FACULTY OF ARCHITECHTURE PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

CAWANGAN PERAK

KAMPUS SERI ISKANDAR

"SUPER – STRUCTURE"

DECEMBER 2016 – APRIL 2017

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

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DECLARATION

I hereby admit that this report is the results of my own efforts except for the certain parts that are attached from sources that specified in references chapter.

Prepared By:

……

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UiTM Seri Iskandar, perak

Approved By:

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Supervisor Lecturer

ACKNOLEDGEMENT

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

I would like to extend my highest heartfelt gratitude for the guidance, advice and help rendered throughout the period of training by the following group of an amazing individuals. First and foremost, my special thanks with highest grateful to my beloved parents for always supporting me and sacrificing over the years to raised me as now as I am.i also would like to thanks to Mrs.Arbaiah binti Shamsudin as the Projecy Manager for the opportunity given, to conduct and supervised my training in her company. Her team of professional leads by Suhaila binti Mustapha Kamal and Mohd Hafiz bin Mohd Salleh as the Engineer, Nurul Jannah binti Zakaria as the technician, and Waryono as the Site – Supervisor, have enable me to learn and develop my understanding, knowledge and feel of real time projects, and the theory involved in analysis of structure, building and civil works. They are also responsible towards streamlining and assessing my training. It is an honour for me to be given the opportunity to "work" under all of you. I would like to express my gratitude to all of the workers in Larisan Maju Sdn.Bhd. and my fellow friends for the supporting and willingness to spend some time with me.

I also want to thank all the UiTM lecturers that have thought and well teaching by pour all the knowledge and experiences in order to make me becoming a better students and person. I also would like to extend my deepest appreciation to the lecturers who were directly involved during my practical training sessions. To Sr.Dr.Mohd Azian Zaidi, Supervising Lecturer, Sr.Mohd Nur Faisal bin Baharuddin, Practical Training Coordinator, I value the time effort, encouragement and ideas that they have contributed towards the successful completion of my

training, this report and the valuable knowledge that have been shared over the last few semesters.

Thank you so much.

ABSTRACT

The objectives of this study was to identified related process or method of the construction of the “Super Structure” system on my case study, provide basic concept for physical structure and procedures. Therefore, to identified related process on material that been used for “Super – Structure” system on my case study.

COMPANY BACKGROUND

INTRODUCTION

Construction developers or project owners comprise both the owner and contractor development project. In either capacity, developers have certain obligations should be clearly stated in the contract documents. The probability of a successful completion of the project can be enhanced if the measure was included. If the first step is not included, the chance for delays and enable increased conflict.

Companies Larisan Maju Sdn. Bhd. was established on September 21, 2002. The purpose of the Company is established as the Housing Developers and Building Contractors. PKK Class A license, and Bumiputra status and licensed CIDB G7 Class. Located at No12, Jalan Bunga Matahari, Taman pertama Fasa 4, 45200 Sabak Bernam, Selangor Darul Ehsan.

PROPERTY DISCRIPTION

Company name	:	LARISAN MAJU SDN BHD
No. Registration	:	559562-A
Registration Adress	:	SUITE B, 1ST FLOOR. WISMA HUP TAI, NO. 1 LORONG RAJA BOT, 41400 KLANG, SELANGOR DARUL EHSAN.
Business Adress	:	NO.12 JALAN BUNGA MATAHARI, TAMAN PERTAMA FASA 4, 45200 SABAK BERNAM, SELANGOR DARUL EHSAN.
No. Phone	:	03-32161334
No. Fax	:	03-32161456
Email	:	larisanmaju@yahoo.com
Date of Establishment	:	21 SEPTEMBER 2002
Name & Adress of accountants	:	K. B. TAN & CO. , 2ND FLOOR, WISMA HUP TAI, NO.1, LORONG RAJA BOT, 41400 KLANG, SELANGOR DARUL EHSAN.
No. Phone & Fax	:	03-33422791 / 33420119 & 03-33430370
Name & Address company secretary	:	BT MANAGEMENT SERVICES SDN BHD SUITE B, 1ST FLOOR. WISMA HUP TAI, NO. 1 LORONG RAJA BOT, 41400 KLANG, SELANGOR DARUL EHSAN.
No. Phone & Fax	:	03-33419661 & 03-3342011

