

COST CONTROL ON CONSTRUCTION WITH MAXIMUM USAGE OF ECOFRIENDLY MATERIALS

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ABSTRACT

This paper presents a detailed experimental and theoretical study on cost control on construction with maximum usage of ecofriendly materials. The main parameter is to analyze the reason for rising of cost in construction and to establish an alternate method to reduce the cost in construction. Present cost of various materials, labors, and contractors are analyzed and alternate ways are suggested to reduce the cost in construction. The investigation an attempt have to be made to study the details about the cost, types of materials, wages of labors, etc. A case study has to be taken among the people to obtain their view on cost in construction, and financial ways involved in construction.

KEY WORDS: 1. Low cost 2. Alternate materials 3.financial ways.

1. INTRODUCTION

The provision of decent houses in Chennai to majority of the population is facing serious challenges of affordability and accessibility. This has resulted to high prices and shortages of houses to the majority of the population. These twin challenges have been attributed to the cost of building the houses. The purpose of this study was to establish the determinants of house construction cost in Chennai city. To achieve this, specific objectives were to determine the influence of finance, building materials, labor, land and infrastructure cost on construction cost of the houses. In addition, to establish possible strategies and initiatives that can be implemented to make construction cost of house affordable. The study evaluated how significant the relationship each of these determinants has with the house cost. The study adopted a descriptive research survey where structured questionnaires were distributed among three categories of professionals in the housing sector. This study utilized a self-administered questionnaire as a tool of collecting data. The data was analyzed using mean and standard deviations and Pearson correlation analysis. The study found out that land, building materials and infrastructure determinants have the most influence on the housing cost in Chennai. Each of these determinants registered the highest average mean score and had a strong positive relationship with house cost with an equally high level of consensus among the respondents. The study also found out that there are possible strategies and initiatives that can be implemented to reduce the cost of constructing houses which includes Private-Public-Partnership, Government facilitation and use of alternative building technology.

1.1 NEED FOR COST CONTROL ON CONSTRUCTION

Housing sector is important and strategic to government and policy makers due to its impact on country's output fluctuations and inflation. The housing industry impacts on the well-being of the people in various ways such as, the size and composition of household wealth, accessibility to credit, labor productivity and employment.

House construction is a dream for low income people in our India. Whether he is a farmer, labor or private employee. Cost of construction is at high because of high wages and high material cost. A poor man has to spend his entire life in construction a house. Low cost housing is reasonable for low income owners, if they can invest 30% of their household income. India as a developing country, has 20% of high income population that can afford a house. High and middle income people takeover most of the low income housing. There is a need of cost effective construction technology and materials. A low cost housing doesn't mean to sacrifice with strength or build with operational materials but it means effective use of local materials and techniques that are durable and require less maintenance. Low cost material

reduce the cost by using alternative techniques. India's urban population is the second largest in the world. The country needs a plan for land acquisition and rapid construction. 40–45% is slum population which is growing day by day. Current shortage of 17.6 million houses is being faced by India. Mumbai is the largest populated city of India having a population of 16 million according to 2011 census which has seen an increment of 15.98% from 2001 census. India's population grows by 1.3% per annum which is a main problem as 37% of population is below poverty line. A need of using low cost and easily available materials and technology. Shortage of 17.6 million houses generates the usage of local available and natural materials in rural and urban India. According to World Bank the rural and urban population of India in 2013 is 67.97% and 32.02%

2. Methodology

A detailed survey among people depending among their source of incomes. The survey among people is classified into three parts as people who own their own land, who doesn't own their own land and average source of income.

Various Financial facilities provided to the public for construction

1. Loans provided by the bank.
2. Housing board provided by the government at low cost.
3. Free housing plans for under poverty people.

A detailed survey on types of materials involves in construction and their cost is analyzed. The alternate materials are identified and the cost of those materials are analyzed and compare the regular cost of materials with low and ecofriendly alternate materials. The comparison of cost output is given through primavera software.

3. SURVEY

3.1 PUBLIC SURVEY: Questionnaire have been issued among the people who are rented in various place in Chennai. The questions like 1.annual income of people 2. Rental amount 3. Owning own land 4. Expected estimated amount in construction etc. have prepared and issued and analyzed the public needs on their cost in construction.

3.2 SITE ENGINEERS SURVEY: A survey is conducted on construction engineers and contractors and their techniques and methods is recognized and analyzed on the ways to reduce the cost during construction

3.3 ALTERNATE MATERIALS SURVEY: Various types of ecofriendly materials is compared with usual materials used in construction and their strength is determined and comparatively the cost efficient materials is determined.

4. TECHNIQUES ANALYSED: Hence the total cost of construction cannot be reduced we can able to reduce the maximum amount by using various techniques to reduce cost in construction. Materials for super structures , fly ash cement, recycled steel reinforcement, precast R.C.C, fly ash sand, bricks from coal washer rejects, C-brick etc. is determined as efficient materials that can be used instead of normal materials.

For roofing we can use bamboo matts, micro concrete roofing tiles. For flooring and wooden works, plastic wood is suggested.

Labors are implemented for shift duties in sites, clear idea about the project construction is given to them. Materials are purchased with regular contractors or suppliers. Project managers are assigned to have a smooth construction process so that their won't be any delay or accidents happens in construction.

Transportation of materials, equipment's are maintained or leased depending upon the needs.

5. ANALYSATION

On following the above techniques about 10% of normal cost of construction is reduced. Government of Tamil Nadu also be a support for poor people who is in need of house for their survival by providing governmental schemes like housing board schemes , Banks should also make an easy process to provide loans for a normal construction .people can buy house in EMI methods instead of paying rents they can pay amounts on EMI.

CONCLUSION

On a brief study on ecofriendly materials and cost control it has been analyzed on proper usage of alternate materials about 20% of cost in construction is reduced comparatively. And other factors is also suggested among public to reduce the cost in construction.

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