Architect

TH Properties Sdn Bhd

Registration No. THPARC-0006

Registered 15th June 2004

Staffing

| | |
|------------------------------|------|
| Principal | : 1 |
| Professional/Technical Staff | : 32 |
| Administration Staff | : 10 |
| Contract Staff | : 2 |
| Total | : 45 |

Banking detail

Bumiputera Commerce Bank Berhad, Kuala Terengganu.

Bank Islam Malaysia Berhad.

Public Bank Berhad.

Services

Jabatan Kastam dan Eksais Di Raja Terengganu. License No 11504

Brief history

Established in May 1995. Drawing on the principal's experience in an established architectural practice, the firm began its business with commissions from corporate establishment and finance companies. From its base in Kuala Terengganu, it provided services to individuals, Malaysian corporations and Government and throughout Malaysia.

Corporate background

Over the twelve years, we had undertaken architecture consultancy works of various magnitude and complexities. We list among our clients the various ministries under the Malaysian Government, State Government of Terengganu, Petronas, several universities and corporations. Small, up-coming companies, retail clients and individuals however remain an important part of our client-base. We were experienced with work with multi-national service corporations like OGP, Kvaerner Petrominco and Ranhill-Worley Parsons as sub-consultants. With Petronas, we are registered as Project Management Consultants and had undertaken several projects for Petronas subsidiaries of VCM, GIRM and CUF. Work in the petrochemical sector exposes us first hand into the stringent ISO 9000 and Petronas Technical Standards for technical management. Our firm is well experienced and capable of undertaking challenges in the development sector.

Commitment

For us at **Arkitek Punca Cipta** we regard that no work is too small. Every job that we undertake is done in the basis of mutual interest. We believe in respecting the need and hope of the clients as much as they respect our professional capacity and we try to provide the best possible way for them to realize their dream.

Corporate strategy

We remain committed to a strategic growth of strength and resources to best serve our clients.

Several key strategies formulated are in

- a) Human resource
- b) Computerization

Human resources

Firmly believed in the human resource as the primary asset, the firm is committed to continuously expand its staff quality, strength and resources. Architects are selected from established schools both local and oversea. Technical and administrative staffs are enlisted from local institutions, polytechnics and training institutes. Continuing education is provided throughout the year by way of internal seminars and training. The firm practices a policy of providing places for practical training and continuously encourages its staff in personal development including promoting distance learning.

Computerization

Arkitek Punca Cipta has made full computerization of operations. By way of recruitment, in house training and procurement of computer hardware/software, the firm is almost fully computerized in its design, production and management operations. The firm's investment in this area is a step in line with the up keeping with the ever-changing technology

Services

The company offers consultancy services in the following fields:

Architecture

- _ Schematic Design
- _ Design Development
- _ Contract Documentation
- _ Project Implementation
- _ Supplementary Services

Together with the associate companies, Arkitek Punca Cipta is able to offer services in the following fields:

Engineering

- _ Civil and Structural Advisory Services
- _ Mechanical and Electrical Advisory Services
- _ Infra Structures

Development Analysis

- _ Feasibility Studies
- _ Cash Flow and Investment Studies

Interior Design and Refurbishment

- _ Interior Design
- _ Facility Management

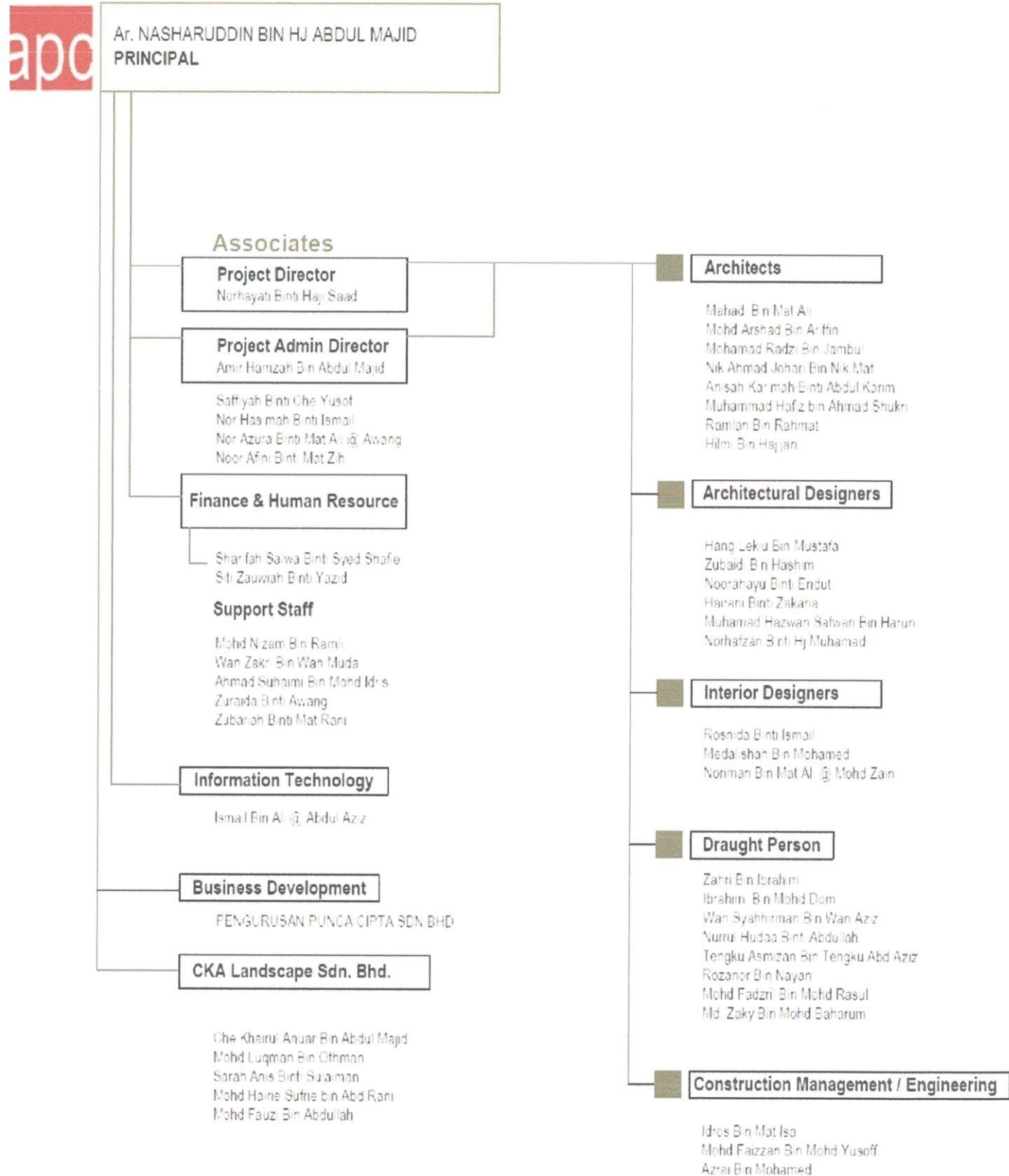
Financial Analysis and Development Proposals

- _ Development Proposals
- _ Financial Planning
- _ Cash flow and sensitivity analysis

Employment and Human Resources

Human resource is recognized as the primary asset of our organization .Employment policy is based on the philosophy that a man if given a chance may elevate his ability and advance his status in life. With continuous training one may progress to giving his best towards customer satisfaction. More importantly, the employment opportunity is our small contribution towards nation-building. On these premises, APC had practiced open employment policy - recruiting staff from the diverse disciplines. The policy proven in enabling us to presently provide comprehensive consultancy services. Our staff are recruited from graduates of local and oversea architectural institutions. Continued education is made compulsory through systematic professional and technical seminar. Staff are continuously exposed to current development in industry and encouragement given for tertiary professional education.

2.2 Organization chart



2.5 List of the project

2.5.1 Major project completed

Corporate and business sector

- ✓ Mayban Finance Berhad
- ✓ Maju Holding Sdn. Bhd
- ✓ The New Straits Times Press (Malaysia) Berhad
- ✓ TDM Berhad
- ✓ Tongkah Medivest Sdn. Bhd
- ✓ Hubungan Raya Terengganu Sdn. Bhd
- ✓ GPQ Sdn. Bhd
- ✓ TD Gabongan Sdn. Bhd
- ✓ TD Development Sdn. Bhd
- ✓ BABENA Sdn. Bhd
- ✓ Epic-Babena Sdn. Bhd
- ✓ Persatuan Seni Silat Terengganu
- ✓ Persatuan Sejarah Malaysia
- ✓ Yayasan Islam Terengganu
- ✓ Pakadiri Sdn. Bhd
- ✓ Arah Jitu Sdn. Bhd
- ✓ Perbadanan Memajukan Iktisad Negeri Terengganu (PMINT)
- ✓ Syarikat Perumahan Negara Berhad (SPNB)
- ✓ Terengganu Agrotech Development Corp Sdn Bhd (TADC)
- ✓ Redland Groups Of Companies
- ✓ Lembaga Kemajuan Terengganu Tengah (KETENGAH)
- ✓ Dalya Sdn. Bhd
- ✓ Teguh Supplies & Services Sdn. Bhd
- ✓ Kuala Ibai Properties Sdn Bhd
- ✓ MZ Hakujaya Sdn Bhd
- ✓ Zainal @ Shariff Ibrahim Sdn Bhd

- ✓ Pembinaan ANZ Sdn Bhd
- ✓ HMN Construction Sdn Bhd
- ✓ UMNO Negeri Terengganu
- ✓ Koperasi Pengguna Insaf Trg Bhd
- ✓ Tanjung Developer Sdn. Bhd
- ✓ Permai Unggul Sdn. Bhd
- ✓ MSO Corporation Sdn. Bhd.
- ✓ Primula Beach Resort
- ✓ PTB Resort Sdn. Bhd.
- ✓ Adwa Mutiara Corporation Sdn. Bhd.
- ✓ Dacing Sempurna Sdn Bhd

Schools

- ✓ Hubungan Raya Trengganu Sdn. Bhd
- ✓ (SMK Sungai Baging, Kuantan)
- ✓ MZ Hakujaya Sdn Bhd (SMK Lepar, Pekan)
- ✓ Kuala Ibai Properties Sdn Bhd (SK Alor Lek, Setiu)
- ✓ Zainal @ Shariff Ibrahim Sdn Bhd (SK Sungai Lerek, Setiu)
- ✓ MME Realty & Management Sdn Bhd
- ✓ (SAR Felda Kerteh 1, Dungun)
- ✓ Ismawany Sdn Bhd (SAR Felda Seberang Tayor, Kemaman)
- ✓ Rassa Bina Sdn Bhd (SAR Felda Selasih, Besut)
- ✓ Sek. Keb. Sri Jaya
- ✓ Sek Keb Wakaf Tapai
- ✓ Kwarters Guru SMK Cherol
- ✓ Kwarters Guru SMK Sri Bandi
- ✓ Kwarters Guru SMK Wakaf Tapa

Individual

Individual bungalow and residence . Lot of job come from the developer housing to develop the residences included terrace house and shop house.