Name & Address		
Advisor Law	:	TETUAN WAN SHARIFAH JAMILAH & PARTNERS PEGUAMBELA & PEGUAMCARA NO. 14, GROUND FLOOR, JALAN BEDENA 2/1, JALAN BEDENA 2, 45300 SUNGAI BESAR, SELANGOR DARUL EHSAN.
No. Phone & fax	:	011-12419496
Email	:	wsjpsb@yahoo.com

SHAREHOLDERS OF THE COMPANY

BIL	NAME AND ADRESS	NO. K/P	SHARE (RM)
1.	ARBAIAH BINTI SHAMSUDDIN LOT 44, BATU 3/4 , JALAN KALABAKAN, 45200 SABAK BERNAM, SELANGOR DARUL EHSAN.	691220-08-5356	525,000.00
2.	LIAN BOK SAN NO. 33, JALAN BUNGA RAYA, TAMAN PERTAMA, 45200 SABAK BERNAM, SELANGOR DARUL EHSAN.	520123-10-5435	225,000.00

Table i : Shareholders of the Company

LICENSE COMPANY REGISTRATION

Figure i : CIDB Malaysia

Figure ii : labor contractor certificate

Figure iii : CIDB registration certificate

LOCATION PLAN

Figure iv : Key Plan

Figure v : Site Plan

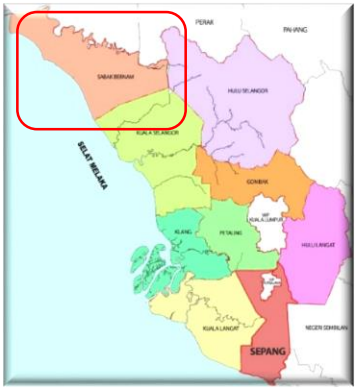

Figure vi : Location Plan

COMPANY ORGANIZATION

OBJECTIVE

- Boost economic and socio-economic development of the state
- Accelerate industrial and commercial development in the district

VISION

- To be dynamic, viable and global-minded developer to growth the community in Sabak Bernam.

MISSION

- To act as a prime mover to the state economic growth at Sabak Bernam, Selangor
- To act as a Trustee for the Bumiputera economic developer.
- To develop the Bumiputera Commercial Community.

