CHAPTER 1

COMPANY PROFILE

BUILDIA HOUSING PROJECTS INDIA PVT, LTD is one of the best construction companies in Bangalore (Karnataka). focusing on construction of residential apartments, commercial and institutional projects.

A technologically advanced organisation with a vision to build quality spaces in being promoted by the Managing Director Mr. Mujahid Khan Our company has ever since emerged to be one of the prominent service providers in construction industry.

COMPANY DETAILS

Company name : **BUILDIA HOUSING PROJECTS INDIA PVT, LTD**

Email-id : info@buildiaprojects.com

Mobile number : +91-948-372-4667.

Address : NO.58, HMT LAYOUT R T NAGAR (BEHIND POLICE STATION) BANGALORE. Bangalore KA 560032 IN

Company status : Active

Company category : Company limited by Shares

Company sub category : Non-Government Company

Date of incorporation : 19-Feb, 2014

BUILDIA HOUSING PROJECTS INDIA PVT, LTD Company provides many types of construction works, site and service and is committed to provide high quality services. Our management team work in accordance with the clients requirements through its cost effective ideas, high quality and optimum utilization of resources.

Most of all, our construction company emphasizes on service and developing a trusting relationship with our customers. Our pride in workmanship, superior customer service, and unsurpassed safety records are just a few reasons to choose BUILDIA HOUSING PROJECTS INDIA PVT, LTD

OBJECTIVES OF THE COMPANY

- Undertaking and carrying out of various building construction.
- Achieving the task through disciplined work and efficient management.
- Constructing low cost housing schemes for the common man.
- Researching and experimenting to discover better and superior construction technology.
- Developing financial resources to complete the work in the stipulated time.
- Preparing model projects to demonstrate minimal wastage of materials and labour.
- To achieve quality results at a minimum cost using the best practical technology.
- Creating joint ventures through association with other companies.
- Development of new buildings management techniques for the prosperity of the organization.