University and colleges

- ✓ Universiti Putra Malaysia (UPM)
- ✓ Universiti Teknologi Mara (UiTM)
- ✓ Universiti Putra Malaysia Terengganu (UPMT) / KUSTEM
- ✓ Kolej Ugama Sultan Zainal Abidin (KUSZA)
- ✓ International College of Terengganu (ICT)
- ✓ Kolej Teknologi Bestari (KTB)
- ✓ Terengganu Skill Development Centre (TESDEC)
- ✓ Terengganu Advance Training Institute (TATI)
- ✓ Universiti Perguruan Sultan Idris (UPSI)
- ✓ Universiti Darul Iman Malaysia (UDM)

Petroleum and gas industry

- ✓ Petronas Gas Berhad
- ✓ Petronas Carigali Sdn. Bhd
- ✓ Vinyl Chloride (Malaysia) Sdn. Bhd
- ✓ OGP Technical Services Sdn. Bhd
- ✓ Kvaerner Petrominco Engineering Sdn Bhd
- ✓ Optimal Group of Companies
- ✓ Group Info Resources Management (GIRM)
- ✓ Centralised Utilities Facilities (CUF)
- ✓ Ranhill Worley Sdn. Bhd.
- ✓ Lynas Corporation
- ✓ Petronas Penapisan (Melaka) Sdn. Bhd

2.5.2 Current project

There are lot project that our firm get for this year . So I just give the example that I have been involve such as :

Cadangan pembangunan 165 unit rumah teres setingkat,
56 unit rumah teres mampu milik dan 1 unit pencawang
TNB di atas lot 4347 (GRN 8631) ,mukim Rusila ,
daerah Marang,
Terengganu Darul Iman .

Tawaran semula cadangan membina dan menyiapkan laman
selera di dalam taman berserta kemudahan Rekreasi di Universiti
sultan Zainal Abidin , (UNISZA) Kampus Gong Badak ,
21300 Kuala Terengganu,
Terengganu Darul Iman .

Cadangan membina sebuah banglo persendirian satu lapis di mukim
Ajil ,21800 Ajil ,Kuala Berang ,Terengganu,
Terengganu darul Iman.

Cadangan membina 12 unit rumah berkembar setingkat
Dan 5 unit rumah sesebuah setingkat di atas Lot 181,
Mukim Kerteh ,Daerah Kemaman ,Terengganu .
Terengganu Darul iman .

Cadangan membina dan menyiapkan sebuah rumah banglo 1 lapis (setingkat) di atas Lot 13527 , Kg. Padang Teluk Pasu , Mukim Manir ,Daerah Kuala Terengganu. Terengganu Darul Iman.

Cadangan membina dan menyiapkan sebuah banglo satu lapis di atas Lot 2471 (Gm1812) barang, mukim kuala Ibai , Daerah Kuala Terengganu. Terengganu Darul Iman.

Cadangan membina dan menyiapkan projek semi d dan rumah banglo Di mukim kerteh, Kemaman ,Terengganu, Terengganu Darul Iman.

Cadangan membina dan menyiapkan sebuah rumah kediaman Kekal 2 lapis di atas Lot PT 1667 di pen. Semula Tok Adis Fasa iii, mukim Kuala Ibai ,Kuala Terengganu, Terengganu Darul Iman.

Cadangan membina dan Menyiapkan 3 buah rumah Semi D , 4 buah rumah banglo di mukim 21400 bukit payung, Kuala Terengganu. Terengganu Darul Iman .

CHAPTER 3

DESIGN OF BUILDING USING AUTO CAD

3.1 Introduction

Computer-aided design (CAD) is the use of computer systems to assist in the creation, modification, analysis, or optimization of a design. CAD software is used to increase the productivity of the designer, improve the quality of design, improve communications through documentation, and to create a database for manufacturing. CAD output is often in the form of electronic files for print, machining, or other manufacturing operations.

CAD software for mechanical design uses either vector based graphics to depict the objects of traditional drafting, or may also produce raster graphics showing the overall appearance of designed objects. However, it involves more than just shapes. As in the manual drafting of technical and engineering drawings, the output of CAD must convey information, such as materials, processes, dimensions, and tolerances, according to application-specific conventions.

Besides not just the architecture students that use this software for application in the design drawing perhaps it use in large sector such as engineering drawing, designs and other else. Today this software are helpfully for the drawing design that can reduce time and work besides produce the quality product and services. For the 3D modeling usually use the software Google Sketch up , marketed officially as **Trimble Sketch Up**, is a 3D modeling program for a broad range of applications such as architectural ,civil, mechanical , film as well as video game design

Furthermore , the combine of the software AutoCAD and Google sketch up will be make perfect drawing in architecture drawing. It is really suitable for the Department Building student. Faculty of architecture ,planning and surveying should take this as the subject that all

students can take and learn how to use this software because it is important for the student in the future .

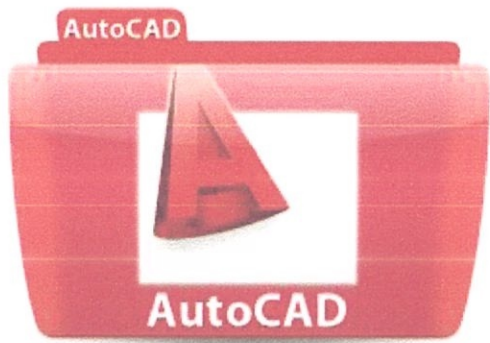


Figure 2.2 software logo's

3.2 Project's Background

For the design drawing it just take one day to five day consist the size of the project. Because of the technology in today work become fast and easily to do besides produces the quality products and services. Different with the construction work that take long time and lot procedures to make work done. The success full contractor is that who have a lot of experiences in this industry ,brave to take high risk , keep calm in this industry ,understand and can read the drawing so that they can make plan before construct such as to reduces cost ,time ,labors to make efficient work but high quality in service and job.

Moreover ,at the Arkitek Punca Cipta Firm they have many projects in design drawing for this year. For the practical student usually they give the simple work or job to them such as to create or design simple building for the example individual house, residence housing and shop houses. Every drawing that have been drawn by student must submit to the architect to check any mistake besides teach in how to draw the drawing in the right method. So every drawing can be done in one to five days. After submit to the architect ,they must show to the client and if the client agree with that design ,the architect can move to the next step.



After that , the drawing must be printed and send to the government agency for the example MBKT,SATU,BOMBA ,Quantity Survey, Engineer and other else for approval To make construction in this project in the future. However, not all construction can be started after the drawing was approval ,for example the drawing design can be solved in short time but for the construction they must follow the step or another level before the construction. Usually for the individual house take one year before the construction can be construct because for site excavation ,government agency approval ,soil factor and other .

In conclusion , every week or month for me as the practical student must draw the drawing in different project and not just for one project. So for this report ,I will show the job that I get from the architect every week and month to be learn how the drawing was made besides understand drawing procedure and what the contractor must be do after receive the job .

3.3 case study

The case study consist the information that the research obtain through the study .In this case study, lot of job was at the office not at the site because all project that for this year not been started yet and the past project have been done. It will be show the method step in design drawing stage in every week and month for every project that have been get.

3.3.1 Design Stage

| | | |
|--|---|--|
| <p>May 2013 First week</p> | <p>First day in Arkitek punca cipta office at kuala Ibai ,Kuala Terengganu .This is was first time I come here for start as practical student and in first day I introduce myself to all staff at APC .I come with zero experience and knowledge in Auto Cad software .</p> <p>so in the first week , I learn the basic in how to use that software with all staff and architect besides with other student practical to that more experience and more advance in this software .</p> <p>Such as, how to draw single or double line. Learn how to use the tool in Auto Cad that have lot function beside learn how to use Google sketch up</p> <p>That important in 3D modeling .It just take one week to understand for the basic use.</p> |  <p>Figure 3.1 APC Office</p>  <p>Figure 3.1.1 Table Work</p> |
|--|---|--|

Second week

In second week ,doing lot exercise and research in Door & Window types wood, aluminium and steel. Many design according to Modern or Traditional and how to reduce the cost in material usage.

Beside I learn the how to calculate the size and area for the building such as Bungalow house and Semi D. The draft man at APC always teach me. So for the first project the architect give me one drawing to be settle for modified the drawing because the owner the client want to change the design.

This is my first job in second week (21/5/2013) as practical student . So I take the challenger to finish this job. It's is not easy job for me that do it in first time. The architect want me change the type of drawing and the window of the bungalow at Lot 13527 ,kg . Padang Teluk Pasu, Mukim Manir, Daerah Kuala Terengganu. Terengganu Darul Iman.

For the first job, it take long time to finish the job because lack in using Auto Cad .But I lot asked other staff that how to do. The drawing was finish and submit to the architect for next step.

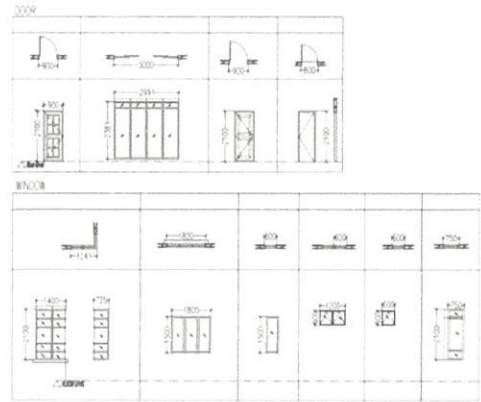


Figure 3.2 Door & Window

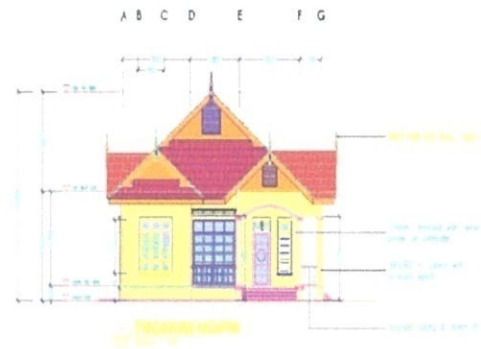


Figure 3.3 Front Elevation

All the drawing set at Appendix

Third week

Before the submission first project that related with first project, the architect give me other job to draw the Land Lot (pelan Tanah) in the Auto Cad. It is basic or first stage in drawing before design the building because Land Lot is very important to know location and bearing the building. Besides to draw the set back from the boundary line.

But to draw this ,it need other skill or other type method to draw in Auto Cad because need to change the Bearing, Area and other. This Land Lot was at Lot13527,Mukim Manir, Kuala Terengganu.

Terengganu Darul Iman.

In the third day, after submit all finish work .The draft men teach me and other friend how to Fold the A1 drawing in 30 sheet to A4 size for submit to government agency and other.

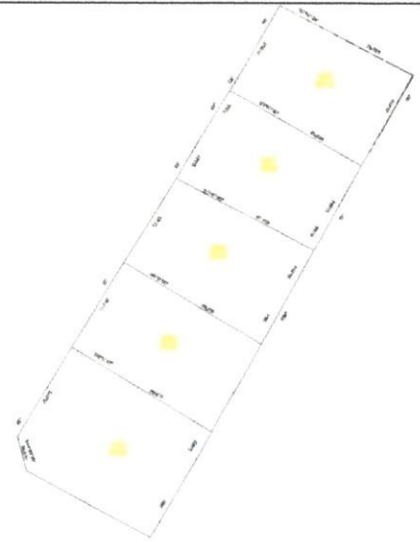


Figure 3.4 Land Lot



Figure 3.5 Drawing Sheet

June 2103

First week

First day and first week in June. Other architect asked me to design whole individual bungalow at Mukim Ajil ,Kuala Berang, Terengganu Darul Iman. The architect just me the soft copies Land Lot and brief to me how the design look like that just simple and not high cost suitable with client taste and budget .

The drawing must including all set drawing such as Elevation, section, piping drawing and electrical drawing beside design in 3D model. For the basic drawing such as elevation and section with full spec take a one week to finish.

At the first stage ,the floor and roof pelan must draw in Auto Cad and then transfer to the Google Sketch up for 3D design to get the how is look and easy to design other drawing that needed such as elevation ,section and floor pelan.

After that from the 3D model transfer to the Auto Cad to draw the elevation , section x-x and section y-y. Lastly ,install all spec about the drawing like type of Window & Door, Area and Height , lighting and electrical specification, drainage and subway. All this thing is the basic for the drawing and very important.