ORGANIZATION STRUCTURE

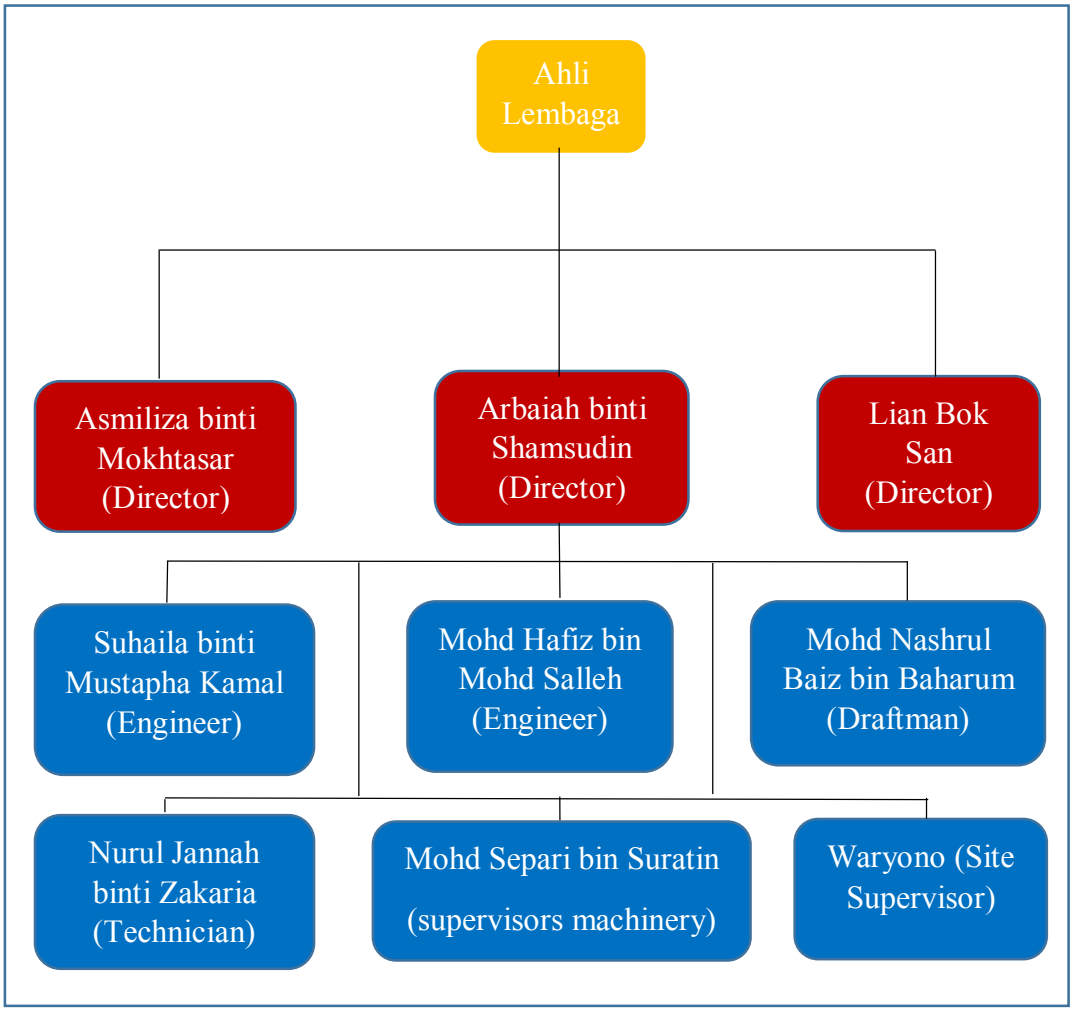

Table ii : Organization Structure

CHAPTER 1

LITERATURE REVIEW

1.1 INTRODUCTION

A superstructure is an upward extension of an existing structure above a baseline both internally and externally. This definition is applied to various kinds of physical structures such as buildings, bridges, or ships. In architecture, a structure is a body or form of a system that capable of supporting loads. Built structures are composed of structural elements such as columns, beams and trusses.

Super – structure also known as structural element that is capable of withstanding load primarily by resisting bending and allows transmits, through compression, the weight of the structure above such as dead loads and life loads in the building to other structural elements below. This term applied to allow distribute the loads of the building through column and pillar to the ground. Primary elements is basically reinforcement bar and concrete that basically components of the building carcass above the substructure excluding secondary elements, finishes, services and fittings. Secondary elements is internally and externally of the structure including completion around and within openings in primary elements.

I have been doing research about construction of "Super – Structure" Semi-D 2 storey house. In this report, it is consist of method of construction and also material that been used in order to achieve results the construction of Super – Structure that is capable of withstanding load primarily by resisting bending and allows transmits, through compression, the weight of the structure above. This report is the results of my research within my practical training session in 4 month at company Larisan Maju Sdn.Bhd.

1.2 PREFACE

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

I would like to extend my highest heartfelt gratitude for the guidance, advice and help rendered throughout the period of training by the following group of an amazing individuals. First and foremost, my special thanks to Mrs.Arbaiah binti Shamsudin as the Project Manager for the opportunity given, to conduct and supervised my training in exposing me to her project in industry of construction. Her team of professional leads by Suhaila binti Mustapha Kamal and Mohd Hafiz bin Mohd Salleh as the Engineer, Nurul Jannah binti Zakaria as the technician, and Waryono as the Site – Supervisor, have enable me to learn and develop my understanding, knowledge and feel of real time projects, and the theory involved in analysis of structure, building and civil works either directly or indirectly. They are also responsible towards streamlining and assessing my training. It is an honour for me to be given the opportunity to "work" under all of you. I would like to express my gratitude to all of the workers in Larisan Maju Sdn.Bhd. and my fellow friends for the supporting and willingness to spend some time with me and be interviewing by me in order to helping me to completing my practical report.

