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## A case study on effective and elegant view of coffer slab

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### ABSTRACT

Nowadays, in the construction field, there are tremendous new technology and techniques used to give a decent look to the building so that the people get attracted towards the buildings and it will give the dealers and buyers to get through it. In this modern organization, the people demand that they have an innovative and creative design of the building for the aesthetic point of view. This paper represents that in the commercial building for the architectural consultant to design and shape by the coffer slab with different types of moulds used as per the drawings that are required by the client perspective and overview.

**Keywords:** Fibre reinforced plastic mould, Air compressor, Concrete, Reinforcement.

### 1. INTRODUCTION

In ancient time, some basic need for the human being is to provide a shelter for surviving on the earth for the people to get rest and peace in their shelter. But nowadays people do not look only for shelter but they are thinking as aesthetic point of view. They prefer as per the architectural view should be unique and it should be designed in such a way that it should be simple and creative as per requirement and satisfied by the client and done by the contractor so they used coffer slab for the architectural purpose. This type of forms of the slab is used in many countries like Europe, Rome, Portugal, and India etc. In India, this type of forms of the slab is used for many construction building like residential, commercial and industrial building to enhance the beauty of the construction sector.

### 2. METHODOLOGY

The methodology adopted in the site are:

- Data collection of coffer slab
- Data analysis of coffer slab
- Merits and Demerits

### 3. DATA COLLECTION

#### Definition:

A coffer slab is a type of forms of a slab which has two-sided reinforcement fixed outside the mould to give an aesthetic shape of the mould which appeared in the waffle slab.

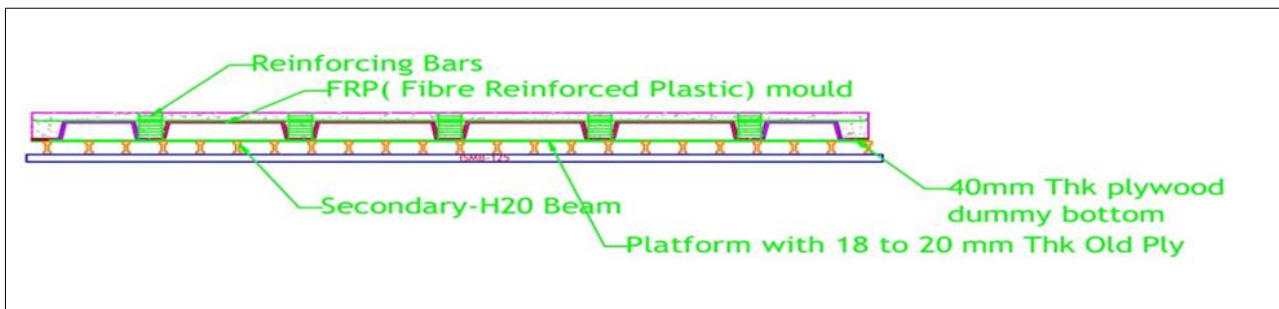
#### Purpose of Coffier Slab:

- It is almost ideally cast-off in roof and floor slab.
- This kind of slab is frequently used in a commercial and industrial estate.
- This sort of formwork is used in a various structure such as parking area, IT Steeple, airdrome, factory district, dwelling places etc.
- It further conveys a greater amount of load imposed by the slab.