CHAPTER 2

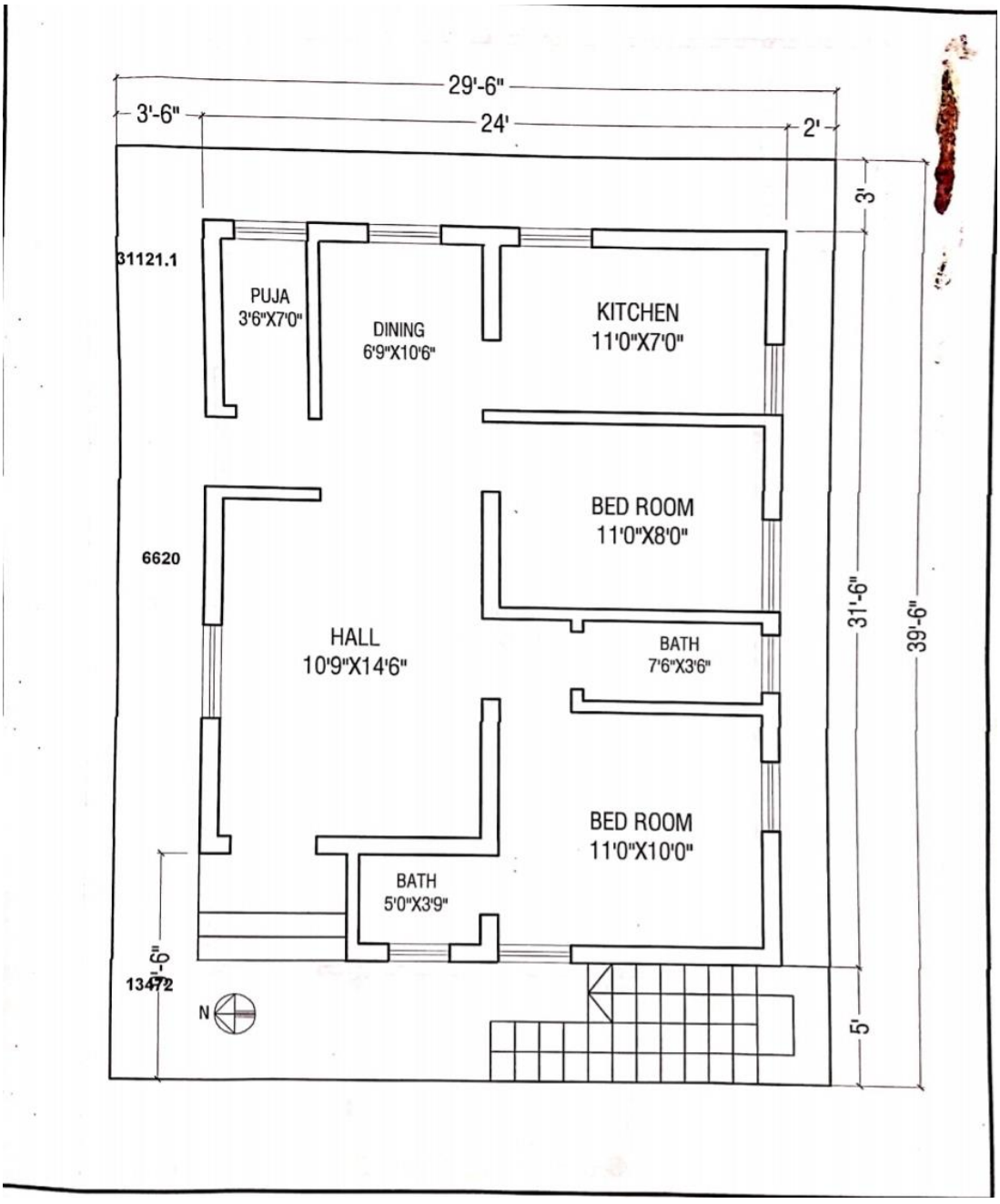
TASK PERFORMED

DATE	DESCRIPTION	REMARKS
04/07/2019 to 11/07/2019	Demand of houses and classification of building based on occupancy	Theoretical explanation on the need of houses and classification of building based on occupancy.
	Site selection	Explanation about requirement of site selection.
	Survey of site	Explanation about the surveying of site.
	Site marking	Explanation about line marking.
12/07/2019 to 18/07/2019	Excavation	Detailing about the excavation.
	Footing and Foundation	Explanation about footing and foundation.
	Column	Explanation on construction of column from the foundation.
19/07/2019 to 25/07/2019	Plinth beam	Study on plinth beam and its reinforcement.
	Back filling	Explanation on back-filling the foundation pits.
	Brick masonry	Explanation about the types of brick masonry.
26/07/2019 to 04/08/2019	Slabs	Explanation about the reinforcement and types of slabs.
	Curing	Explanation about the process of curing and effects of over curing.
	Plastering	Explanation about plastering of the walls.

