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Comparative study of Traditional wall and Precast plates wall construction for low cost house

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Abstract

A low cost housing is a different concept which deals with the effective costing and following techniques, which helps in reducing the cost of construction through the use of available material besides with and technique improved skills without losing the power, performance and life of the structure. There are three factors which affects the cost of housing i.e. time, material used and techniques. For achieving the low cost house, perfect technique is required. In this paper the use of perfect technique and comparison between different costs is discuss for reduction in cost. Two models of building was prepared and costing for construction is compared. As per estimation it is found that precast construction is economical as compared to traditional methods for small building

KEY WORDS: Low cost; Building Material; Precast Material

1. INTRODUCTION:

Low cost housing means replace the material which are naturally available and having less emission of carbon and having low cost. In low cost housing we focused on three factors they are as follows:

1. Safety
2. Economy
3. Environment

Being one of the largest countries in the world and possessing one of the largest populations in the world. India still has lots of areas where it is lagging behind in comparison with the top most economies in the world.

Why we use precast?

Precast concrete technique the so called unconventional method. In India Space can facilitated both speed and quality of construction and exploits, the advantages that large scale projects offers in terms of volume turn over and repetitions. This paper aim at demonstrating how the precast technology can be efficiently and effectively use on various Indian projects under execution.

As we know, now a days there is day by day increase of population so, the land is limited and demands for their shelter and various needs is increasing.

2. OBJECTIVES OF STUDY:

House is one of the need and low cost house gives the houses to people at reasonable rate. Therefore, the main aim of the study is:

1. To study different types of construction materials and techniques used to reduce the cost of house.
2. To compare the cost by adopting different techniques for large scale project.



Fig1 Precast plates

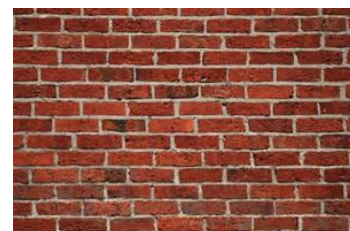


Fig.2 Brick masonry

CASE STUDY:

Fig.no.3 & 4,shows the plan and elevation of traditional house having dimension 3X4M. The foundation of this building is of U.C.R. having width 0.45M and depth 0.6M. The total height

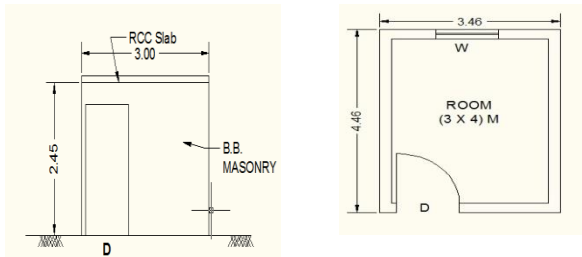


Fig.3&4

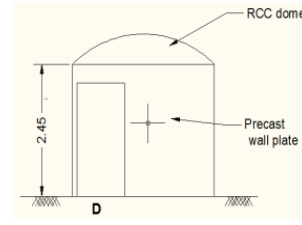


Fig.5

Fig.,No.5&6 shows plan and elevation of low cost housing having dimension 3X4M. The foundation of this building is U.C.R. having width 0.45M. and depth 0.6M of the building 4.45M.For wall construction, red bricks are used and roofing of R.C.C. slab.

In this building wall was replaced by precast wall plates and R.C.C. slab are replaced by R.C.C.DOME.Table 1 ,shows the comparison between cost of traditional house and precast house.

COST OF TREADITIONAL HOUSE			COST OF PRECAST HOUSE		
SR.	ITEM NAME	AMOUNT	ITEM NAME	AMOUNT	
1	EXCAVATION FOR FOUNDATION (Murum)	830.8	EXCAVATION FOR FOUNDATION (Murum)	830.8	
2	P.C.C. (1:2:4) Room flooring	9218.88	P.C.C. (1:2:4) Room flooring	9218.88	
3	UNCOURCE RUBBLE MASONARY	7236	UNCOURCE RUBBLE MASONARY	7236	
4	DAMP PROOF COURSE	3625.56	DAMP PROOF COURSE	3625.56	
5	WALL B.B.M. (1:6)	35531.872	WALL (PRECAST PLATES)	10080	
6	SLAB M200 GRADE	9120.5	RCC DOME	7695.73	
7	REINFORCEMENT		REINFORCEMENT		
	1% OF RCC QUANTITY	11616.52	1% OF RCC QUANTITY	9795.552	
8	DOOR (WOODEN)	5859	DOOR (WOODEN)	5859	
9	WINDOW (WOODEN)	2673	WINDOW (WOODEN)	2673	
10	PLASTER EXTERNAL	10006.2	PLASTER EXTERNAL	NOT REQ	
11	PLASTER INTERNAL	5251.2	PLASTER INTERNAL	NOT REQ	
12	PAINTING EXTERNAL	1177.2	PAINTING EXTERNAL	1177.2	
13	PAINTING INTERNAL	984.6	PAINTING INTERNAL	984.6	
	TOTAL AMOUNT (RS)	103131.33	TOTAL AMOUNT (RS)	59176.32	
	CONSTRUCTION AREA	6683.1	CONSTRUCTION AREA	3834.75	Rs./Sqmtr
		621.7		356.72	Rs./sqft
	Saving in cost		=43955/-		
	% saving		=42.6204%		

3. CONCLUSION

From above study, we conclude that,

1. There is cost reduction due to adoption of different precast techniques.

2. Precast gives strength to the structure and cost is less than traditional house.

3. Time required for making the low cost house by using the precast is less than traditional house.

4. For effective house present study clearly state that precast technique is suitable for low cost housing.

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