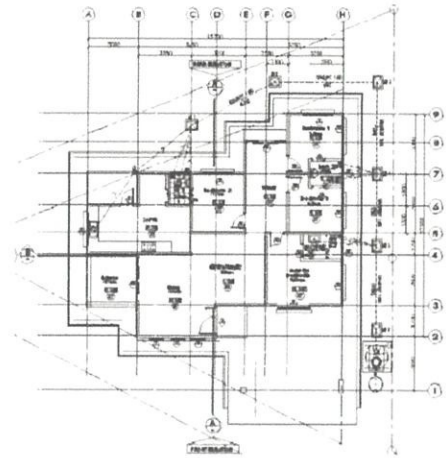


Figure 3.6 Floor Pelan .



Figure 3.7 3D Model



Figure 3.8 Electrical and Ceiling Pelan

Lastly all the spec's for the ventilation and lighting in the building must be consider. So for the type of the lighting and fan can be choose according to the table.

All the drawing scale was using 1:100 and unit of mm. After the first submission to the architect ,the client want the roof must be change and all the pelan was finish. Lastly printed in many set for the approval.

LIGHTING AND VENTILATION SCHEDULE

| No | FLOOR AREA (sq.m) | LIGHTING | | VENTILATION | | |
|---------------------------|-------------------|----------------|-----------------|----------------|--------------|--------|
| | | OPENING (sq.m) | MINIMUM (< 10%) | OPENING (sq.m) | MINIMUM (5%) | |
| 1 | LIVING | 1450 sqm | 0.98 sqm | 19.89% | 0.42 sqm | 2.13% |
| 2 | DINING & FAMILY | 1680 sqm | - | - | - | - |
| 3 | DAFUR | 2004 sqm | 3.06sqm | 15.26% | 0.9 sqm | 4.50% |
| 4 | MASTER BEDROOM | 1448 sqm | 6.12sqm | 41.68% | 1.8 sqm | 12.24% |
| 5 | BEDROOM 1 | 1020 sqm | 6.12sqm | 60.00% | 1.8 sqm | 17.64% |
| 6 | BEDROOM 2 | 1224 sqm | 3.06sqm | 25.00% | 0.9 sqm | 7.35% |
| 7 | BEDROOM 3 | 1020 sqm | 3.06sqm | 30.00% | 0.9 sqm | 8.82% |
| 8 | BATH 1 | 3.15 sqm | 0.72sqm | 22.85% | 0.72 sqm | 22.85% |
| 9 | BATH 2 | 2.63 sqm | 0.72sqm | 27.37% | 0.72 sqm | 27.37% |
| 9 | BATH 3 | 2.70 sqm | 0.72sqm | 26.66% | 0.72 sqm | 26.66% |
| 10 | DAF PORCH | 2702 sqm | - | - | - | - |
| Jumlah keseluruhan Bersih | | 120.10msq | | | | |
| Jumlah keseluruhan Kasar | | 163.81msq | | | | |

Figure 3.9 Lighting & Ventilation Table.

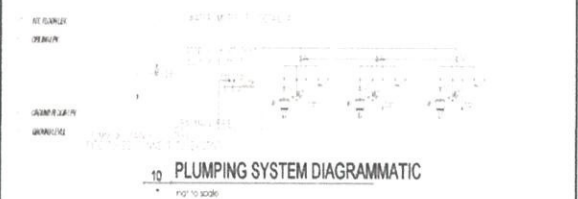


Figure 3.10 Plumbing System.

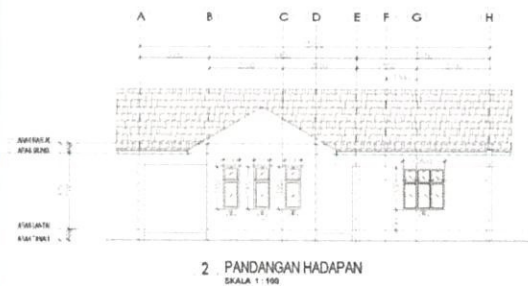


Figure 3.11 Front pelan

All drawing set at Appendix

Second week

The last project was be settle by architect . For this week I have been asked by other architect that want me to fold the drawing A1 to A4 in 50 sheets for the submission .

Besides I have asked to design and finish the house of Semi D at Kerteh ,Kemaman ,Terengganu. Terengganu Darul Iman.the architect give me just the floor pelan for me to draw and design follow to it.

The cost of the Semi D is reasonable and suitable for the family that need the house that cheap and comfortable. For the first step ,the floor must be update such as the install the furniture and area size for easy in design. After that, transfer to the Google sketch up for the 3D model .

In the sketch up the design be more real and helpful for in designing. The wall and the structure was be raised ,beside choose the Window & Door for the building that are suitable with the materials. Lastly, design the roof that matching with the building.

After finish ,the 3D file must be transfer to the Auto Cad for design the elevation, section and other else.



Figure 3.12 Drawing sheets.

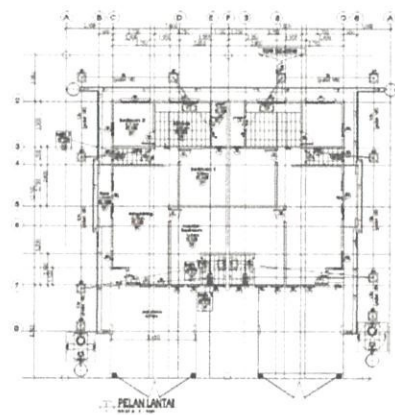


Figure 3.13 Floor Pelan.



Figure 3.14 3D Model.

Third week

Prepare and continues the Semi D project with draw all section and elevation, with the Google sketch up all the design more smooth in work and short time in design because very helpfully for give the picture how the design will be look.

Every drawing in one or half day to finish just the drawing and one day to create or install all the spec's. Lastly, the ventilation and lighting must be calculate to put in the table and every single drawing must put together in the table that 1:100 scale.

Submit to architect to get a comment . Repair and then send to the architect for the last submission.



Figure 3.15 Semi D Front Elevation



Figure 3.16 1:100 Table



Figure 3.17 Partition Wall Detail

All the drawing set at appendix

Last week

For the project at the Kerteh ,Kemaman ,Terengganu. The developer want to build single house to such as Single Banglo, so the architect give me the job to design and drawing the Single building. It more easy because this is the second time that I draw and design the Single house but for this design is was more difficult because the client want the house in modern design and different with other house.

Besides that the Land lot was small ,so I can put 3 Room and 2 Bathroom according to budget. However the design still look elegant but simple. The structure for the house or Bungalow Are more simple with other than building that have more storey and the foundation was strip foundation.

Using the same method that transfer to the Google sketch up for the next step. The material choosing depend on the budget and client taste. For the developer house it's more difficult in Approval stage because of lot documentation between that the individual house.

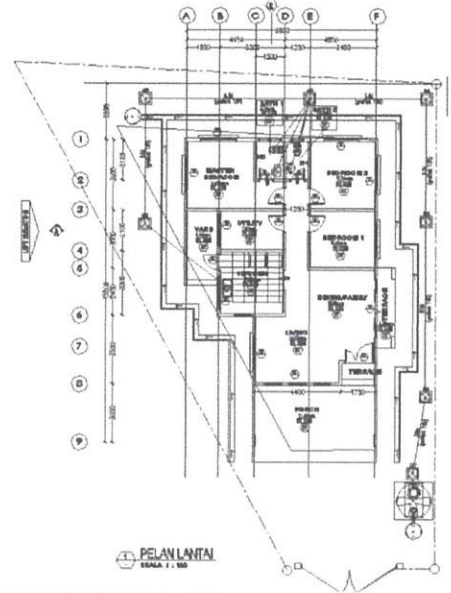


Figure 3.18 Floor Pelan



Figure 3.19 3D Model

July 2013

First week

In this design there are many design of roof shape and wall structure ,because of the Lot Land was small.

Beside take are long time to be finish the drawing and I am lucky because the architect teach me how to draw in quickly .So for this week I was finishing the drawing for the submission,

Modern design stages are different with other design because of the roof design and the shape of the structure was square and lot of using glass at the wall. Beside the color for the wall was not colorful just use the dark color or not to shine but beautiful for the example gray color.

Because this is first task to me that to draw the construction drawing so it take much time to finish all the drawing set. For the first week I take much time in elevation and section drawing.

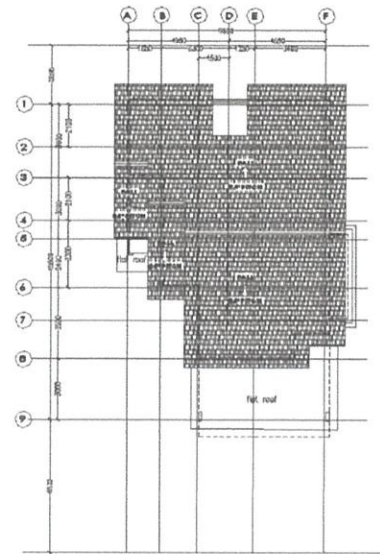


Figure 3.20 Roof pelan.

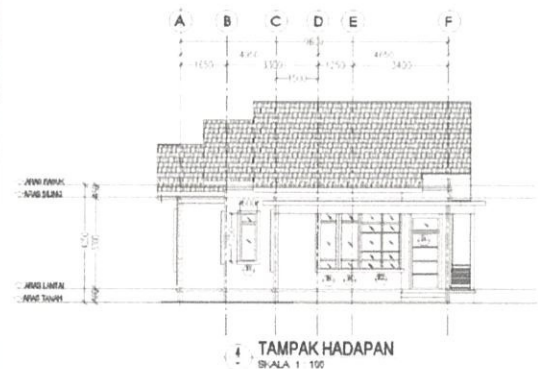


Figure 3.21 Front Elevation.

Second week

At the second week , I continue other drawing such as the electrical pelan ,sanitary diagram and other else. Same method use in the all drawing design for calculate the ventilation and lighting in the table . After finish all the design ,submit to the architect for comment after the last submission .

In the middle week all the other practical student was have meeting with the architect for the other task that want me and other too going to the (UNISZA) University Sultan Zainal Abidin at Gong Badak ,Kuala Terengganu. Terengganu Darul Iman.

To measure all the area and the size of café that has been done in construction for the as built drawing. In this task we must measure all the size including the Door & Window ,size opening wall and floor level from ground level for the drawing that call As Built Drawing.

This drawing was the drawing that must be design after construction was finish. So that will be have the different with first design with the building that was built because of the problem at the site or the other matter that change design in site that happen in last minute or in construction.



Figure 3.22 Section A-A

All the drawing at the appendix



Figure 3.23 UNISZA

Third week

At the UNISZA Campus ,it take three and four day to finish all the measure at the café. Exactly, There have many design or size that change with the first design such as the floor level ,the brick chair ,the location of the parking area such as the size of the parking area and the wall design that has been change.

The seven of us was divide into three group that first group measure at the café ,second group at the toilet and the last group at the shop area. So it take 4 days to solved all the measured because not much change at the building with the first drawing design .

Back to the office ,the architect give the original drawing that must be survey and find the different the measure that has been take at the UNISZA . So the original drawing must be modified all the design that was change of the measure of the area and height .



Figure 2.24 Café



Figure 2.25 Parking Lot



Figure 2.26 Toilet

Last week

For the my group ,we get the task to resolved the drawing at VIP Café and the parking area that we has measure at last week. For this café , the design was are modern than other the café because the all material that use suitable the concept that luxuries and simple.

For the VIP Café ,for the ventilation in the room ,there use the Air Conditioner and use wallpaper for the wall decoration. Besides, around the café it have the pool for decoration at outside.

Furthermore, the wall design use lot of the glass window or large opening for the glass window in this situation the lighting for the VIP room lot use of the environment sources such as the Sun Ray .But there was use the tinted glass to reduce the heat and Ray from the sun directly .

From this building ,the conclusion is the design just not modern design but the architect also take the factor that can reduce usage in the electrical bill such as for the this big area that will be much lot of electric power for lighting not just at night but in day to.

The garden and the tree was decorate for this café for the decoration outside the building beside for fresh air and peaceful & calm for the student eat at the café .



Figure 3.27 measure the Tile.