CHAPTER 3

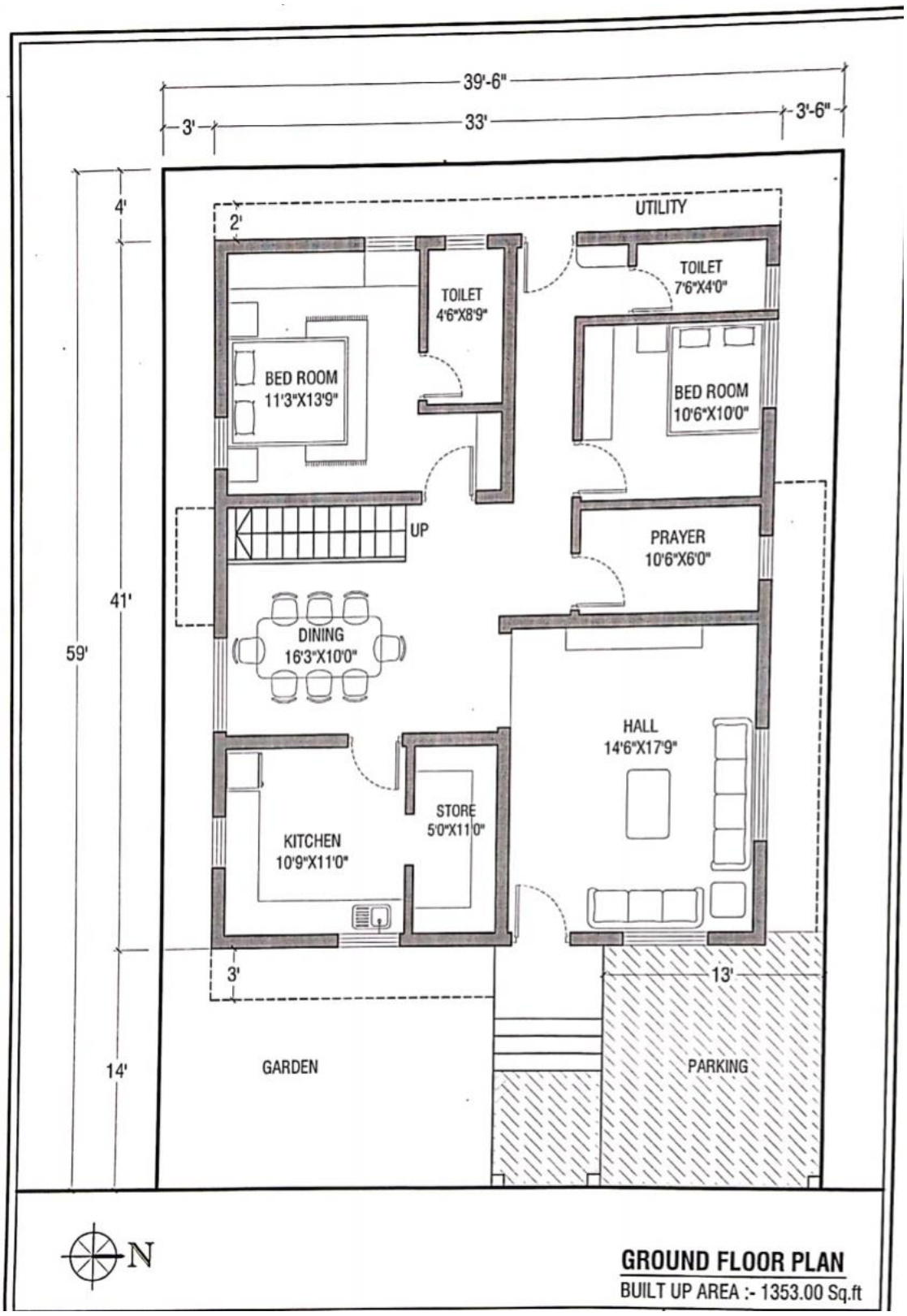
STUDY AREA DETAILS

Location:- Lakshmipura Bangalore, Karnataka



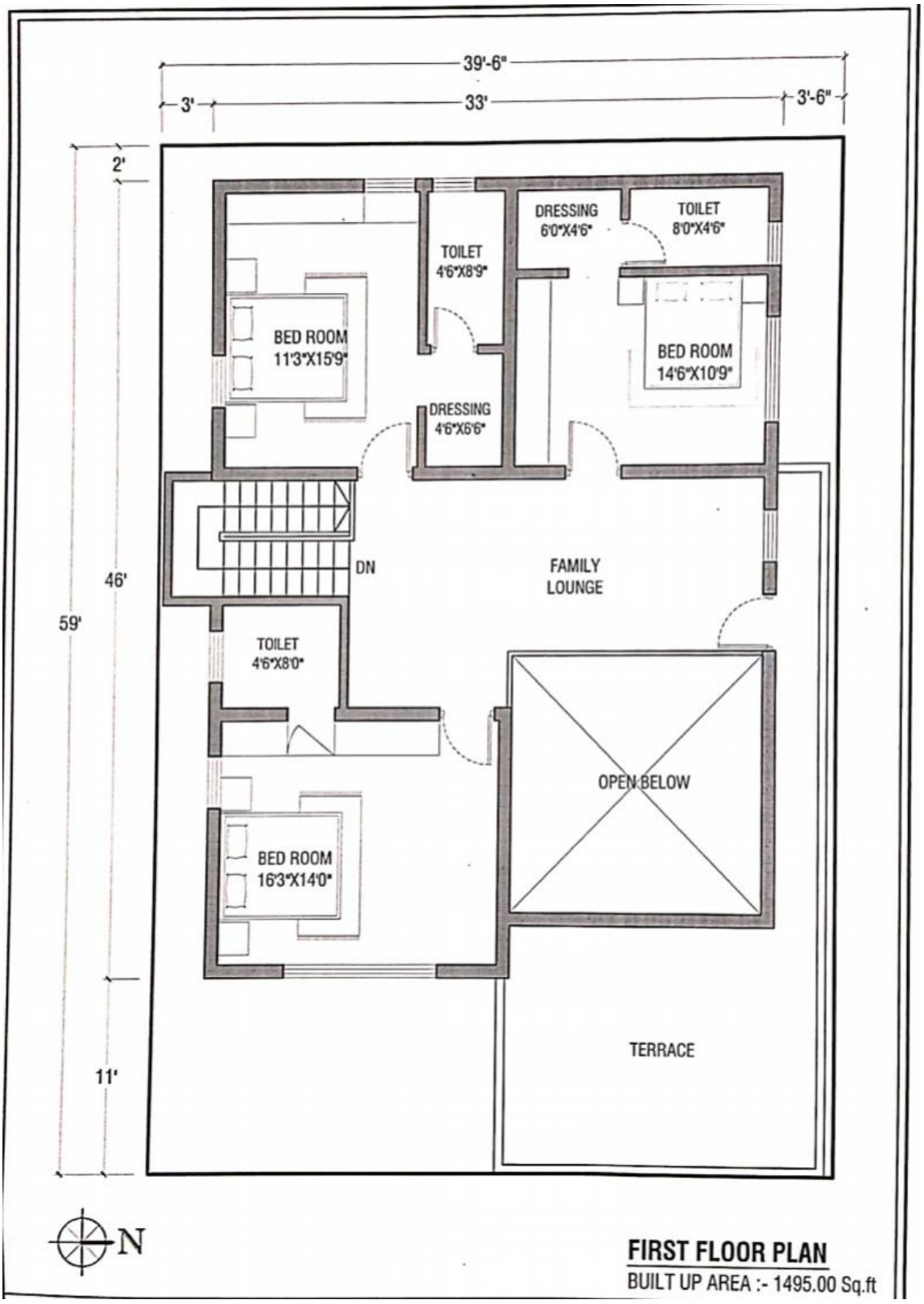
Description: To learn about the construction of the building**.**

Location: Nagasandra Bangalore, Karnataka



Description: To learn about the construction of the building**.**

Location: Rampalya Bangalore, Karnataka



Description: To learn about the construction of the building**.**

CHAPTER 4

INTERNSHIP ACTIVITIES

4.1. WEEK 1 ACTIVITIES

4.1.1. THEORETICAL EXPLANATION

4.1.1.1. DEMAND OF HOUSES

The house is the first unit of the society and it is the primary unit of human habitation. The house is built to grant the protection against wind, weather, and to give insurance against physical insecurity of all kinds.

The features of the demand for housing consist of in its unique nature and depend on the following factor.

- Availability of cheap finance.
- Availability of skilled labours.
- Availability of transport facility.
- Cost of labours & material of construction.
- Predictions of future demand.
- Rate of interest on investment e.g., low rates of interest with facilities of long term payment may facilities investment in housing.
- Rate of population growth and urbanization.
- Supply of developed plots at reasonable prices.
- Taxation policy on real estates.
- Town planning & environmental conditions.

4.1.1.2. CLASSIFICATION OF BUILDING BASED ON OCCUPANCY

RESIDENTIAL BUILDINGS:

These buildings include any building in which sleeping accommodation provide for normal residential purposes, with or without cooking and dining facilities. It includes single or multifamily dwellings, apartment houses, lodgings or rooming houses, restaurants, hostel, dormitories and residential hostels.

EDUCATIONAL BUILDINGS:

These include any buildings used for school, college or day-care purposes involving assembly for instruction, education or recreation and which is not covered by assembly buildings.

INSTITUTIONAL BUILDINGS:

These buildings are used for different purposes, such as medical or other treatment or care of persons suffering from physical or mental illness, diseases or infirmity, care of infants, convalescents or aged.

