



Low Cost Housing

Mr. Sumedh Bhupal Chougule^a, Prof. Priyanka Patil^b

^a Student of MBA Project and Construction Management, MIT-ADT, Loni-Kalbhori, Pune, 412201, India.

^b Assistant Professor at MIT-ADT, Loni-Kalbhori, Pune, 412201, India.

ABSTRACT

Low Cost Housing is a new concept that deals with effective budgeting and following of techniques which help in reducing the cost construction through the use of locally available materials along with improved skills and technology without sacrificing the strength, performance and life of the structure. In today's life housing is a basic need of human being. But this is out of the means of low-income householder who constitute majority of the population in the country.

Keywords: - Effective budgeting, Reduce construction cost, Local available material, Skills & technology, Housing is basic need of human.

1. Introduction

Low cost housing is a new concept that deals with effective budgeting and following techniques that help in reducing the cost of construction through the use of locally available materials along with improved skills and technology without sacrificing the strength, performance and life of the structure. India is the one of the largest country in the world and possessing one of the largest population in the world. India has still lots of areas where it is behind in comparison with top most economy in world. To stay healthy one need a proper place to reside for the entire life and that is home. This is one of the important components of one's life

2. Methodology

Observations

- Grade of cement: M25
- Type of cement and brand: OPC
- Specific gravity of cement: 3.15
- Specific gravity of coarse aggregates: 2.7
- Specific gravity of fine aggregates: 2.7
- Fly ash percentages: 30%.

The cost of different materials had been taken as per Standard schedule rates and the cost is calculated for some elements for Affordable housing according to their quantities and finally the values are compared with conventional building.

Here in this report a house has been proposed having the following Specifications :

- Size of room = 3.05 X 3.70 m²
- Size of bath = 1.10 X 2.2 m²
- Size of w.c. = 1.00 X 1.20 m² P
- linth area = 22.45 m²
- Plinth height = 650 mm
- Depth of foundation = 1000 mm
- Wall thickness = 300 mm
- Wall height from plinth level = 3000 mm

Estimations :

Sr. No.	Particular	Affordable Housing	Conventional Housing
1	Excavation for foundation	4213.26	49209.93
2	Plain Cement Concrete	19643.69	47531.77
3	Uncoursed rubble masonry	96161.86	247085.65
4	Plinth filling materials	818.87	2672.89
5	Damp Proof Course	2320	4640
6	Brick masonry	111945.6	155477.7
7	Skirting	-----	2224.13
8	Flooring and Dado	-----	99062.12
9	External plaster	38276.1	82622.7
10	Internal plaster	15828.48	46825.92
11	External colouring	575.1	11374.2
12	Internal colouring	741.96	14674.32
13	Wood work in door and windows	270.6	15520.34
14	R.C.C. work in lintel and slab	45988.56	45547.06
15	Steel required for slab and lintels	15400	20000
	Total =	352184.00	844469.00

3. Specifications :

- Size of room = 7.30 X 2.90 m²
- Plinth area = 27.65 m²
- Plinth height = 450 mm
- Depth of foundation = 1000 mm
- Wall thickness = 300 mm
- Wall height from plinth level = 3000 mm

Sr. No.	Particular	Affordable Housing	Conventional Housing
1	Excavation for foundation	3460.32	49209.93
2	Plain Cement Concrete	16155.17	47531.77
3	Uncoursed rubble masonry	55961.28	247085.65
4	Plinth filling materials	923.77	2672.89
5	Damp Proof Course	1664	4640
6	Brick masonry	98912.32	155477.7
7	Skirting	-----	2224.13
8	Flooring and Dado	-----	99062.12
9	External plaster	40971.6	82622.7
10	Internal plaster	11116.8	46825.92
11	External colouring	615.6	11374.2
12	Internal colouring	521.1	14674.32
13	Wood work in door and windows	241.08	15520.34
14	R.C.C. work in lintel and slab	-----	45547.06
15	Steel required for slab and lintels	-----	20000
16	G.I. Sheets	2200	-----
	Total =	232743.00	844469.00

4. Observation

- Cost of affordable housing (Room 1) = 352184.00
- Cost of affordable housing (Room 2) = 232743.00
- Cost of conventional housing = 232743.00
- From the above estimations, the cost of affordable house (room 1, room2) is less the cost of conventional house..

5. Results and Discussion :

Fly ash is used as a natural admixture which develops the workability and strength of the concrete for a longer run. In this study we noticed that the excess usage of fly ash will give a smooth finishing to the walls which will reduce the plastering cost of a building. We have to adopt the alternative options available in construction industry as discussed above. Quantity and cost is estimated for structural and non structural elements. Using low cost materials in non structural elements cost can be reduced. So we can adopt them. The overall total cost of the Residential building can be saved up to 60%.

6. Conclusions:

It is therefore expected that the findings and recommendations emanating from the study have advanced our understanding of the challenges and solutions to construction of affordable housing for the urban poor. The adoption of the various recommendations made above, housing problem could be successfully tackled. cost effective technologies are available in the field of housing construction. Among these, the cost- effective technology has the advantage of economy in construction, saving of time and energy and of the optimum use of materials. Since the building materials are locally available the huge transportation costs incurred for transporting the materials and the delay in construction can be avoided. Quantity and cost is estimated for structural and non structural elements. Using low cost materials in non structural elements cost can be reduced.

REFERENCES

- [1] Anniz Fazli Ibrahim Bajunid, and Mazlin Ghazali, Affordable Mosaic Housing: Rethinking Low-Cost Housing, InCEBS 2009 Shah Alam, Procedia - Social and Behavioral Sciences 49 (2012), pp 245 – 256.
- [2] Abhijith V and Shanbhag, Akhil, Low Cost Urban Housing In India And Habitat For Humanity, September 2013, pp 01-13.
- [3] Salem Y. Al Qudwa, Developing Simple and Economic Buildings in the Gaza Strip Using Minimalist Architecture Principles, June 2013, pp 01-116.
- [4] S. S. Shinde, A. B. Karankal, Affordable Housing Materials & Techniques for Urban Poor's, International Journal of Science and Research (IJSR), India Online ISSN: 2319-7064, Volume 1 Issue 5, May 2013, pp 30-36.
- [5] Omkar Kulkarni, Dr. Suresh Jakhar , Prof. Manoj Hudnurkar, A comparative study of relation between the national housing & building material cost and economic gap in India, SIMSARC, Procedia Economics and Finance 11 (2014),pp 695 – 709.
- [6] Kalpana Gopalan, Madalasa Venkataraman, Affordable housing: Policy and practice in India, IIMB-Century Real Estate Research Initiative, Indian Institute of Management Bangalore, 19 May 2015, pp 129-140.
- [7] Iwuagwu Ben Ugochukwu, Iwuagwu Ben Chioma M., Local building materials: affordable strategy for housing the Urban poor in Nigeria, International Conference on Sustainable Design, Engineering and Construction, Procedia Engineering 118 (2015), pp 42 – 49.
- [8] Deepti Pande Rana and Arun Kumar Rana, Core Issues and Challenges of Affordable Housing in India, Indian Journal of Applied Research, ISSN-2249-555X, January 2016, pp 193-195.
- [9] S. Baqutaya, A. S. Ariffin, and F. Raji, Affordable Housing Policy: Issues and Challenges among Middle-Income Groups, International Journal of Social Science & Humanity, June 2016, pp 433-43