1.3 OBJECTIVES

1) To identified related process or method of the construction of the “Super Structure” system on my case study.
2) To identified related process on material that been used for “Super – Structure” process on my case study.

1.4 SCOPE AND LIMITATION

1) In this report, there will be just an explanation and detail only about construction that related to my case study. This is because scope of construction are too big regard to the type, material and method that been used for each of construction projects.

3) The limitation in this report, there are no explanation and details about:

- Sub – Structure.
- Piping systems.
- Electrical system.
- Landscape Architecture.
- Any types, materials, and methods of construction that are not related to the case study.
- Building condition assessments.
- Building Services.

1.5 SCOPE OF STUDY

For this organization, there are a team or department that also carry their own objectives and works that in charge to managed the site where in order to supervised and monitoring the quality of works of labour that commonly been given task to handle each block of the construction.

In this chapter under Scope of study will be explained about my task and responsibility at site that have been given to me by the organization of the company indirectly allow me to study and exposed to industry of construction. The scope of work that been carried out is in order to supervised and managed the site by monitoring worker and operation of works. Monitors more on structure of the building towards the quality of works of labours. In addition, I also carried out scope of work in helping to supervised on structural works that includes formworks, steel works, and concreting works that compulsory to be checked exactly same with the architecture and engineering plan.

1.6 METHOD OF STUDY

In this Part to, I will explain the methods of research that I have conducted as early in the process of carrying out their duties to ensure the success of this report. Among the measures taken was to interview the expert bodies of the company or related professional work force "super- structure". Besides that, I also interviewed directly or indirectly to a skilled labor in the construction site to get more information or issues related to "super - structure". Furthermore, I also applied the knowledge that I learned in college coaching as well as research and reading on the internet and reference books for me to make the comparison between the facts and the real situation on the construction site. Therefore, I use learning techniques that are indirectly supported the observation method to identify the method and material used in order to construct “Super – Structure”

CHAPTER 2

CASE STUDY

2.1 INTRODUCTION OF PROJECT

In 2017, Companies Larisan Maju Sdn. Bhd. has 3 construction site project whereby consist housing and shop lot. The developments of the project are loacated in district Sabak Bernam. In my report, I choose one of the construction site housing development that located in Lot 8611, Jalan Bunga Kekwa, Taman Pertama, Sabak Bernam, Selangor Darul Ehsan.

The concept of the building were design in "Semi-D Modern Design" style that consist of scale 63' X 50' housing project. The building concept are combination between 2 house or building (Semi-D), flat roof, and rectangle based design of conceptual. In my case study, there also have 3 type of house that different 3 design of the facade of the building and also the building plan. The building also consist 1 Master bedroom, 3 bedroom, 5 bathroom, 1 living room, 1 kitchen, and 1 dining room. However, the construction method starting from "Sub-structure" to "Super-Structure" are exactly same between one and another.

Figure 2.1.1: 3D view of the house

Figure 2.1.2: Actual view of the house

2.2 LOCATION

2.2.1 KEY PLAN

Figure 2.2.1: key plan

2.2.2 LOCATION PLAN

Figure 2.2.2: location plan

2.2.3 SITE PLAN

Figure 2.2.3: site plan

CHAPTER 3

3.1 INTRODUCTION

A superstructure is an upward extension of an existing structure above a baseline both internally and externally. This definition is applied to various kinds of physical structures such as buildings, bridges, or ships.

In architecture, a structure is a body or form of a system that capable of supporting loads. Built structures are composed of structural elements such as columns, beams and trusses.

Primary elements is basically components of the building carcass above the substructure excluding secondary elements, finishes, services and fittings. Secondary elements is internally and externally of the structure including completion around and within openings in primary elements.

Super – structure is a structural element that is capable of withstanding load primarily by resisting bending and allows transmits, through compression, the weight of the structure above such as dead loads and life loads in the building to other structural elements below. This term applied to allow distribute the loads of the building through column and pillar to the ground. Primary elements is basically reinforcement bar and concrete.