ASSEMBLY BUILDINGS:

These are the buildings where groups of peoples meet or gather for amusement, recreation, social, religious, assembly halls, city halls, marriage halls, museums, etc.,.

BUSINESS BUILDING:

These buildings are used for transaction of business, for keeping of accounts and records and for similar purposes, offices, banks, court houses, libraries.

INDUSTRIAL BUILDING:

These are the buildings where products or materials of all kinds and properties are fabrication, assembled, manufactured or processed, as dry cleaning plants, power plants, smoke houses, etc..

STORAGE BUILDINGS:

These buildings are used primarily for the storage or sheltering of goods, wares or merchandise, vehicles and animals, cold storage, garages, trucks.

4.1.2. SELECTION OF PLOT AND STUDY

Selection of plot is very important for building a house. Site should be in good place where there community but service is convenient but not so closed that becomes a source of inconvenience or noisy. The conventional transportation is important not only because of present need but for retention of property value in future closely related to are transportation, shopping, facilities are also necessary. One should observe the road condition whether there is indication of future development or not in case of undeveloped area.

The factors to be considered while selecting the building site are as follows:

1. Access to park and play ground.

2. Agriculture polytonality of the land.

3. Availability of public utility services, especially water, electricity and sewage disposal.

4. Contour of land in relation the building cost and cost of land.

5. Distance from place of work.

6. Ease of drainage.

7. Location with respect to school, colleges, and public buildings.

8. Nature of use of adjacent area.

9. Transport facilities.

10. Wind velocity and direction.

4.1.3. SURVEY OF THE SITE FOR PROPOSED BUILDING

Reconnaissance Survey: the following has been observed during reconnaissance survey of the site.

1. Site is located nearly.
2. The site is very clear planned without ably dry grass and other throne plants over entire area.
3. No levelling is required since the land is uniformly level.
4. The ground is soft.
5. Houses are located near by the site.

Detailed survey: The detailed survey has been done to determine the boundaries of the required area.

4.1.4. SITE MARKING

1. Site marking is one of the starting point of construction.

2. Engineer will mark the area around the pillar. Earth workers will dig the marked area.

3. Once pillar placement is identified based on soil condition earth work will start.

4. Depending on the soil condition the pillar depth will vary.

Fig 4.1 Showing Site Marking

4.2. WEEK 2 ACTIVITIES

4.2.1. EXCAVATION

Excavation is the preliminary activity of the construction project. It starts from digging pits for the building foundations and continues up to the handing over of the project.

Excavation is needed for:

- Foundations of building.
- Plinth beam / plinth masonry.
- Basement of the building.
- Underground water tank.
- Septic tank.
- Laying drainage, water lines, electric cables etc.
- Foundation of compound walls.
- Footing of main gate.
- Earthing pit, etc.

Generally, the size of the footing mainly depends on the bearing capacity of strata. During execution of work, the actual bearing capacities of the strata should be checked at the site and approval for the same be secured from the structural consultant.

Fig 4.2 Showing Excavation

4.2.2. FOOTING AND FOUNDATION

4.2.2.1. FOOTING

A footing is a foundation unit constructed in brick work, masonry or concrete under the base of a wall or a column for the purpose of distributing the load over a large area. A footing or a shallow footing is placed immediately below the lowest part of the super structure supported by it.

REINFORCEMENT OF FOOTING

Reinforcement detailing of footing is as much important as site investigation for the structural design of footing. A good detailing of reinforcement covers topics like cover to reinforcement based on environmental considerations for durability minimum reinforcement and bar diameters, proper dimensioning of footing. It is desirable foundation should be detailed in both plan and elevation in drawings.

REINFORCEMENT DETAILS

1. Depth of pit = 4’ 6”
2. Footing reinforcement = 12mm diameter bars @ 150mm c/c.
3. Size of pit = 3’8” × 3’8”.

Fig 4.3 Showing the Reinforcement of Footing

4.2.2.2. FOUNDATION

Foundation is the element of a structure which connects it to the ground, and transfers loads from the structure to the ground. Foundations are generally considered either shallow or deep.