**Materials in coffer slab:**

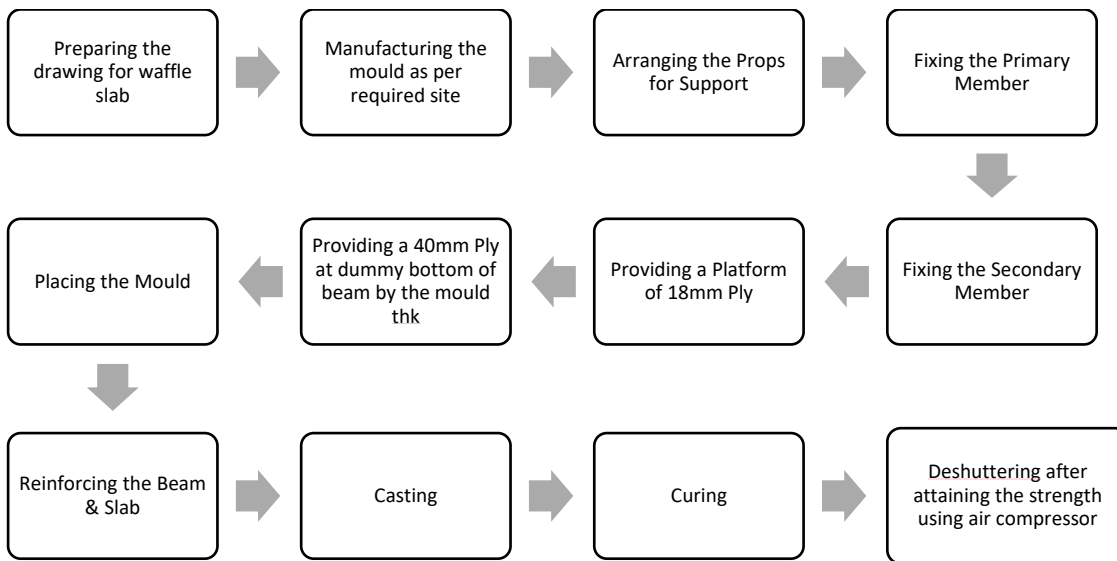
The material required for coffer slab are:

- Primary Member-ISMB 125
- Secondary Member- DOKA beam
- At beam and the outer surface of column 25mm thk plywood dummy bottom.
- Platform with 18mm thk old ply.
- FRP (Fibre-reinforced plastic) mould.
- Reinforcement
- Casting
- Curing
- Deshuttering by using Air Compressor.

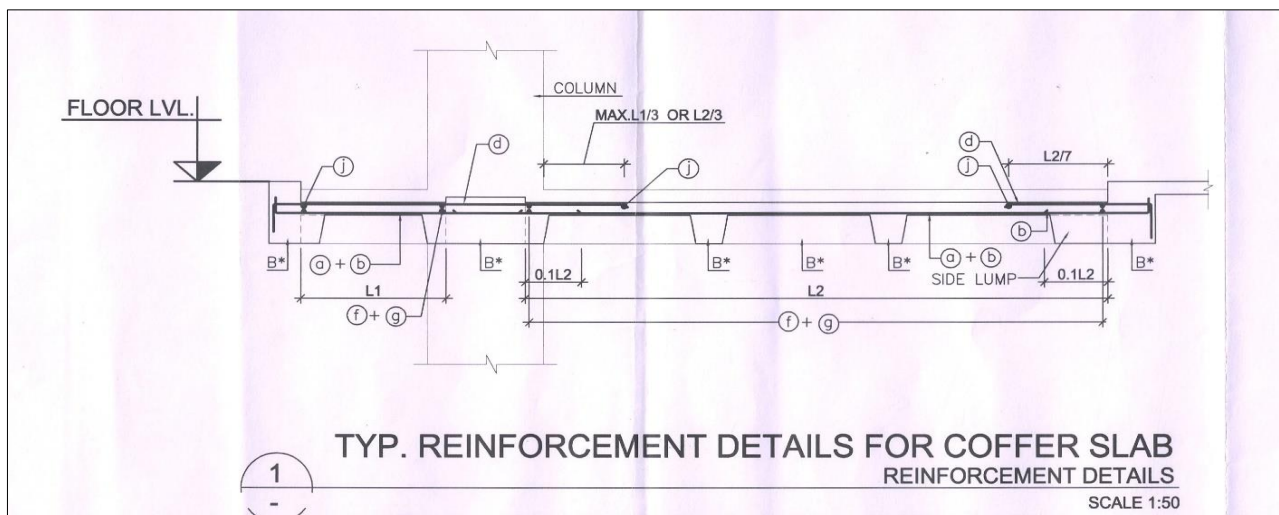


**Fig.1: Shows the staging of coffer slab**

**Construction Technique:**



**Reinforcement Detail:**



**Fig. 2: Shows the reinforcement details of coffer slab of all typical floors**

**Types of Moulds:**

Different sizes of a mould used in waffle slab as per the drawing. In a drawing, they specifically mentioned which type of moulds used in odd and even floors are as follows:

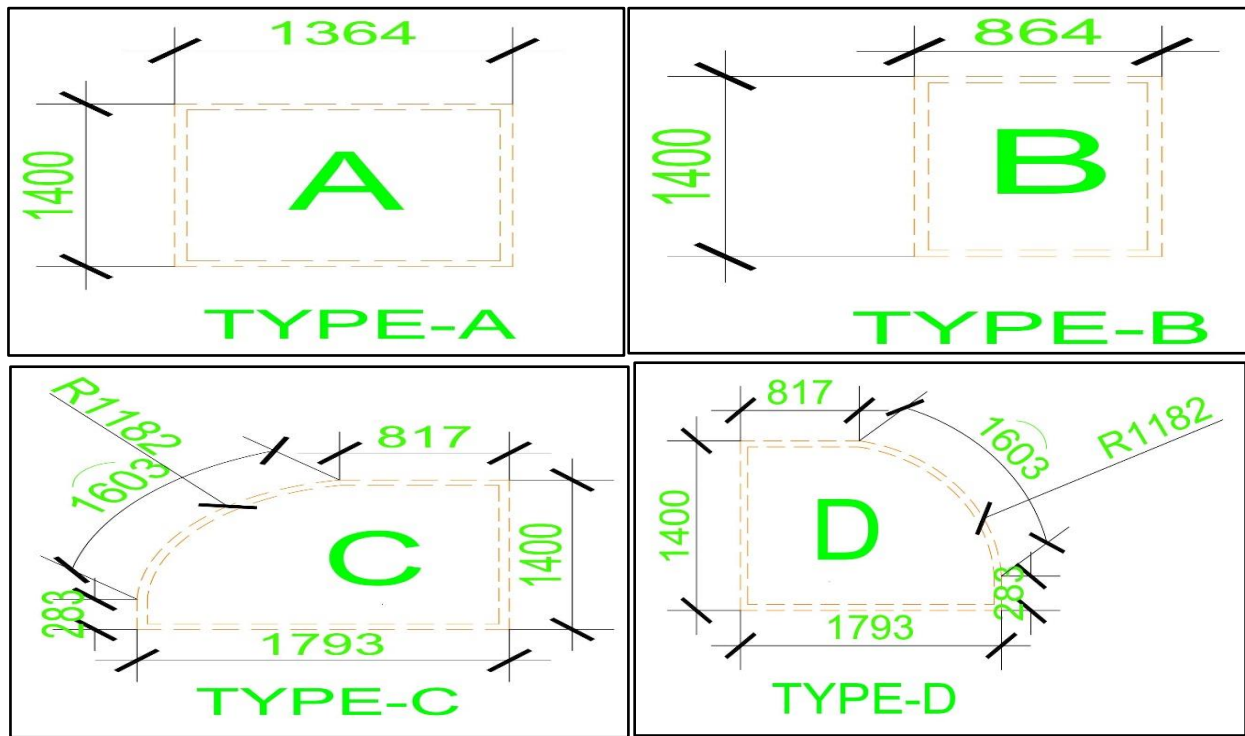


Fig.3: Shows the odd floor coffer slab moulds used in the typical floor

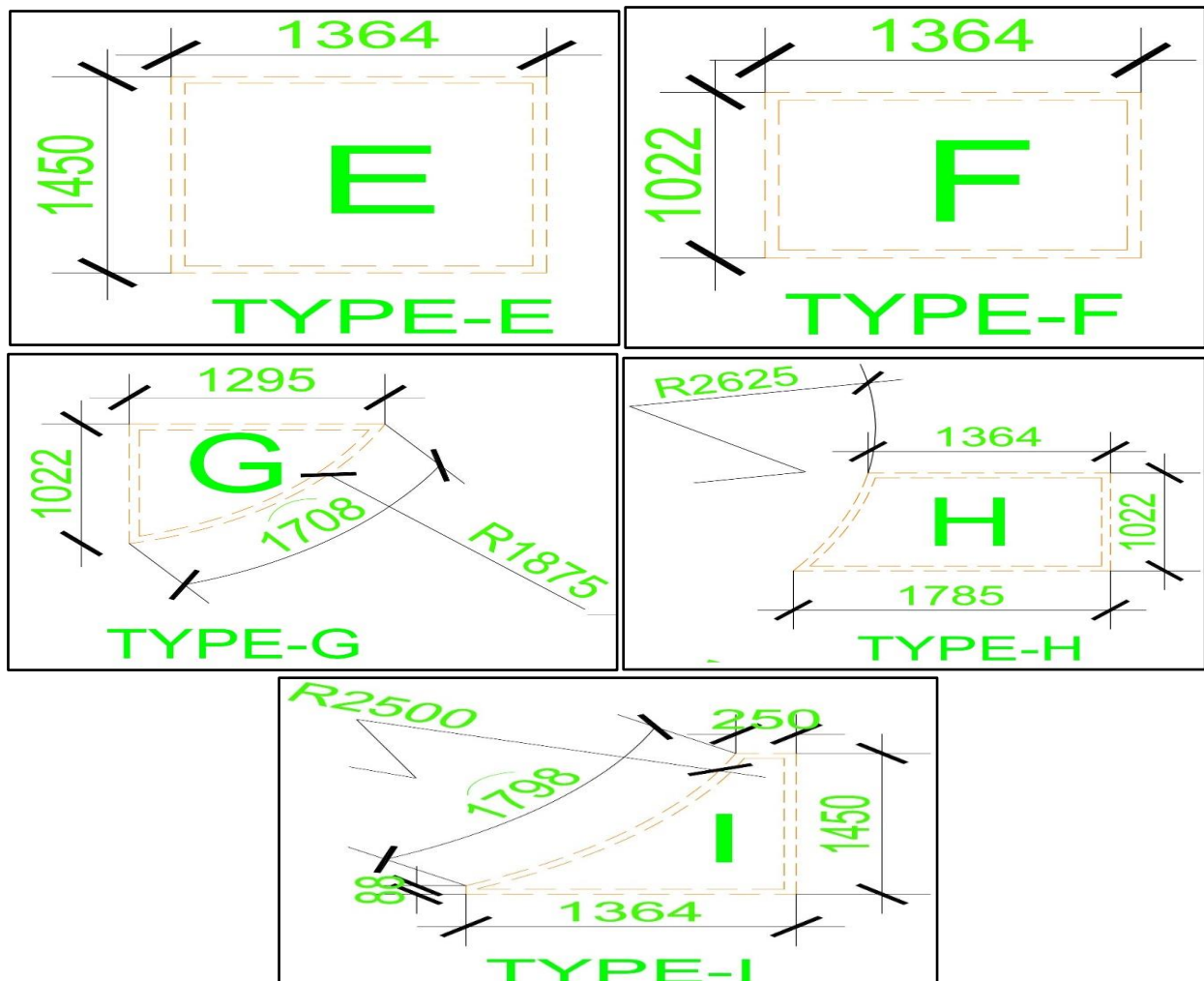


Fig. 4: Shows the even floor coffer slab moulds used in typical floor

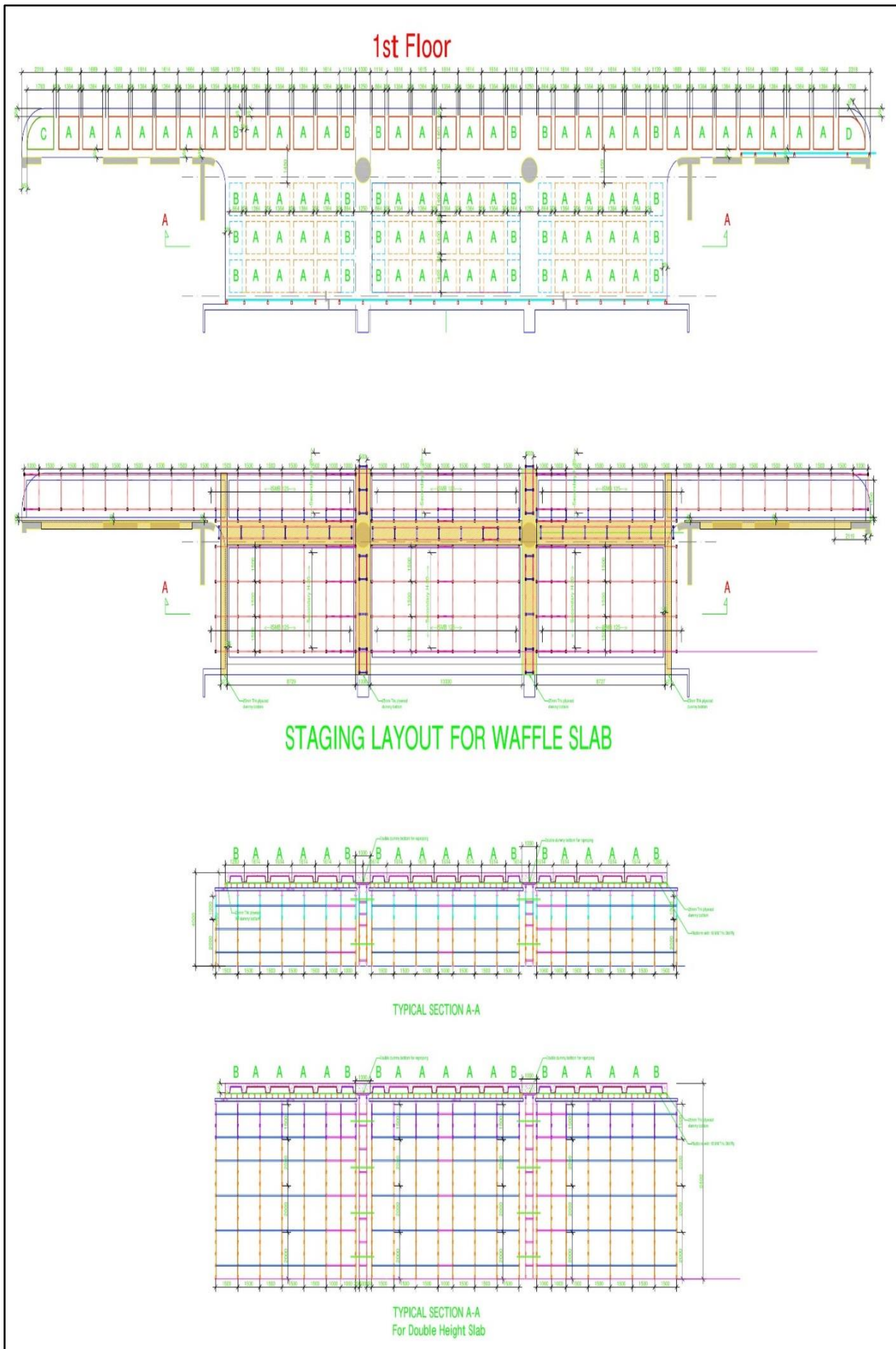


Fig.5: Staying layout of waffle slab odd floor

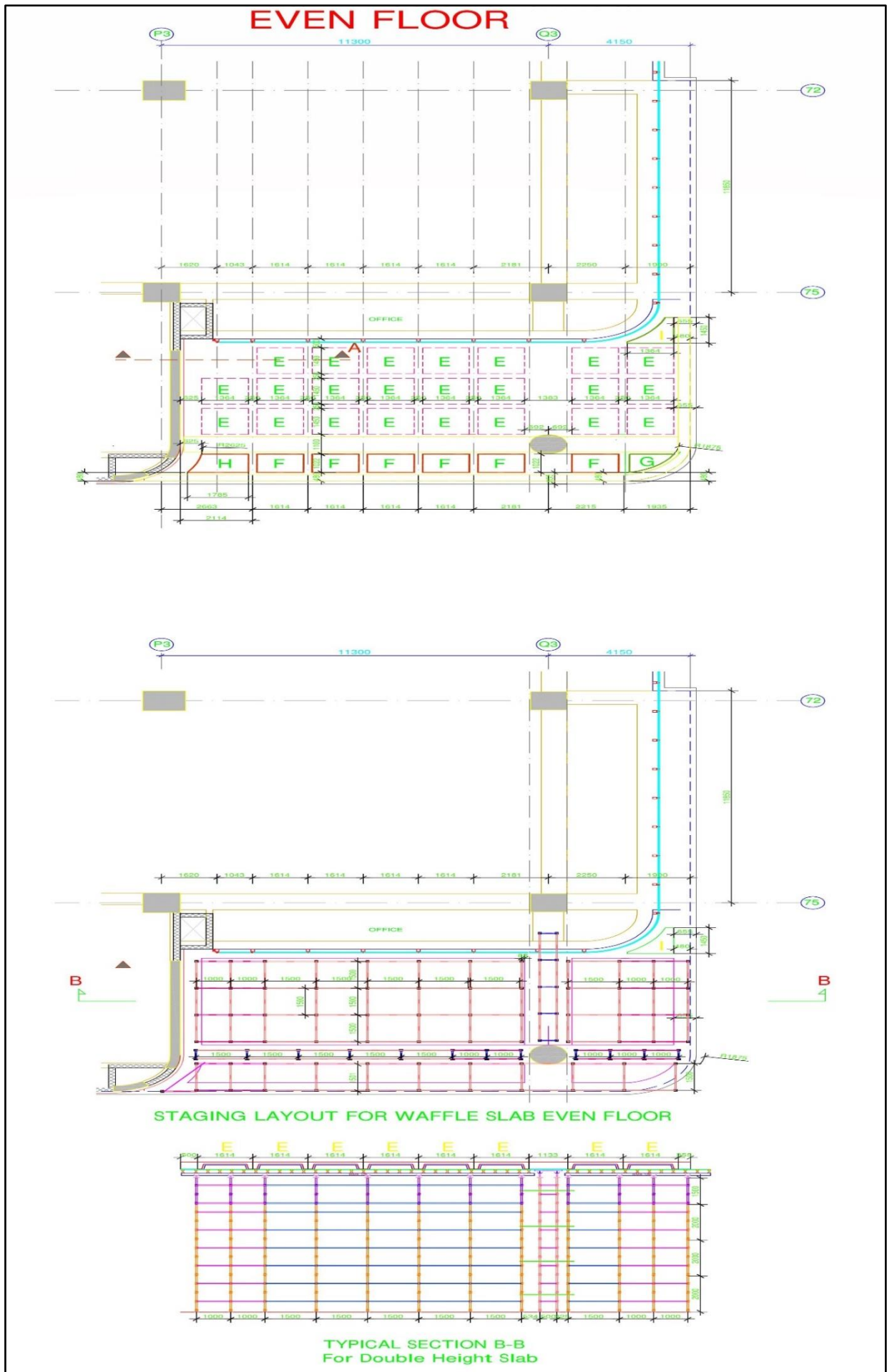


Fig. 6: Staying layout for waffle slab even floor

#### **4. DATA ANALYSIS**

In KRC IT PARK, KHARADI there is a commercial project going on for the architectural view the coffer slab is to be provided. It is repeatedly observed nowadays these coffer slab. The coffer slab mould is easily obtainable in the