Figure 3.28 The Park at front cafe



Figure 3.29 VIP Café

This Anjung Café was have the three open area for the table and chair that put at the outside that use the roof from the lightweight material that called a fabric structure .

This Café was to replace the other Café that cannot accept or receives are many student in pack time. The As Built Drawing is very important after the construction for the guild line if anything else will be happen in the future such as for the renovate , for the inspection and other else.

With the original drawing I just compare and modified much easy with first stage in drawing method .Beside it take just two to three day to solved it.

In this task , lot using the revision method to draw the drawing . After all the drawing finish and combine with other group the drawing was submit to the architect to check and for the comment before printed.



Figure 3.30 Pool

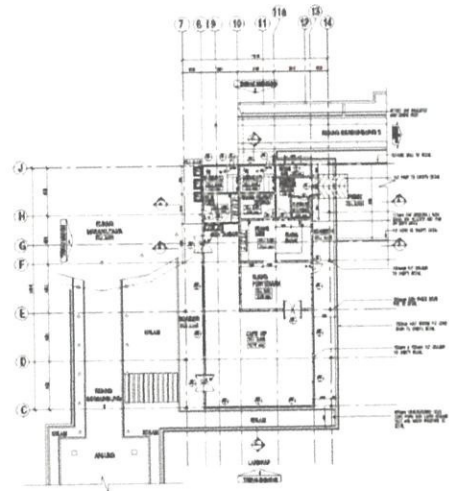


Figure 3.31 VIP Café Floor pelan

Sample Drawing Of As Built Drawing

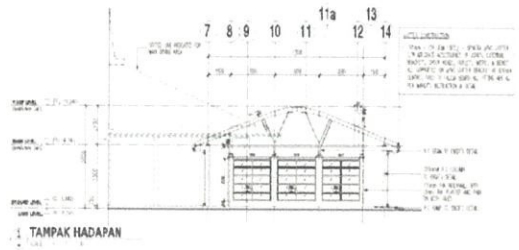


Figure 3.32 Front Elevation

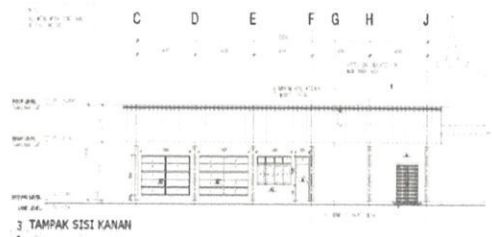


Figure 3.33 Right Elevation

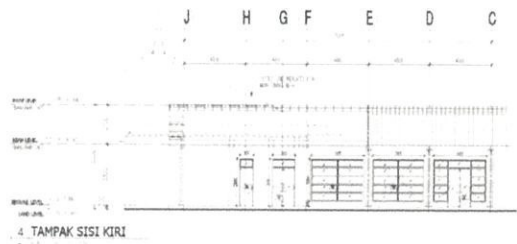


Figure 3.34 Left Elevation

August 2013
First week

All the set drawing submit to the architect before the holiday of Hari Raya Aidilfitri at 8 August 2013. The holiday was started 8 to 13 august 2013.

Second week

After the holiday ,I a another task to just design a Bungalow house at Bukit Payung , Daerah Marang , Kuala Terengganu . Terengganu Darul Iman. The task is prepare the design for client before the agreement with them , if the client agree or accept the design the drawing will be go to the next step such as the drawing construction.

The architect just give the Land lot and brief How the design look like. The contract was to design 7 bungalow and 2 Semi D at Bukit Payung . Moreover all the Land Lot was different with each other in size of area and shape. So I was design three type of the house and one design for the Semi D.

The design was included the cost and the budget from the developer for each house. Every type have 4 room including the utility room,2 bathroom ,one kitchen and porch for the car that can put two car in the same time.

For the first design method , I design the drawing in the Auto cad software. For every area with the furniture and after that transfer all the drawing to the Sketch up Google ,For the 3D designing.

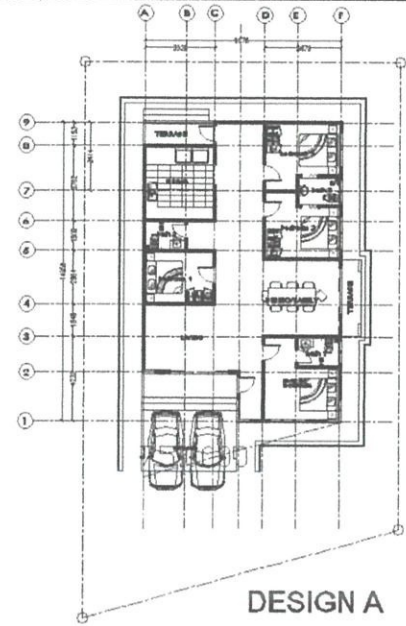


Figure 3.35 Design A



Figure 3.36 Design B

Third week

In the same time for the Semi D design I give to other practical student to design the drawing of the Semi D. So I just involve in the bungalow house design moreover the architect just want all the design in the 3D model and render the model to show to the client for the agreement .

I started with the Design B because it more easy and small than the Design A to finish the Model before render in Sketch up and Photoshop. After that I continue with Design A.

However in the sketch up software the designing stage must do in properly because in 3D stage was difficult from the Auto Cad software . For the example all the line in the pelan must combine with other line so the wall can be got up in vertically .



Figure 3.37 Design B



Figure 3.38 Front model



Figure 3.39 Left Model

Last week

This is the example of the design A in the 3D model in elevation look . This house using the simple design of the roof besides the wall because of the size and area of Lot Land was small that harder to design in other shape and different look.



Figure 3.40 Design A



Figure 3.41 Left Elevation



Figure 3.42 Right Elevation

After the last task was send to the architect I continues with other task that the job was given by the same architect. It was the first time job that to render or color the floor pelan with using the software Photoshop in proper color with standard in design stage of architectural drawing.

The drawing floor pelan is the Semi D, 2 different design of the Bungalow 2 storey. Firstly, all the item and the furniture must be install in the pelan in the Auto Cad Software for future building layout.

After that all the drawing was save as in the adobe Photoshop for render and color in adobe Photoshop for the last stage. This work is exactly is for the refer in the meeting with the client or for the estimating to know the price of the building.

This task just take two day to be finish and submit to the architect.



Figure 3.43 Semi-D House



Figure 3.44 Ground floor Bungalow Design A .



Figure 3.45 First Floor Design A



Figure 3.46 Ground Floor Design B



Figure 3.47 First Floor Design B

September

2013

First week

This month is was the last month for me as the practical student in the Arkitek Punca Cipta firm that started from the May ago. For this week I was have the meeting with the bos and the architect for the task that want me and other student practical to go the Banting ,kuala Langat ,Selangor for the conservation drawing of the Masjid Diraja Sultan Alaeddin Jugra.

The task is about the conservation building project that restoration that consist the original elements from the building in the past. The meaning is to change the building that the age the building more than the 40 year under the Warisan and UNESCO world heritages in three method such as conservation building (building restoration ,facade improvement ,walkway / verandah reinstatement ,building sign, etc.).

The second is conservation of area (enhancement of historical ,architectural and culture values, controlled new development, facadism and facsodomy).The last is conservation of culture (retaining the unique cultural heritages).



Figure 3.48 Masjid Diraja Sultan Alaeddin Jugra.



Figure 3.49 APC group

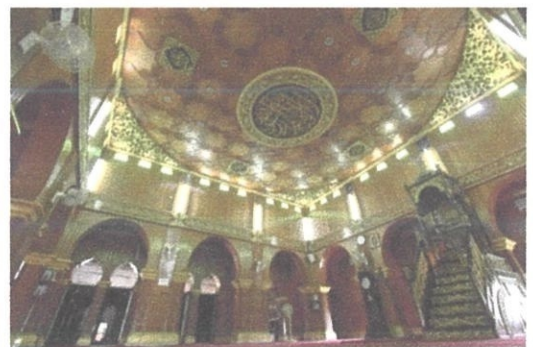


Figure 3.50 Inside the Mosque

Second week

All the measured work was done in just one week because work in consistent and work in group as one team. After the job finish ,all the group team back to the Terengganu for the two day for the holiday, after that come back to the second APC Company in Kuala Lumpur at Oasis ,Ara Damansara.

This week, all the work was to focus in the 3D model because there are not much time to solved this project before present to the JKR in 3 week before the preparation to present to the Sultan Selangor because it is was the Royal Project .

The 3D model was design in the sketch up software with detail design ,so the detail design take much longer than basic design model.

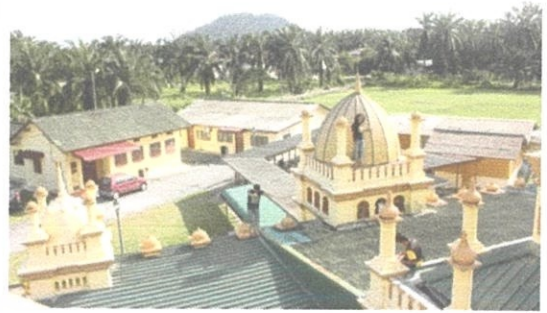


Figure 3.51 Measured work



Figure 3.52 Upper Ceiling



Figure 3.53 Front Elevation

Third week

Exactly, I am not have much time to resolved all the task because the next week I will be finish the job as the practical student . Besides, all the work progress was the in early stage.

For the my job, I was to be create the 3D model for the dome entrance at left and right at the Mosque ,so all the design must be detail and do it in properly .

After the dome entrance was finish ,go to other 3D model to produce the Rumah bilal at the surrounding mosque . It is because in the conservation method must include the conservation of the area ,so all the building that was exist on the land that contribute to the building that was conservation of building must be included.

In the same time , in the restoration project have a lot method to be realize such as in time and work commitment in research to restoration the building back to the original design because taking a long time to be finish .

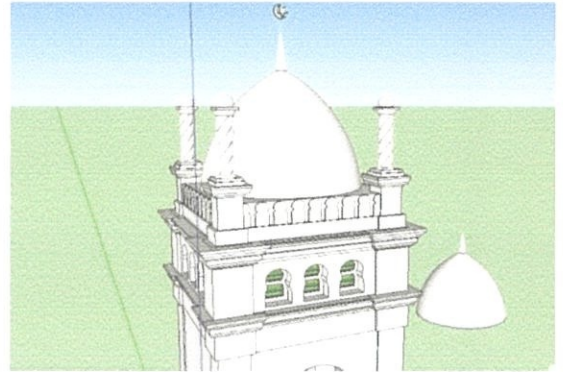


Figure 3.54 Sample Component Dome In 3D

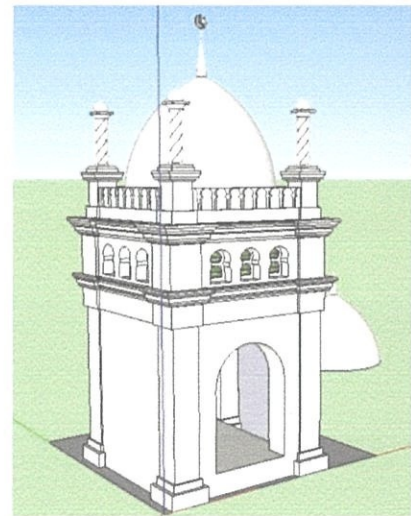


Figure 3.55 Entrance Dome

However, I cannot show all the progress because it was early stage of 3D model in this week. After design the dome at the entrance at right and the left elevation. I was done in design 3D model of the Rumah Bilal and the Stor at Masjid Jugra.

The 3D model was follow the all measured at site and the design must create with the original design and look that was build at early 80's. Besides in this task I was learn lot about how to manage the project with the conservation and the demolition that was a special case.

What I mean is this project was the Royal project in Selangor Darul Ehsan. All the 3D design must be solved with all the drawing Masjid Sultan Alaeddin at Jugra ,Banting ,Selangor Darul Ehsan before the presentation to the client that JKR ,Majlis Agama Selangor in the November .