PURPOSE OF FOUNDATION

- To distribute the weight of the structure over large area so as to avoid over loading of the soil beneath.
- To anchor the structure against the changing natural forces like earthquakes, floods, tornado or wind.
- To load the sub – stratum evenly and thus prevent unequal settlement.
- To provide a level surface for building operations.
- To take structure deep into the ground and thus increase its stability, preventing overloading.
- Specially designed foundation helps in avoiding the lateral movements of the supporting material.

REQUIREMENTS OF GOOD FOUNDATION

- The design and the construction of the foundation is done such that it can sustain as well as transmit the dead and the imposed loads to the soil. This transfer has to be carried out without resulting in any form of settlement that can result in any form of stability issues for the structure.
- Differential settlement can be avoided by having a rigid base for the foundation. These issues are more pronounced in areas where the superimposed loads are not uniform in nature.
- Based on the soil and area it is recommended to have a deeper foundation so that it can guard any form of damage or distress. These are mainly caused due to the problem of shrinkage and swelling because of temperature changes.
- The location of the foundation chosen must be an area that is not affected or influenced by future works or factors.

Fig 4.4 Showing Strap Foundation

4.2.3. COLUMN

Column is a vertical structure member. It transmits the load from roof slab and beams, including its self-weight to the foundation. Columns may be subjected to a pure compressive load. R.C.C columns are most widely used nowadays. Column transfers the load of the structure of slabs, beams above to below and finally load is transferred to the soil. Position of the column should be so that there are no tensile stresses developed at the cross sections of the columns. Columns carry axial loads and therefore are designed for compression.

COLUMN REINFORCEMENT

Column reinforcement works needs following checklist on sites:

- Spacing between vertical bars.

- Check development length which depends on diameter of bars lapping in alternate bars should come at same height.
- Lapping should not come inside beam or slab.
- Lapping should be at 1/3 or 21/3 of length of column as per structural loads.
- Spacing between stirrups is as per the drawing check the numbers and diameters of vertical bars.

Fig 4.5 Showing Colum Construction

4.3. WEEK 3 ACTIVITIES

4.3.1. PLINTH BEAM

Plinth beam is a beam in a framed structure provided at or above ground level that takes the load of the wall built on top of it. Most other beams are subjected to loads not only from walls but also the load from the slabs, such as dead loads and live loads. Plinth beam

also serve another indirect purpose – they reduce the length of the column thereby reducing their effective length and slenderness.

DETAILS OF PLINTH BEAM

1. Size of plinth beam: PB 1 - 9”×12” , PB 2 – 6”×12”
2. Reinforcement: 2 nos of 12mm diameter bars @ top.
   3 nos of 16mm diameter bars @ bottom.
   Stirrups 8mm diameter @ 200mm c/c.
3. Clear cover = 40mm.

Fig 4.6 Showing Reinforcement of Plinth Beam

4.3.2. BACK-FILLING

Back-filling is the process of putting soil back inside a trench or in a foundation when the excavation has been completed. The back-fill process requires skills and knowledge on the specifications, contact requirements and understanding soil conditions. Back-fill is a under in task such as protecting foundations, landscaping, or filling in voids in underground structures. Every soil has unique characteristics requiring different construction techniques to

ensure optimum performance. Impact loading of the pipeline, structures and apparatus must be avoided during the placement of backfill.

Fig 4.7 Showing Backfilling

4.3.3. BRICK MASONRY

Brick masonry is built with bricks bonded together with mortar. For temporary sheds mud mortar may be used but for all permanent buildings lime or cement mortars are used. The mix ratio of mortar is 1:6. Curing should be done for 10 days. Size of brick is 200×100×75mm. Cut pieces of brick should not be used in the end of the wall. The various types of bonds generally used in brick masonry are:

4.3.3.1. STRETCHER BOND

Stretcher bond is also called as running bond, is created when bricks are laid with only with their stretchers showing, overlapping midway with the courses of bricks below and above.

4.3.3.2. HEADER BOND

A header is the shorter face of the brick has seen in the elevation. In a standard brick it is 90mm×90mm face. In a header bond brick masonry all the bricks are arranged in the header course. This type of bond is useful for the construction on thick walls.

4.3.3.3. ENGLISH BOND

English bond is the alternate courses consisting of headers and stretchers. This is considered to be the strongest bond. Hence it is commonly used bond for the walls of all thickness.