3.2 GROUND BEAM

A beam is a horizontal structural element that is capable of withstanding load primarily by resisting bending. A beam are the mostly primarily parts of structure that support any loads in the building such as dead loads and life loads in the building. Primary elements is basically reinforcement bar and concrete. Selection on size of reinforcement steel and grade of concrete are include to be consider to calculate the strength of the beam to withstanding load and to preventing from bending.

Figure 3.2.1: Ground beam

CONSTRUCTION METHOD

The ground beam construction will be started above a column stump has finish. There is also have situation whereby the ground beam started after pile cap has finish. After the column stump or pile cap has ingrained in foundation and has corpulent on level as wanted.

Beam framework will put and pointed stake set in the ground with tidy so that look tough and strength. Strength of framework is important to ensure that framework not expand when a concrete will instill. If framework not good, it will give a problem and the construction work have much time.

After that, link concrete is lain out on ground surface into the framework. The reinforcements will be putted with spacer block on below and beside reinforcement. Purpose that putted the spacer block is to protect the reinforcement for avoid from rust or from touching formwork that will be leads the reinforcement come off on the outside of the concrete surface. A joint between two crossing beams and a column at ground beam level. Note that reinforcement must clear each other and adequate space must remain for proper consolidation of concrete.

Figure 3.2.2: formwork

Figure 3.2.3: steel bar and link in ground beam

3.3 FLOOR SLAB

A floor is the walking surface of a room or space to provide means for movement between different space and another. Floors may be stone, wood, bamboo, metal, or any other material that can hold a person's weight.

Cast in-situ slab comprise of slabs supported by the reinforcement beams. The beams provide the strength and stiffness required that capable of withstanding load primarily by resisting bending and distribute the loads through the column or pillar. The number of beams utilised is dependent upon several factors, such as the width of the beams and the slenderness of the beams. Formwork for suspended floor slab is more complicated that required for solid or voided slab decks.

For my case study, the building floor slab consist of different two types method using. The selection methods are cast in-situ slab for ground floor slab, and delivery order (D.O.) concrete from factory that have been selected the grade of the concrete.

Figure 3.3.1: floor slab

3.3.1 GROUND FLOOR SLAB

CONSTRUCTION METHOD

First and foremost, formwork for slab must be install and marking the formwork for purpose achieves flat surfaces. Then, 10 cm thick clean sand pour over ground to be compacting and consolidation at the same level top of the beam. Purpose that putted the sand is to achieve durability to receive loads from the slab and distributed to the ground. Next, BRC Steel put at the top over the sand to ensure the slab gains strength and ability to distributed loads over the slabs to the ground beam. These floor consists of 2.5 cm to 5cm thick concrete layer laid over 10 cm thick base concrete to provide the strength and stiffness required that capable of withstanding load primarily by resisting bending and distribute the loads through the ground and pillar. Vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened.

Advantages of concrete floors:

- They are hard & Durrable
- Provide a smooth & non – absorbent surface
- They are more fire resistant
- They provide more sanitary surface as they can be cleaned & washed easily.
- They are economical as they require negligible maintenance cost
- They can be finished with a pleasing appearance.

3.3.2 SUSPENDED FLOOR SLAB

CONSTRUCTION METHOD

First and foremost, scaffolding must be installs together with soffit and struts. The installation must be marking same level from one to another. In addition, formwork for slab must be install and marking the formwork for purpose achieves flat surfaces. Next, BRC Steel and reinforcement will be put at the top over the formwork boarding to ensure the slab gains strength and ability to distributed loads over the slabs to the ground beam.

The reinforcements will be putted with spacer block on below reinforcement. Purpose that putted the spacer block is to protect the reinforcement for avoid from rust or from touching formwork that will be leads the reinforcement come off on the outside of the concrete surface.

These floor consists of 7.5 cm and above thick of the concrete layer laid over the formwork due the thickness design of the floor slab. Vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened.

Figure 3.3.2.1: scaffoldings

Figure 3.3.2.2: BRC Steel

Figure 3.3.2.3: spacer block

3.4 COLUMN

A column or pillar in architecture is a vertical structural element that transmits, through compression, the weight of the structure above to other structural elements below. This term applied to allow distribute the loads of the building through column and pillar to the ground. This term are the most common construction that been applied to vary projects because of the capability. This type of construction allow to construct high – rise building form 5 storey and above.