Figure 3.56 Perspective view

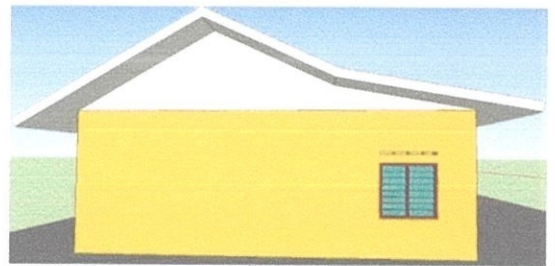


Figure 3.57 Left Elevation



Figure 3.58 Another perspective View

This is the sample of the 3D model that I was done in sketch up software such as the Rumah Bilal and the Rumah Rehat that have a big stor area inside the building. Besides ,all the material was use the wood as the wall of the building .

However the 3D model of the Rumah Rehat cannot be done because I was finished the practical at this firm.

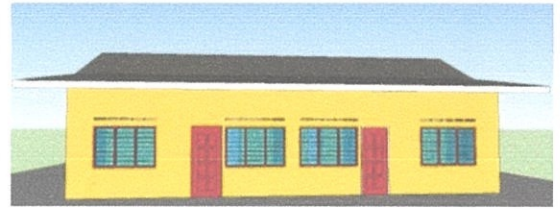


Figure 3.59 Front Elevation



Figure 3.60 perspective view



Figure 3.61 Other View

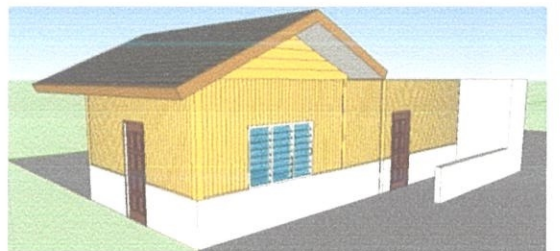


Figure 3.62 Rear view

Last week

The last week in the firm, continues with the 3D model beside in the same time produce the AutoCAD drawing but just not for overall.

Prepare for finish the report practical and other else.

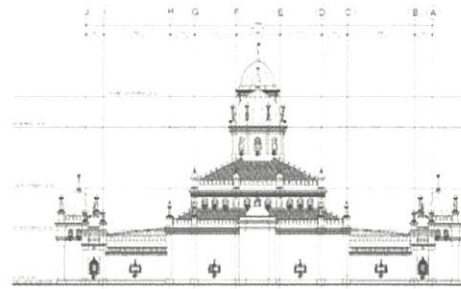


Figure 3.63 Rear Elevation

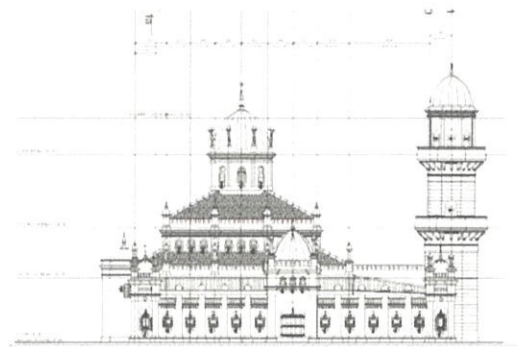


Figure 3.64 Right Elevation

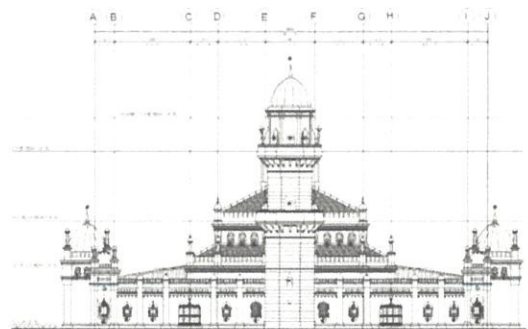


Figure 3.65 Front Elevation

CHAPTER 4

CONCLUSION AND RECOMMENDATION

In the conclusion , after 6 month practical at this firm I much learn about how to use the software that really help me in the future besides this software really important today for the FSPU student . Because we live in the modern technology ,all work needed the technology to produce the quality and effective work . I take the chance and take this advantages for me to learn more advanced in this software for help to become successful contractor or architect in the future beside in today lot company and firm need the worker that expert in this software. The smart contractor is the contractor that really good in how to read the drawing and from the drawing that can be create or construct the real building same with the drawing.

However it is recommended :

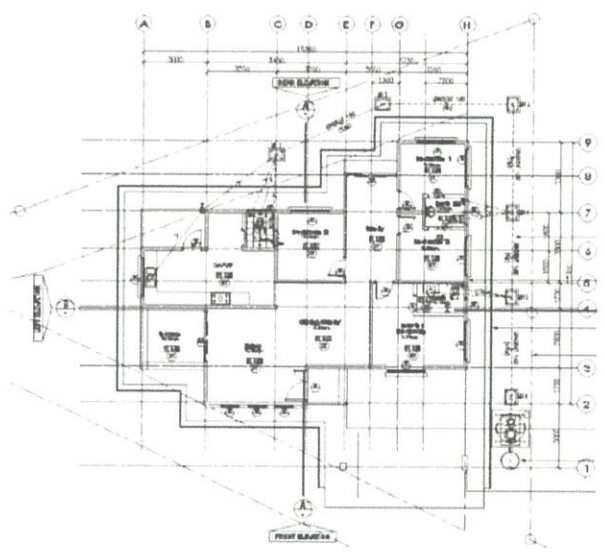
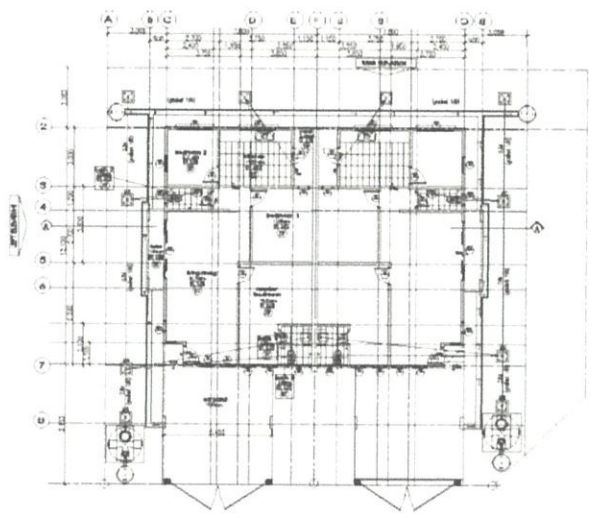
- All the FSPU student must take the Auto cad software as the regular subject.
- Introduce the software such as sketch up and Auto Cad in early stages such as in the first semester.
- For the student in the building ,they should know how to arrange the sub contractor or consultant and learn the material or facts of the building but in the same time , they must know how the building can be construct from the paper sheets of drawing to real building on the earth .

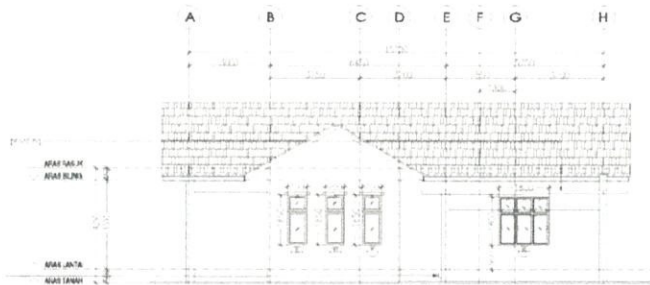
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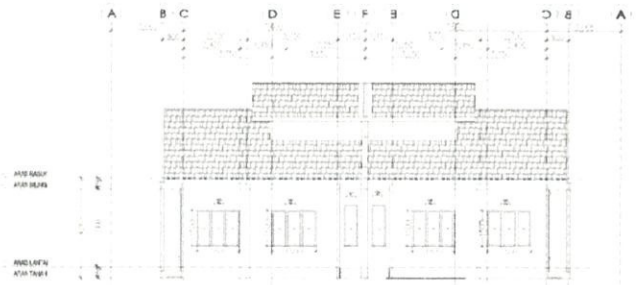
Appendix

4.1 Example of AutoCAD Drawing

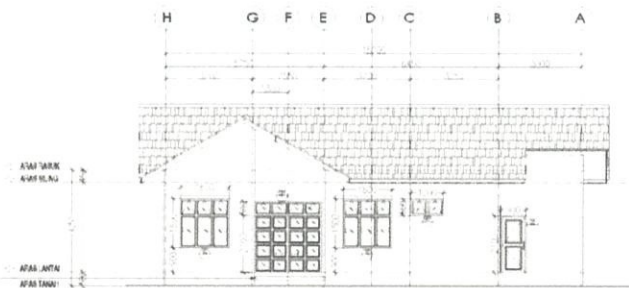
| | |
|---|---|
| <p>Cadangan membina sebuah banglo persendirian satu lapis di mukim Ajil ,21800 Ajil ,Kuala Berang ,Terengganu, Terengganu darul Iman.</p> | <p>Cadangan membina dan menyiapkan projek Semi D di mukim kerteh, Kemaman ,Terengganu, Terengganu Darul Iman.</p> |
|  <p>Floor pelan</p> |  <p>Floor pelan</p> |