4.3.3.4. FLEMISH BOND

In this type of bond each course comprises of alternate header and stretchers. Alternate courses start with header and stretcher. Every header centrally supported on the stretcher below it. Flemish bonds are may be further classified as:

1. Double Flemish bond.
2. Single Flemish bond.

Fig 4.8 Showing Brick Masonry

4.4. WEEK 4 ACTIVITIES

4.4.1. SLABS

A concrete slab is a common structural element of modern buildings. Horizontal slabs of steel reinforced concrete, typically 4” and 20” thick, are most often used to construct floors and ceilings, while thinner slabs are also used for exterior paving.

In many domestic and industrial buildings, a thick concrete slab, supported on foundations or directly on the sub-soil, is used to construct the ground floor of a building. These can either be ground bearing or suspended slabs. The slab is ground bearing if it rest directly on the foundation, otherwise the slab is suspended.

Based on length and breadth of conventional slab is classified into 2 types:

1. One way slab
2. Two way slab

ONE WAY SLAB

One way slab is a slab which is supported by beams on the two opposite sides to carry the load along one direction. In one way slab, the ratio of longer span to shorter span is equal or greater than two.

The direction in which load is transferred is known as span. A one way slab is designed for the spanning direction alone has it bends in only one direction. in the transverse direction, a minimum amount of reinforcement is provided to take care of the temperature and shrinkage effects in that direction. This steel reinforcement is called the distribution steel or secondary reinforcement.

CHECKING OF REINFORCEMENT FOR STEEL FOR THE SLABS

1. Spacing, diameter of the bent-up bars and main bars.
2. Distance of bent-up bars from the face of beam.
3. Length of the bent-up bars projecting in the adjacent panels.
4. Height of the bent-up bars.
5. Chair below every bent-up bars.
6. Covering for the slab at the bottom.
7. Proper binding of laps of the required length.
8. Distribution steel diameters, spacing and ties.
9. Check dowels of slab and beam.
10. Location, proper binding diameter and length of fan hook and quality of the fan hook box.
11. Put stirrups in the column for upper floor column size.

Fig 4.9 Showing Reinforcement of One Way Slab

4.4.2. CURING

Curing can be defined as keeping the concrete moist and warm enough so that hydration of cement can continue. It is the process of maintaining satisfactory moisture content and a favourable temperature of concrete during the period immediately after placing, so that hydration of cement continuous until the desired properties develops to the required degree.

IMPORTANCE OF CURING

If curing is neglected in the early period of hydrate on, the quality of concrete experiences irreparable losses. For preparing good concrete curing is as important as other criteria such as mixing, vibrating and placing of concrete.

METHODS OF CURING

1. Water curing.
2. Membrane curing.
3. Application of heat.
4. Miscellaneous.

WATER CURING

This is the best method for curing. Water curing can be done in the following ways :

- **IMMERSION**: The precast concrete items are normally immersed in curing tanks for the required duration.

- **PONDING**: Floor slabs, road slabs etc, are covered by water by making small ponds of water.

- **SPRAYING AND WET COVERING**: Vertical retaining walls and concrete columns are cured by spraying water. In some cases, wet coverings such as wet gunny bags, hessian clothes etc., are wrapped around the vertical surfaces for iiouhihkeeping the concrete wet.

Fig 4.10 Showing Curing Of Slab

Fig 4.11 Showing Wet Cover Curing for Columns

4.4.3 PLASTERING

Plastering is a building material used for coating walls and ceilings. Plaster starts as a dry powder similar to mortar or cement and like those materials. It is mixed with water to form a paste which liberates heat and then hardens. Unlike mortar and cement, plaster remains quite soft after setting, and can be easily manipulated with metal tools or even sand paper. These characteristics make plaster suitable for a finishing, rather than a load bearing material.

Cement plaster is a mixture of suitable plaster, sand, Portland cement and water which is normally applied to masonry interiors and exteriors to achieve a smooth surface. Interior surfaces sometime receive a final layer of gypsum plaster. Voids constructed with stock bricks are normally plastered while face brick walls are not plastered. Various cement based plasters are aggregate. Heavy versions of such plasters are also in use for exterior fire proofing, to protect LPG vessels, pipe bridges and vessel skirt.