For my case study, this term are also applied to construct the project. The basic of the building were designated based on frame construction that basically instead of column and pillar. Therefore, the design of an unload bearing wall can gives the owner of the building an opportunity to make a renovation towards the building.

Figure 3.4.1: RC Column

Figure 3.4.2: Formwork

CONSTRUCTION METHOD

Preparing a column process starting from tying the reinforcement steel together with the Link. The purpose of the link is to strengthen the column alignment with the exposed rectangular of the column. After reinforcement is completely assembled and lowered into its final position, formwork is tied and braced is install for tighten the formwork maintain column size and alignment. Next, column stubs are casted, column reinforcement between ground level and first floor is assembled, column forms are erected, and ground floor columns are casted. Concrete is pour to the formwork. Struts and soffit are been provided for the strength and stiffness required that capable of withstanding load primarily of the concrete before its mature. Vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened.

Figure 3.4.3: Reinforcement bars and link

Figure 3.4.4: Formwork of column

Figure 3.4.5: struts and soffits

3.5 STAIRCASE

A staircase is a number of steps leading from one level to another, the function of which is to provide means for movement between different levels.

Staircase is a primary method of vertical circulation in most private residences and even in public where elevators or escalators are present. In elevatored building, building codes will require a minimum number of enclosed exit stairs. Stairs construction is typically wood, metal, or concrete, or a combination of all three.

A reinforced concrete staircase is one of the most commonly preferred stairs in building construction. A reinforced concrete stair which has better resistance to damage by fire than the conventional timber stairs is used for access and means of escape stairs the most building of more than two storey.

3.5.1: staircase

FUNCTION

The functions of staircase are:

1. For access or movement of people from floor to another floor.
2. For escape from upper floor in case of fire.

Functional requirements

1. Strength and Stability

Stairs, like the floors they link, must carry loads, not only the weight of people using but also the weight of any furniture or equipment being carried up or down them.

2. Fire Resistance

Apart from the function of the stairs itself as a means of escape in the event of fire during which its structural integrity must be maintained, the staircase links the floors throughout a building and can act as a path by which fire can spread from floor to floor.

3. Sound Insulation

As a stairs links together the various floors in a building it may transmit noise for considerable distance, particularly impact noise when the walking surfaces are finished with hard material.

CONSTRUCTION METHOD

Soffit of staircase formwork is prepared. Next, Reinforcement bars is assembled in its final location. After reinforcement is completed, it is lowered to its final position inside the formwork. The reinforcements will be putted with spacer block on below and beside reinforcement. Purpose that putted the spacer block is to protect the reinforcement for avoid from rust or from touching formwork that will be leads the reinforcement come off on the outside of the concrete surface

Ready – mix concrete is dispatched to site in mixer trucks, and is pumped its final location by a concrete pump truck and leads by crane for the purpose to extend to the location of the staircase. Staircases are casted to first floor level. Note the extra beams required at intermediate landings. Curing of concrete is essential at all stages. Vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened.

3.5.2: staircase formwork

3.5.3: Soffit and struts of staircase formwork

3.5.4: concreting work of staircase

3.5.5: vibrating process

3.6 SUSPENDED REINFORCEMENT CONCRETE BEAM

A beam is a horizontal structural element that is capable of withstanding load primarily by resisting bending. A beam are the mostly primarily parts of structure that support any loads in the building such as dead loads and life loads in the building. Primary elements is basically reinforcement bar and concrete. Selection on size of reinforcement steel and gred of concrete are include to be consider to calculate the strength of the beam to withstanding load and to preventing from bending.

Designs of the beams may require to be temporarily propped until the slabs have been cast and have gained strength. Under these conditions the self weight of the slab only acts on the structure when the scaffolding are removed, and load of the structure distributed by the composite (combined) beam and slab section.

Slender precast concrete slab panels or fibre-cement boards are sometimes used as permanent slab soffit formwork.