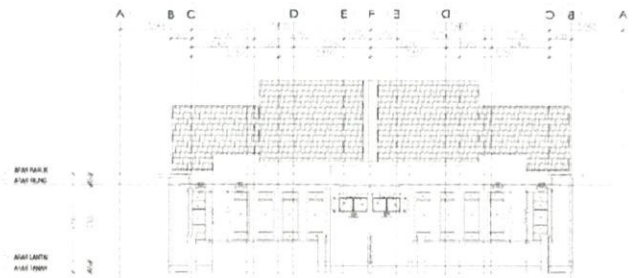
Front Elevation



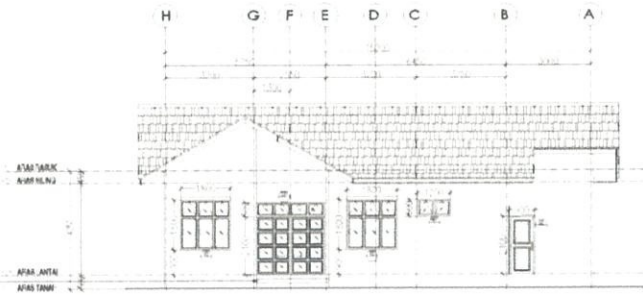
Rear Elevation



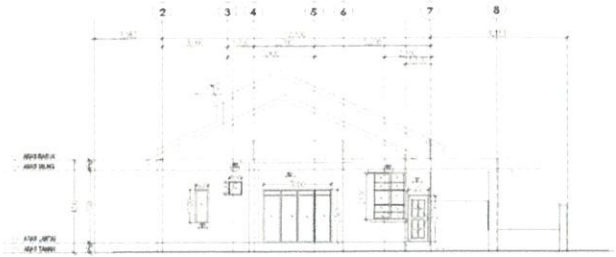
Rear Elevation



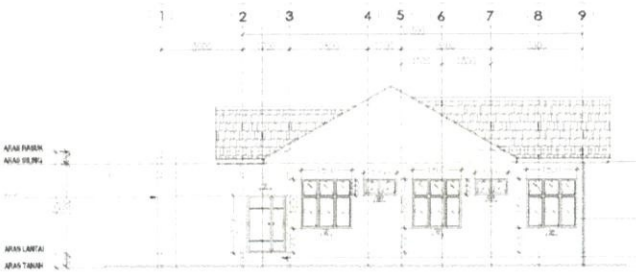
Front Elevation



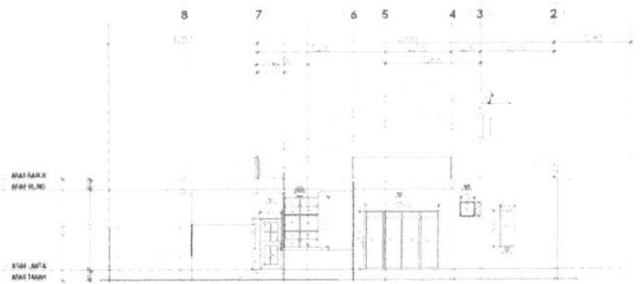
Left Elevation



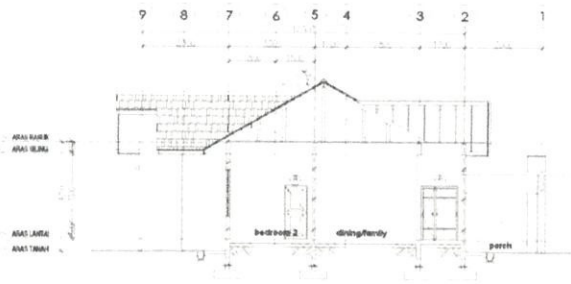
Left Elevation



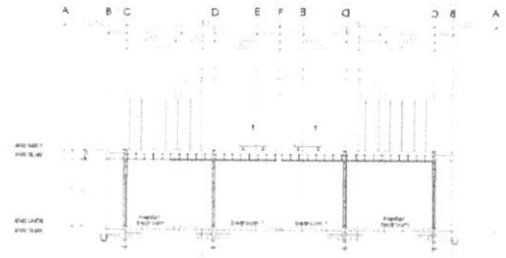
Right Elevation



Right Elevation



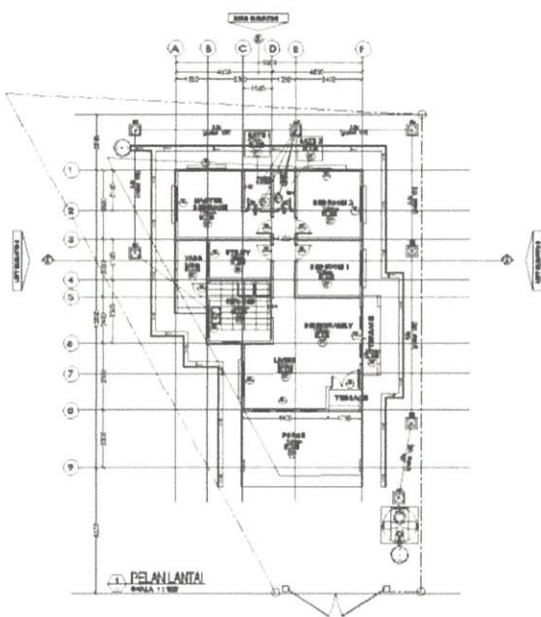
Section A-A



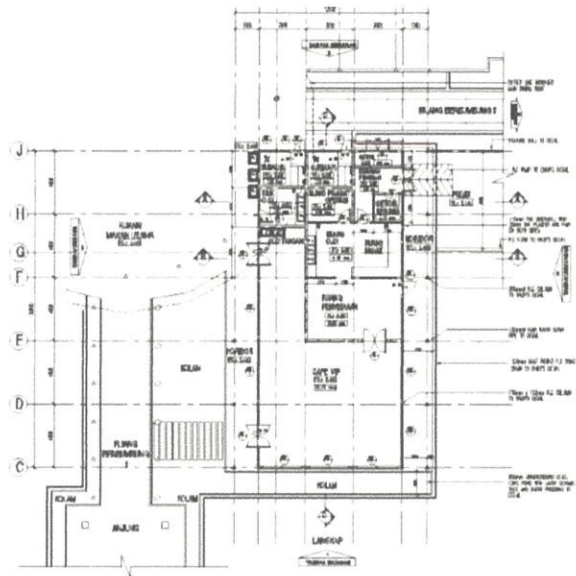
Section B-B

Cadangan membina dan menyiapkan projek Semi D di mukim kerteh, Kemaman ,Terengganu, Terengganu Darul Iman.

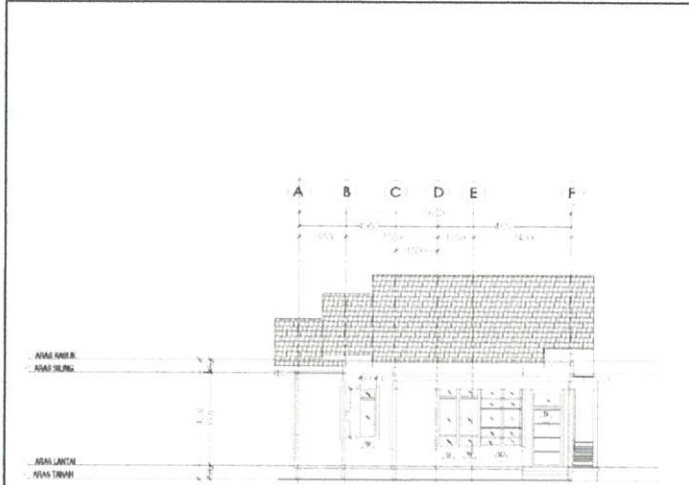
Tawaran semula cadangan membina dan menyiapkan laman selera di dalam taman berserta kemudahan Rekreasi di Universiti Sultan Zainal Abidin , (UNISZA) Kampus Gong Badak ,21300 Kuala Terengganu, Terengganu Darul Iman .



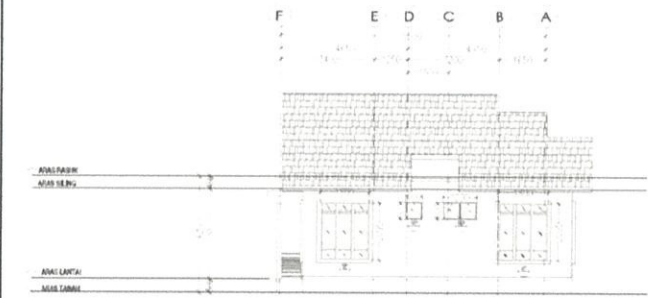
Floor pelan



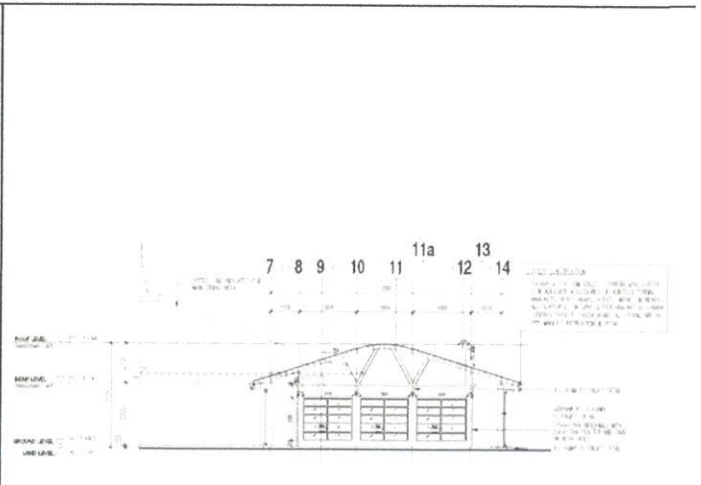
Floor pelan



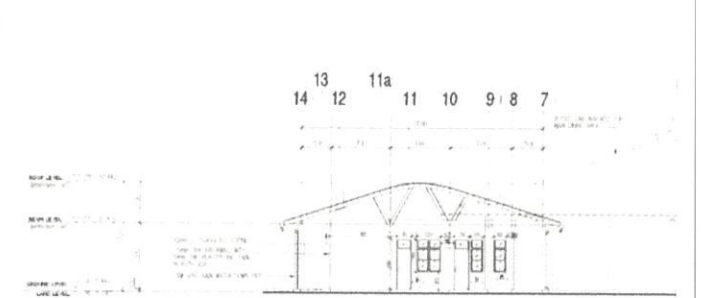
Front Elevation



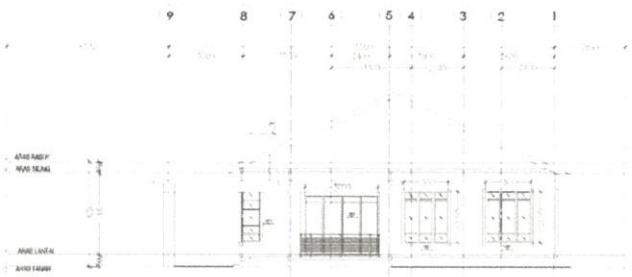
Rear Elevation



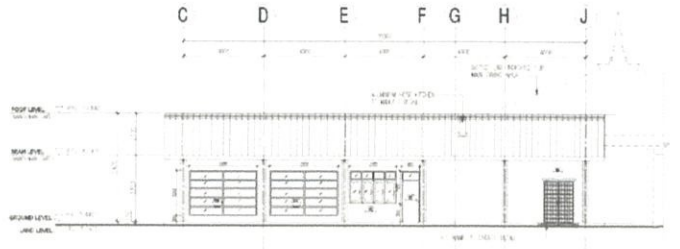
Front Elevation



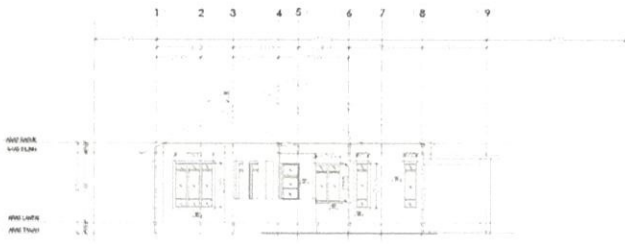
Front Elevation



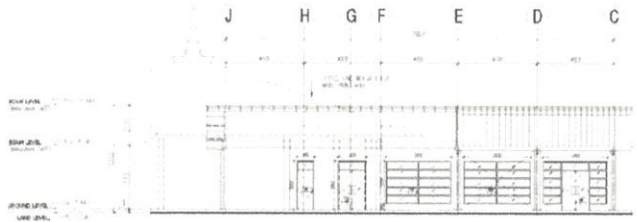
Right Elevation



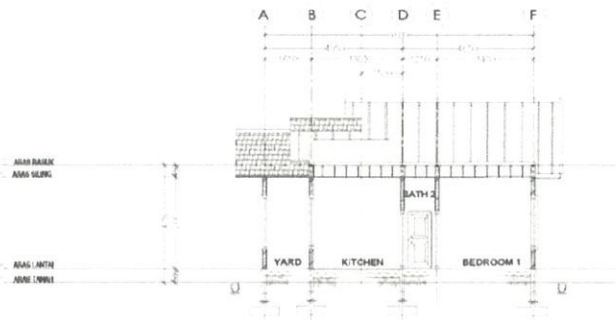
Right Elevation



Left Elevation



Left Elevation



Section B-B

4.2 Example of Sketch up / Render File

Design A (Bungalow house)



Front view

Design B (Bungalow house)



Front view



Perspective view



Rear view



Edited view



Right view



Up view



Rear view



Second view



Other colour concept and landscape



Other view



Rear view



Perspective view

Design C (Bungalow house)



Front view

Design D (Bungalow House)



Left view



Left view



Rear view



Rear view



Front view



Other view



Right view

Design E (Bungalow house)



Front view

Design F (Bungalow House)



Front view



Left view



Rear view



Perspective view



Perspective view



Rear view



Next view



Up view



Back door view

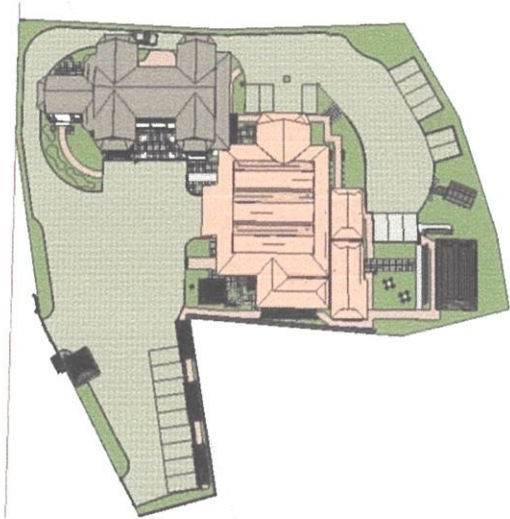


Side view

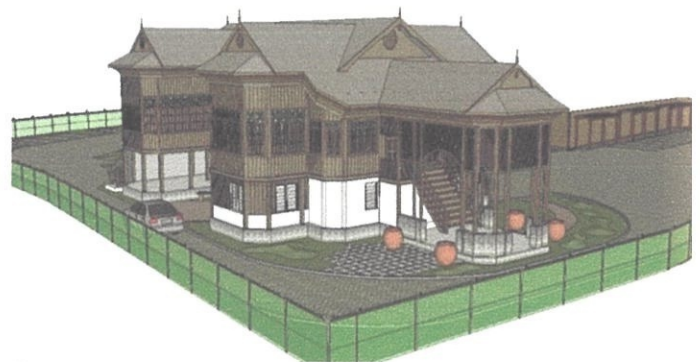
The side work that I have been done that doing in the 3D model such as **Rumah Haji Su at Kg Losong**, Kuala Terengganu, Terengganu Darul Iman.