Fig 4.12 Showing Plastering Work for Walls.

CHAPTER 5

REFLECTION OF THE WORK

1. Able to analyse and understand the drawings, plans of constructions, detailing of reinforcement structures etc.

2. I related practical knowledge of site with my engineering knowledge.

3. Selecting appropriate technologies and developments, self-understanding, self-discipline, and confidence.

4. The way of behaving with labours and the way of communication with the material suppliers.

5. I learned how to manage time and quality of work.

6. How to overcome the difficulties at the site work by discussing with proper technical person.

7. Able to recognise various types of foundations, slabs, columns, staircase etc,.

8. Importance of team work which is most important element in every sufficient project.

9. About site engineers responsibility to make sure that no any labours should get harmed during the constructions and everything should be in proper way.

10. Opportunity to surprise the construction work closely.

11. About site engineers responsibility to make sure that everything is right on schedule and every member is doing his work in the way he has been guided.

12. Gain knowledge through experimental learning from internship in construction constituent's significant and uniquely valuable preparation for the requirements of their future professional practice in that field.

Chapter 6

CONCLUSION

1. We can conclude that there is a difference between the theoretical and practical work done. Has the scope of understanding will be much more when practical work is done. As we get more knowledge in such a situation where we have great experience during the practical work.

2. Since I took my internship session in the project I get an opportunity to work in the different part of the construction work which helps me to gain more knowledge by seeing what they work in their own office and what is their main responsibilities to the client and also each other.

3. Working with a consultant team gets me more knowledge than that of the contractor in case that the consultation work includes the duty of the site engineer and in the consultant office, that are more important for me to upgrade my knowledge in different aspects of work.

4. The consultant team by its nature includes design a team, including structural engineers, architects, sanitary, electrical and mechanical engineers, the contract administration and supervision team includes site coordinators, supervisors and quantity workers and the financial office, this helps me to get more knowledge than the contractors.

5. This program played an important role to break the conventional thought that field works can be only implemented by students who hold a degree or people who have an experience in building construction. We were able to acquire a high level of confidence to deal with problems that arise in a building construction.

REFERENCES

1. Textbook **"Building Materials & Construction Technology"** by H.S. Vishwanath.

2. Textbook **"Concrete Technology"** by M.L. Gambir publishing McGraw Hill Education, 2014.

3. IS 456 – 2000, **"Plain and Reinforced Concrete – Code of Practice"**.

4. **"Practical Building Construction and Its Management"** by Dr.N. Srujana, publishing N.Lingeshwaran, 2017.

5. **"Report on Design of a Residential Building"** by Mohd Atif and Syed Khasim, 2015.

ABSTRACT

The internship report in broad-spectrum contains four chapters in which i try to explain my one month experience with company. The contents of all chapters are broadly explained and it is constructed from the practical basis of the site work. In the opening chapter one I give details of the company background .In this chapter we put all record or history and futurity of my company with its official address. So it is give details of the company in terms of reader can easily know and access the company. After one chapter other chapters explains the main benefits of the internship in the terms of different aspects and areas. Internship has a plus in terms of improving skills and different abilities as a whole. The advantages and gains of the internship putted in short and prices way to grasp the attention of readers and evaluators.

INSTITUTE VISION AND MISSION

Vision

Technical manpower development professionally excellent, globally, competitive, socially responsible engineers and with human values.

Mission

- To provide quality education through innovation in teaching to create technologically competent engineers.
- To achieve excellence in research and development to advance science and technology to the ever changing needs of society
- To create outstanding professionals capable of working in multi-cultural environment.
- To produce quality engineers with high ethical standards and professionalism.

DEPARTMENT VISION AND MISSION

VISION

To develop Civil Engineering professionals who are Technically Competent, Ethical and Environmental friendly, to create a better society.

Mission

- To produce quality civil engineering, who are competent, disciplined and good in terms building as well as in meeting dynamic societal needs
- The department aims to be one of the best places for learning, by imparting knowledge with a strong conceptual foundation coupled with practical insights to meet the global business changes.
- To provide conducive environment where students can transform into exemplary professionals of high ethics.