CONSTRUCTION METHOD

Beam Formwork basically a three sided box supported and propped in the correct position and to the desired level. The beam formwork sides have to retain the wet concrete in the required shape and be able to withstand the initial hydrostatic pressure of the wet concrete whereas the formwork soffit apart from retaining the concrete has to support the initial load of the wet concrete.

Next, Reinforcement bars is assembled in its final location. After reinforcement is completed, it is lowered to its final position inside the formwork. The reinforcements will be putted with spacer block on below and beside reinforcement. Purpose that putted the spacer block is to protect the reinforcement for avoid from rust or from touching formwork that will be leads the reinforcement come off on the outside of the concrete surface. It is essential that all joints in the formwork are constructed to prevent the escape of grout which could result in honeycombing or feather edging in the cast beam. Then, finally the set concrete until it has gained sufficient strength to be self supporting. The removal time for the formwork will vary with air temperature, humidity and consequent curing rate. Noted that vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened.

Figure 3.6.1 : struts and soffit

Figure 3.6.2 : spacer block

3.7 ROOF STRUCTURE

A roof is the covering on the uppermost part of the building. A roof protects the building and its content from effects of weather and the invasion of animals. In most countries a roof primarily protects against rain and sun. Depending upon the nature of the building, the roof may also protect against heat, sunlight, cold, snow and wind.

Flat roofs are often considered to be a simple form of construction, but unless correctly designed and constructed they can be an endless source of trouble. The slope for flat roof should below 10 degree. It is one of the modern designated roof.

On my case study, the building design of the roof construction is flat roof. The raw materials can be classified as reinforcement concrete. The reinforced concrete roofs are constructed in a similar manner to reinforced floors and may be solid. Concrete roof slabs are often reinforced with steel bars in both directions.

Works on roof can be commenced:

i. After the completion of roof beam/structural works.
ii. Or after the completion of structural and wall works.

FUNCTION OF ROOF

Roofs have to perform a number of functions as follows:

1. Weather resistance.
2. Strength
3. Durability
4. Fire resistance
5. Insulation
6. Appearance

1) **Weather resistance**

A building must be waterproof that resist the passage of moisture to the inside of the building. The slope of the roof and lap of roof coverings must be considered as well as the degree of exposure.

2) **Strength**

The roof structure of framework must be adequate strength to carry its own weight together with the superimposed loads wind and foot traffic (flat roof). Wind pressure requires special consideration where a light roof covering is laid to a low slope. The greatest suction is occurs at slope below 15˚ and this diminishes at 30˚. There are also have a situation whereby the roof is laid by DPM or CPM, this is happened for the flat roof construction.

3) **Durability**

The covering should be able to withstand atmospheric pollution, frost and other harmful conditions.

4) **Fire resistance**

The roof of a building is required to resist the spread of fire over the roof and from one building to another.

5) **Insulation**

Thermal insulation of roof is necessary to reduce heat losses (western countries) and to prevent excessive solar heat gains in hot weather, thus ensuring a reasonable standard of comfort within the building.

6) **Appearance**

Roof design can have an important influences on the appearance of a building, both in regard to the form and shape of the roof and as to the colour and texture of covering material.

CONSTRUCTION METHOD

First and foremost, scaffolding must be installs together with soffit and struts. The installation must be marking same level from one to another. In addition, formwork for slab must be install and marking the formwork for purpose achieves flat surfaces. Next, BRC Steel put at the top over the sand to ensure the slab gains strength and ability to distributed loads over the slabs to the ground beam.

Next, Reinforcement bars is assembled in its final location. After reinforcement is completed, it is lowered to its final position inside the formwork. Spacer block will be install on below and beside reinforcement. Purpose that putted the spacer block is to protect the reinforcement for avoid from rust or from touching formwork that will be leads the reinforcement come off on the outside of the concrete surface.

These floor consists of 7.5 cm and above thick of the concrete layer laid over the formwork due the thickness design of the floor slab. Vibrators are compulsory to be apply to preventing the concrete layer from hollow to be happened. Then, finally the set concrete until it has gained sufficient strength to be self supporting. The removal time for the formwork will vary with air temperature, humidity and consequent curing rate.

