

Low Cost Housing System for Rural Areas

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Abstract: *This title aims to study the rural housing problem in India and provide a viable solution to overcome this. It tries to identify the main reasons for the inadequacy of low-cost housing units and why the government and private sector have failed to address this issue. A good housing and sanitation system with proper drainage system is true need of any rural area. It will decrease all possible pollution from present housing system of any village. This system will be constructed by low cost building materials like, slag brick, cement mud blocks etc. This system also contains a sanitation system and drainage system with bio-gas digestion unit which will be also favorable for our environment. By means of this we can able to reduce pollutants by wood ‘chulhas’.*

Keywords: low cost housing system; bio gas digestion chamber; slag brick;

1. Introduction

Housing is an arduous problem across the world, especially in developing countries like India. Apart from being one of the three basic necessities of life, adequate housing helps to prevent diseases, injury and death, provides security, and increases household and national income. It has become a top priority of the government and the society at large to address this issue.

A cost effective, affordable and eco-friendly housing system including, low cost house & sanitation system with implementation of biogas system which will decrease air pollution and drainage problem.

A large section of Indian population lives in villages and is mainly engaged in agriculture. They belong to weaker section of the society.

Housing affordability can be measured by the changing relationships between house prices and rents, and between house prices and incomes. There has been an increase among policy makers in affordable housing as the price of housing has increased dramatically creating a crisis in affordable housing and insanitary living conditions. The latter is mainly responsible to repel the educated youth from working in rural areas.

One source of insanitary condition in rural areas is the drainage of waste water from bathing and cooking areas of dwellings over the kutchra roads and lanes having inadequate slopes.

The situation is further aggravated due to the movements of carts and animals which result in the creation of pot holes and ditches that gets filled up with dirty stagnant water. The mosquitoes and flies find good breeding centres in these places and spread diseases.

2. Study Area

Chhattisgarh state (in fig.1 & 2) is located between 17°50’ N to 24°08’ N latitude and 80°15’ E to 84°13’ E longitude and has covering area of about 135194.5 sq. km.

The state has been divided into 27 districts, 96 tehsils, 146 development blocks, 85 tribal development blocks, 97 towns and 20308 villages. According to 2011, the total population of C.G. is 2,55,45,198 and in this the rural population is 1,96,07,961. The area of Chhattisgarh covers 76.76% of rural area, while only 23.24% of urban area.

As this state has large rural area, a proper housing system with appropriate sanitation system has still not been easy to afford.



Figure 1: (Picture courtesy: Wikipedia)

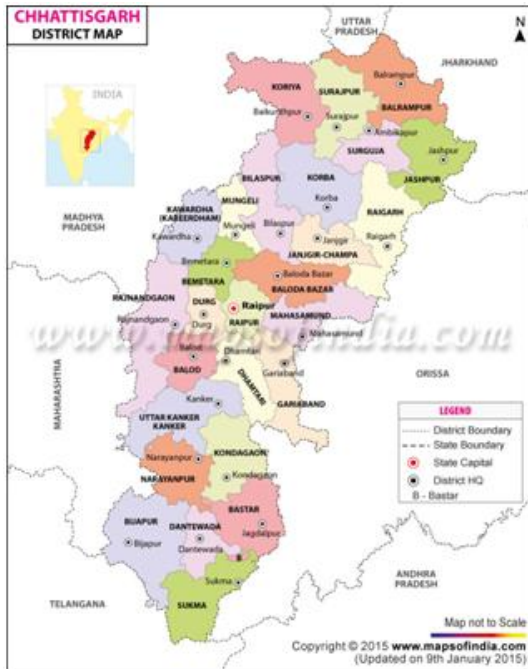


Figure 2: (Picture courtesy: mapsofindia.com)

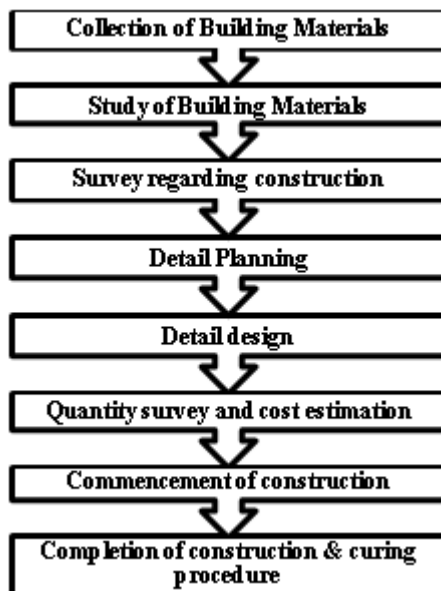
3. Methodology

The methodology of this research carried out by under the following headings:

- Material collection regarding low cost construction work.
- Study in detail about the building materials which are going to be used in this research work.
- Survey regarding construction.
- Planning regarding construction work.
- Detail designing of house system, bio-gas sanitation system & drainage.
- Detailed estimation of cost and quantity survey of material.

Commencement of construction work

- **I - phase:** Construction of bio-gas digestion chamber.
- **II-phase:** Construction of house system and sanitation system.
- **III-phase:** Construction of drainage.
- Curing procedure.



Collection of Building Material:

Under this section, we would collect materials which will be durable and cost effective, like slag, fly ash, waste concrete etc.

Study of Building Material:

In this section, we will study in detail about the chemical and physical properties of that selected building materials.

Properties like, strength (tensile and compression), durability, density, workability, eco-friendly, etc.

Survey regarding construction:

As per prerequisite of construction, we have to do a survey of land and location for the requirement of localities.

And in technical section, we will do leveling, cutting, filling of the required land.

Detailed Planning:

Total construction area comprises approximately will be **18x12m²**.

Super built up area will be **66%** of total construction area. Maximum allowable carpet area will be **30m²**. A detail elevation, plan and section of required construction will be developed.

Detail designing:

Our detailed design of structure will satisfy all the building standards for RCC structure, i.e. I.S. 456:2000 and for steel structure, i.e. I.S. 800:2007

The detail designing part comprises of each and every detail specification of structure regarding house and sanitation system.

Quantity Survey and Cost Evaluation:

For all engineering work it is required to know beforehand the probable cost of construction and it is known as estimated cost and which is worked out by estimating the cost and quantity of building materials and labour required.

Commencement of construction:

After follow all these procedure the construction work is began will follow all aspects and specifications.

Curing Procedure:

After completion of construction, the curing will done for **28days** and then it will be utilized.

4. Acknowledgment

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression, “One of us (R. B. G.) thanks . . .” Instead, try “R. B. G. thanks”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

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