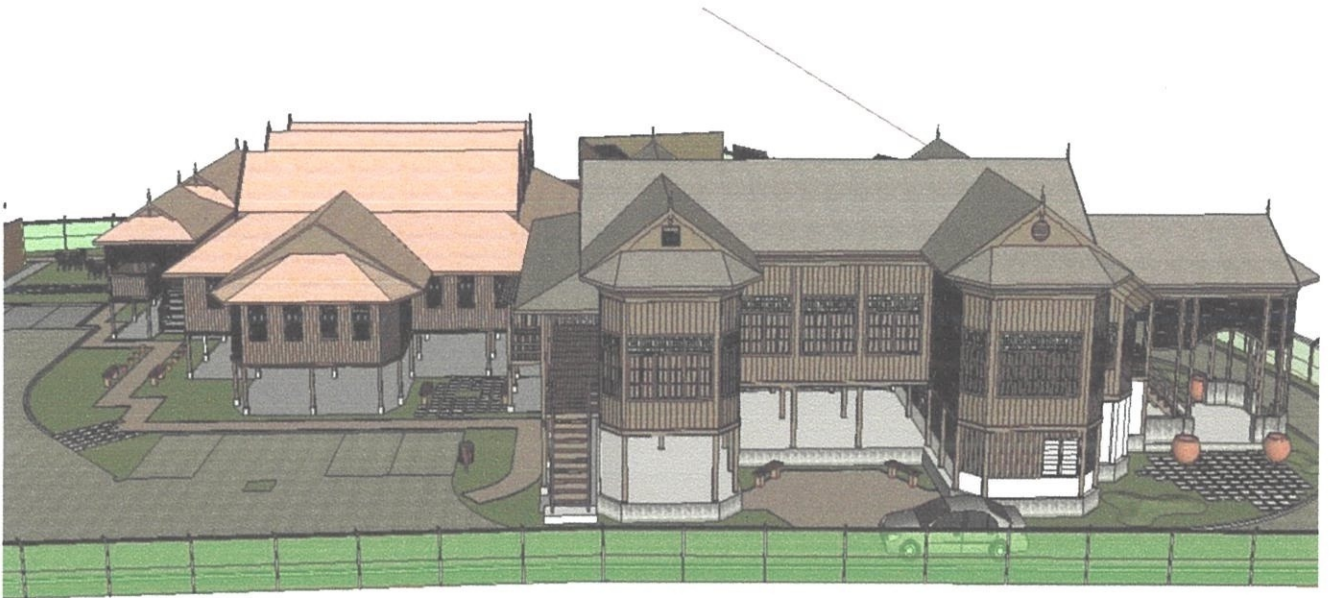
Front view



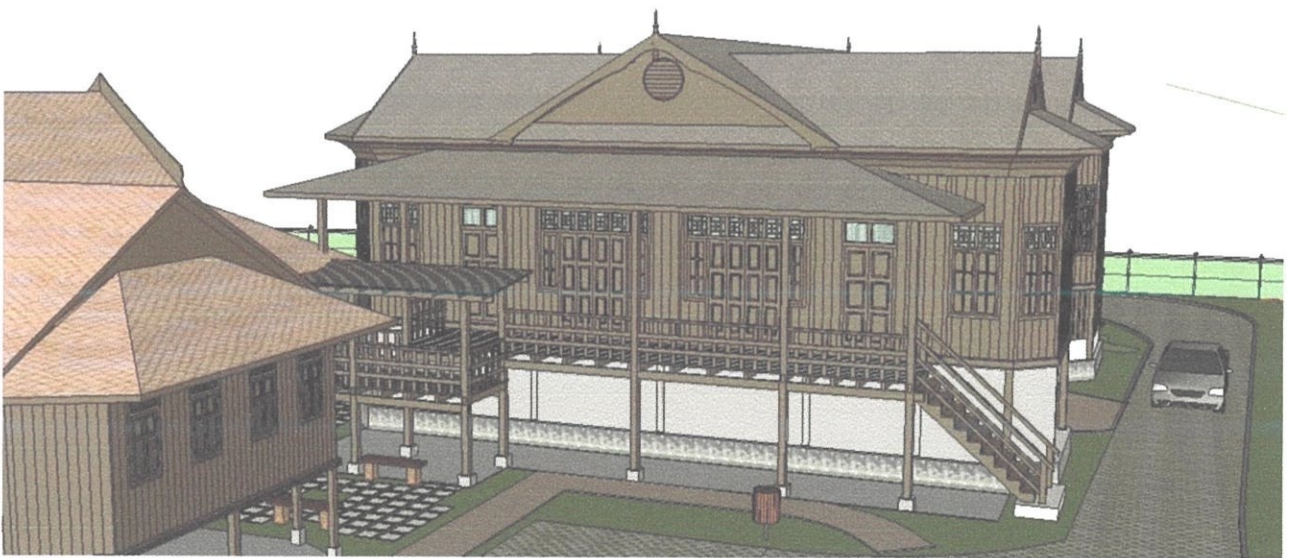
The site pelan



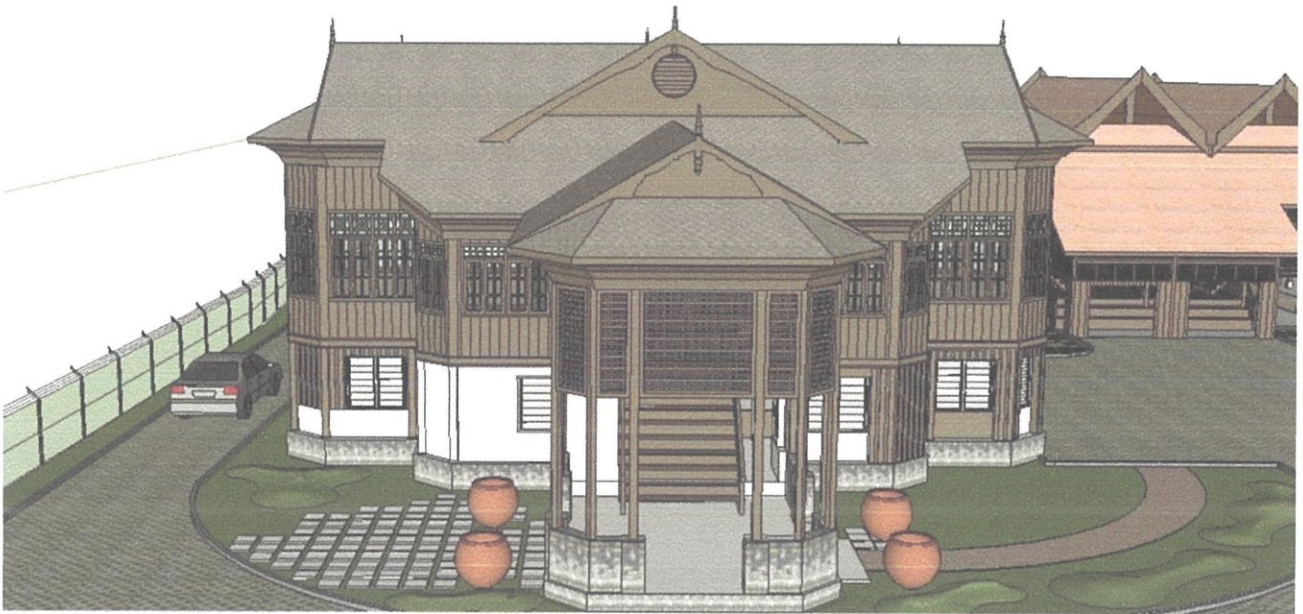
Rumah Haji Su



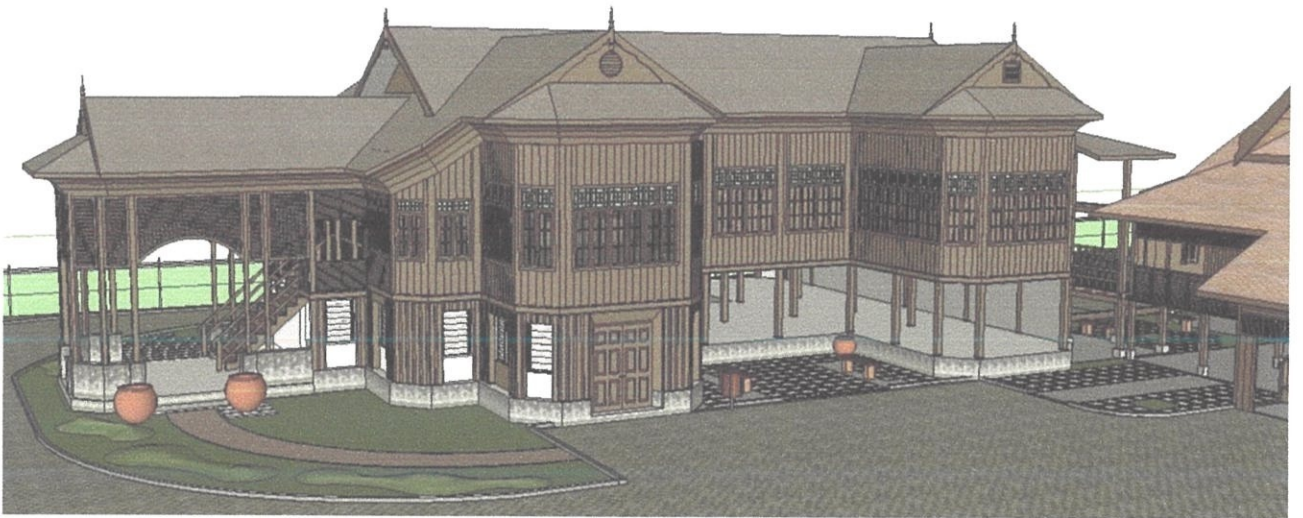
Left view Elevation of Rumah Haji Su



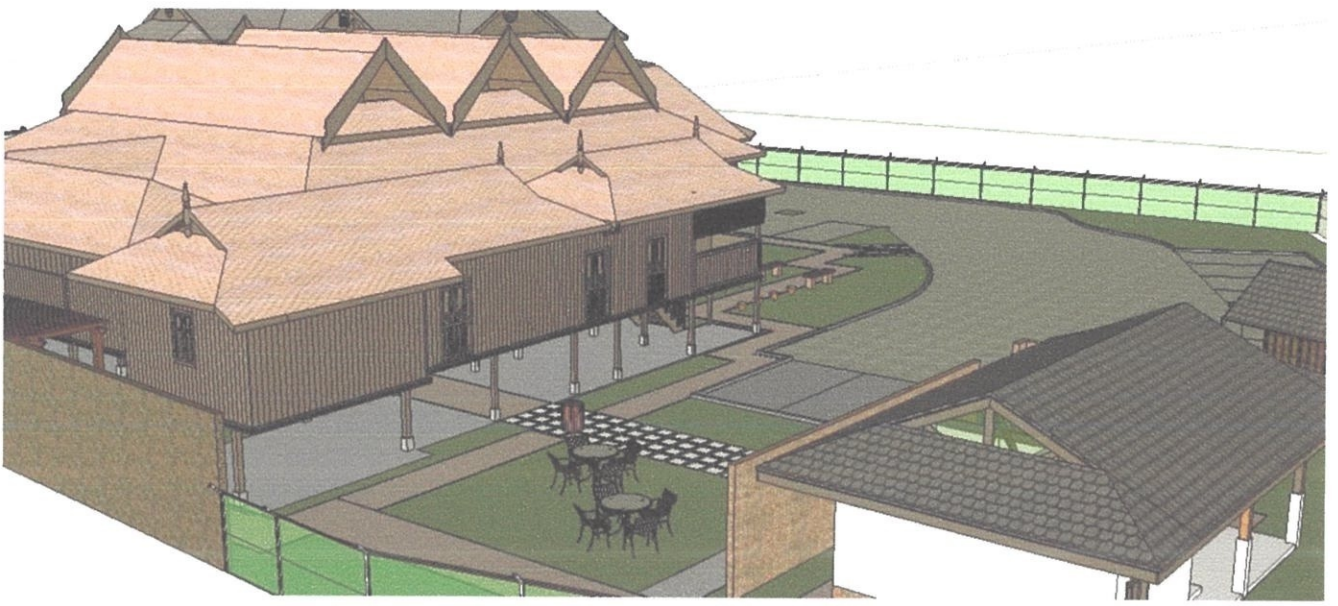
Rear view of the Rumah Haji Su



Front view of the Rumah Haji Su