Figure 3.7.1: installation BRC steel

Figure 3.7.2: scaffolding

Figure 3.7.3: Roof Slab

CHAPTER 4

4.1 INTRODUCTION

The important of the development of a housing are compulsory in order to achieve the terms of a relationship among civilians and to fulfill demands of the popularity citizen of country. Development proposal submitted through purposed development plan to improve the current situation of the study area. From the analysis which has been made in previous chapter, there are problems that involving on technical and safety issues among the labor during the construction working hours. There are also issues included about management on site that been taken by the expert bodies from the company.

Thus, the issues and recommendations stated based on the observation survey will be encountered in this chapter. The recommendations will help to improve the condition and increase the outcome in order to achieve maximum results due to the management systems.

4.2 PROBLEMS

4.2.1 TECHNICAL FAILURE

In this content of the problems, some issues about the technical on formwork might happened during the concreting process. This is because the formwork not propped properly in correct position or mistaken the numbering of the wedges, bracing, struts and soffit. This issues might occur and have possibilities due to the unskilled labour work process.

4.2.2 SAFETY ON SITE

There are some serious issues due to the safety on site that I have observes. There are no “Personal Protective Equipment” (PPE) that consist of safety helmet, safety booth, safety vest, and body harness. Without all the equipment, fatal will lead on serious injuries towards the workers.

4.2.3 MANAGEMENT SYSTEM ON SITE

In this section, there are lack on management system on site that particularly not applies towards the operation stages. This terms are includes morning briefing, Key Performances Indicator (KPI), and technical forms for the inspection. This is important to analyze the progression projects and to inspect the technical works before concreting work procurements.

4.3 RECOMMENDATION

4.3.1 TECHNICAL FAILURE

In this content of the problems, to overcome issues about the technical such as on formwork during the concreting process. The numbering of the wedges, bracing, struts and soffit propped properly on formwork in correct position. This issues can be overcome and minimize the probability of the risk during the concreting process procurement.

4.3.2 SAFETY ON SITE

Due to the safety issues on site, I have observes that it is company responsibilities to hire Safety Officer to fulfill task on "Personal Protective Equipment" (PPE) that consist of safety helmet, safety booth, safety vest, and body harness. The purpose of all the equipment is to preventing and minimize fatal that will lead on serious injuries towards the workers.

4.3.3 MANAGEMENT SYSTEM ON SITE

In this section, morning briefing, Key Performances Indicator (KPI), and technical forms for the inspection must be applies towards the operation stages. This is important to analyze the progression projects and to inspect the technical works before concreting work procurements. The purpose with all the subject above is to leads and monitoring the operating process of the labour. Key Performances Indicator (KPI) purpose is to notes all the chapter of the progression works to achieve the targets of the company on analyzing the actual project and leads the accomplishment of the projects.

CHAPTER 5

5.1 CONCLUSION

From analysis that was carried out towards the case study on "Super – Structure" at project construction site housing 2 storey Semi–D development that located in Lot 8611, Jalan Bunga Kekwa, Taman Pertama, Sabak Bernam, Selangor Darul Ehsan. It shows from the analysis results that some serious issues must be overcome to achieve maximum results of the project outcome. The physical structural construction must be monitoring properly in order to preventing defects occurs and to achieving long terms uses after the "Turn – Key" process towards the owner. It is also consist to overcome the company or the developer form having lost cost of repairing work during 2 years of "Defects liability Period" (DLP). Furthermore, the management on site also must be improved to achieve maximum outcome of the projects and to reach target of the "Key Performances Indicator" (KPI). The purpose of the subject is also to preventing the company or the developer form having lost cost for the maintenance and repairing works.

REFERENCES

REFERENCES

1) ACI 318-05 Code and Commentary;
2) D. Fanella, I. Alsamsam, "The Design of Concrete Floor Systems", PCA Professional Development Series, 2005
3) http://cee.engr.ucdavis.edu/faculty/boulanger/
4) http://en.wikipedia.org/wiki/Foundation_(engineering)
5) http://www.foundationengineering.info/photo_galleries/08/footing_construction/

APPENDIX

SEMI-D HOUSE LOT 8611

TYPE C 50’ X 63’