market but the design will be decided by the client aspect and by the drawings that are to be made by the draft department.

#### **5. MERITS AND DEMERITS**

##### **Merits:**

- It is basically used in those areas where intermediate span or less number of column is provided.
- It is used as a lens light to impart sunlight in the floor slab
- It is a combustion resistant.
- It has magnificent oscillation control.
- It has sturdy finishes and toughness.

##### **Demerits:**

- For this slab casting, the special order has to be given for preparing of moulds as per drawing of coffer slab and this will give the extra costing for the floor slab for the design purpose.
- After casting and curing of coffer slab, removing of moulds is difficult and it can be used after the whole process has been done.

##### **Site Photos:**



**Fig 7: Typical Reinforcement Details**



**Fig 8: Removing moulds with the help of an air compressor**



Fig 9: Shuttering of coffer slab



Fig 10: Aesthetic view of coffer slab

## 6. OBSERVATION

- Usually, the 50 repetitions have been done for the coffer slab but on the site, there are 6 repetitions.
- The appearance of coffer slab is great.
- Unless and until the staging of coffer slab, laying of reinforcement in beam and the slab we can't cast the slab.
- It will give the strength of slab in 15 days cycle.
- After giving strength to the slab, then only we can deshuttering the slab but after casting of coffer slab within 2 days the moulds have been removed by the help of air compressor because it will stick the slab and it will not remove easily.

## 7. CONCLUSION

As per the client convenience, the drawing has been prepared by the architect or consultant and according to that drawing, the typical odd and even floor dimension of mould has been manufactured and it will use. The coffer slab, however, has a perfect shape of the mould and it will give the beauty of the building in front view.

## 8. REFERENCES

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