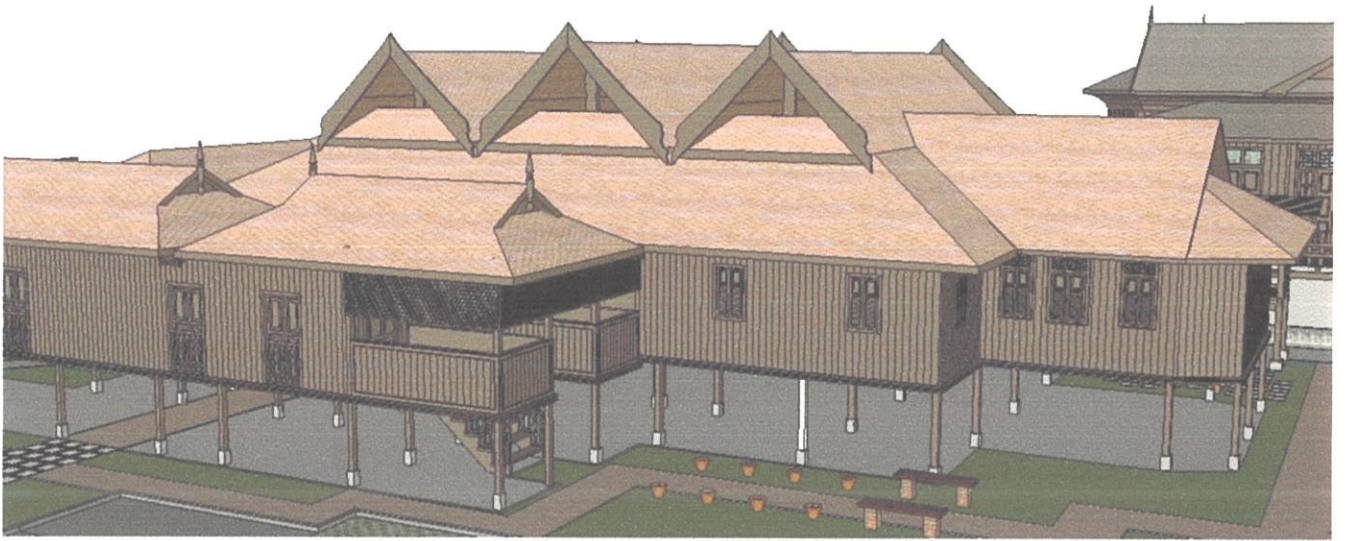
Right view of the Rumah Haji su



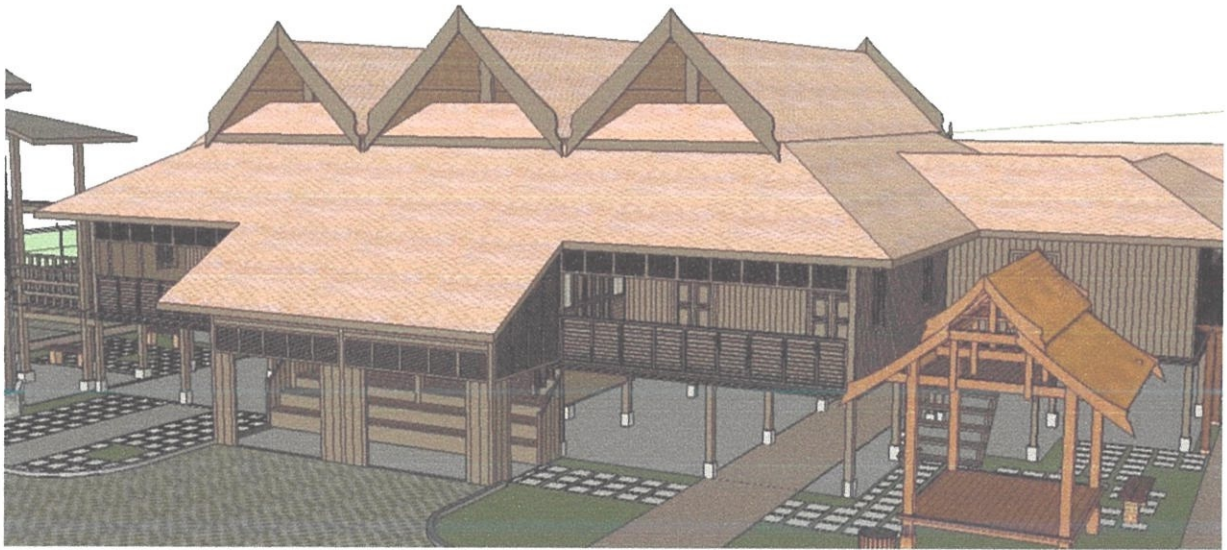
Additional Building



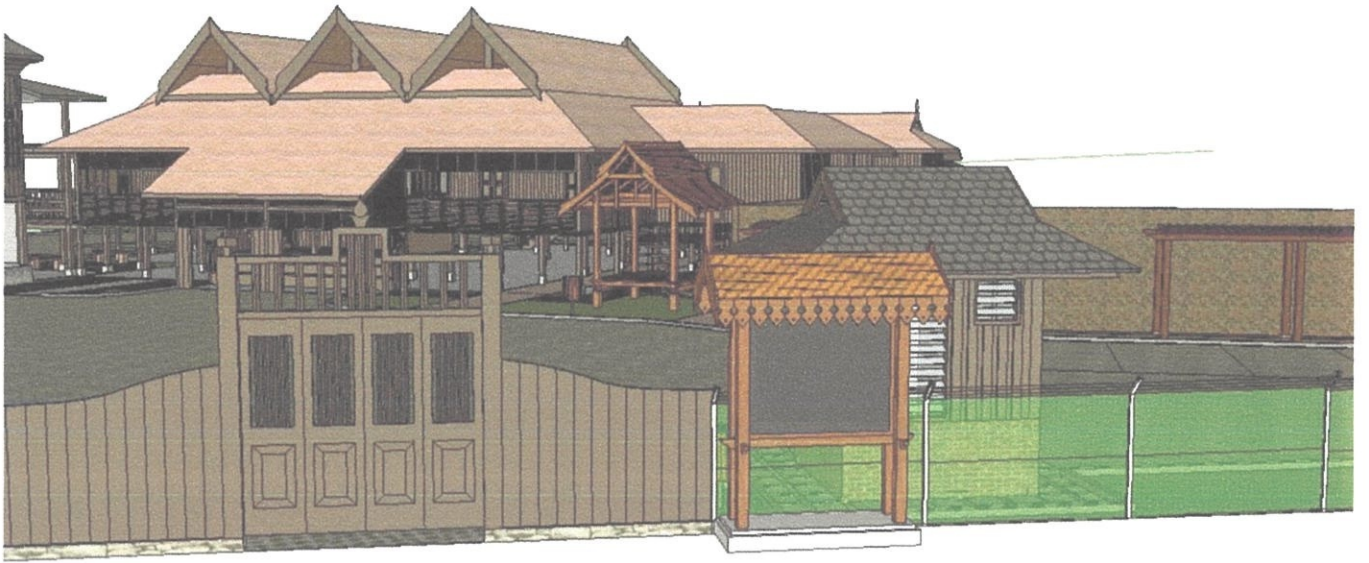
The Café for visitor and the Rumah Padi



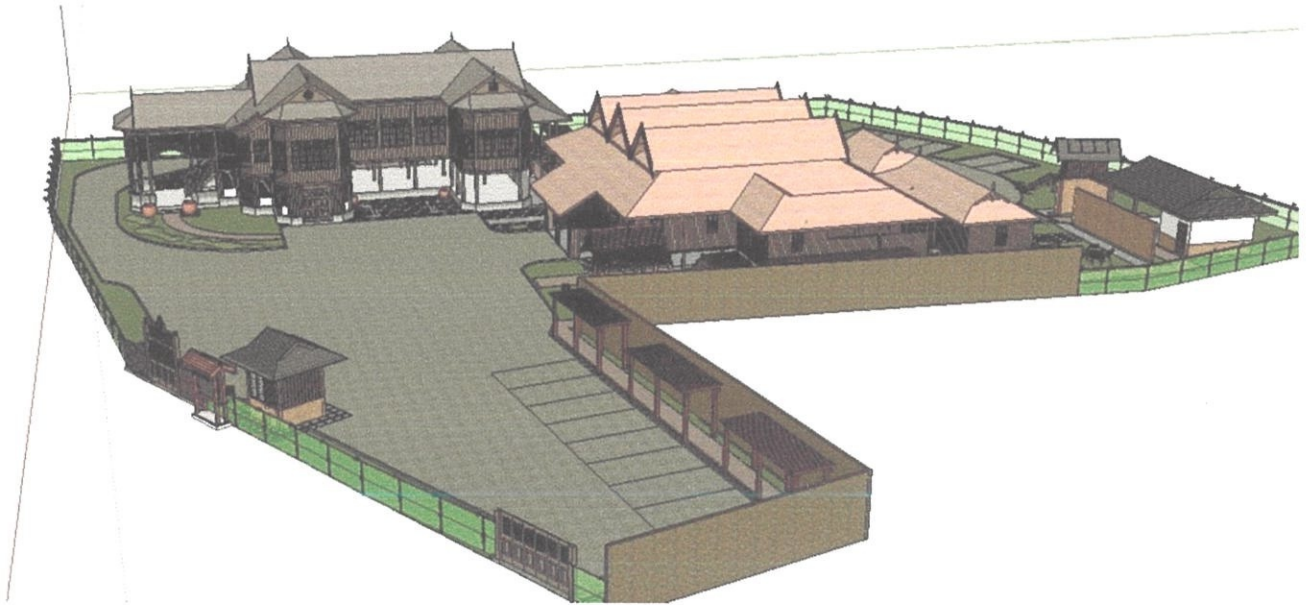
The muzium



The Front of muzium



The Entrance to the Rumah Haji Su



Top view for the site pelan

