

AFFORDABLE HOUSING

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Abstract:-

Introduction

- Affordable House is the 3rd basic need of Humans after Food and Clothing.
- Housing is a new concept which 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.
- Affordable housing is done by proper management of resources and use of improved building technologies.
- The use of natural materials like straw, bamboo, fibres (jute, coir), earth etc. is a centuries old practice in India

Affordability & Low Cost housing concept:

- Guideline for housing affordability is a housing cost that does not exceed 30% of a household's gross income. India uses a 40% rule. Increasing population, rising urbanization, Demand supply mismatch are the factors which forces us to think about Affordable housing.
- Budgetary constraints of government & limited use of technology in this sector invites the public sector to play a role in this scenario with Public Private Partnerships.

- Effective budgeting and following of techniques which help in reducing the cost of construction. Using locally available & innovative materials along with technology without sacrificing the strength, performance and life of the structure. It emerges that to effectively facilitate 'Housing to all' the National Housing and Habitat Policy has to address affordability of LIG and EWS

Aim & Objective

Aim :

To study and analyze affordable housing in India

Objective:

- According to the 2011 Census, there were 1.77 million homeless people in India, or 0.15% of the country's total population.
- There is a shortage of 18.78 million houses in the country.
- Indian population expanding by 1.3% every year, has long been a problem for its government. Providing affordable housing remains a major concern of the government as 37% of its population remains below the International poverty line (US \$1.5 a day).

Literature Review

Name of Author

Vivian W. Y. Tam¹

School of Engineering, University of Western Sydney

Name of Title:

Cost Effectiveness of using Affordable Housing Technologies in Construction

Remark:

Suggestion for reducing construction cost in this paper is of general nature and it varies depending upon the nature of the building to be constructed and budget of the owner. The dream of owning a house particularly for low-income and middle-income families is becoming a difficult reality. It is necessary to adopt cost effective, innovative and environment-friendly housing technologies for the construction labour cost, can be saved by using the low cost housing technologies in comparison with the traditional construction methods for walling and roofing respectively.

Name Of Author

Purusothaman Jawalker & K. Sridhar Rao

Title Of Paper

A CASE STUDY – AFFORDABLE HOUSING.

Remark

Cost effectiveness of using affordable housing technologies
The dream of owning a house particularly for low-income and middle-income families is becoming a difficult reality. It is necessary to adopt cost effective, innovative and environment-friendly housing technologies for the construction. The affordability of a Residential

building can be brought to the range of Low and Medium class income people through adopting to Improved Building Technologies and proper usage of Natural resources.

Name Of Aurtho

Kana Ram

National Institute of Urban Affairs, New Delhi, India

Name Of Title

Affordable Housing Opportunities in Small Indian Cities- A Case study of Industrial Migrant

Remark

Affordable housing or low cost housing is a widely discussed issue in India today. This generally refers to cost effective housing, based on low cost technology that ensures similar quality and durability; as compared to more commonly used technologies. The concept of affordable housing, in contrast to low cost housing is applicable across all income categories. These complex issues raise difficulties in interpreting basic facts about housing affordability

Methodology

PREPARATION OF PROPER PLAN

- It is found that the Square plot will be more economical than Rectangular plot.
- This is because the boundary wall length will be shorter for Square plot compared to Rectangular plot.

- For same area the perimeter will be less for Square plot compared to Rectangular plot.
- The cost of Brickwork, Plastering, Wall base, Paint will be saved

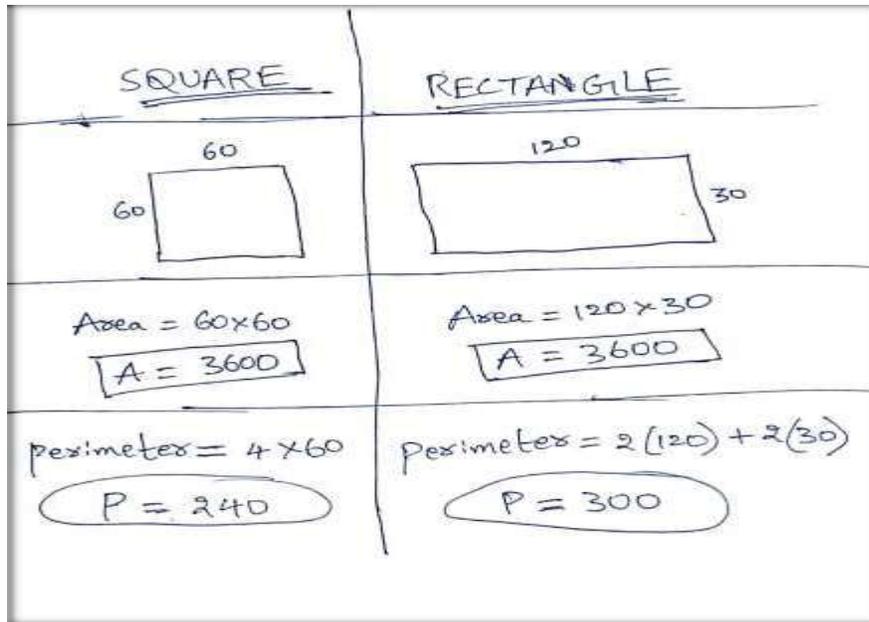
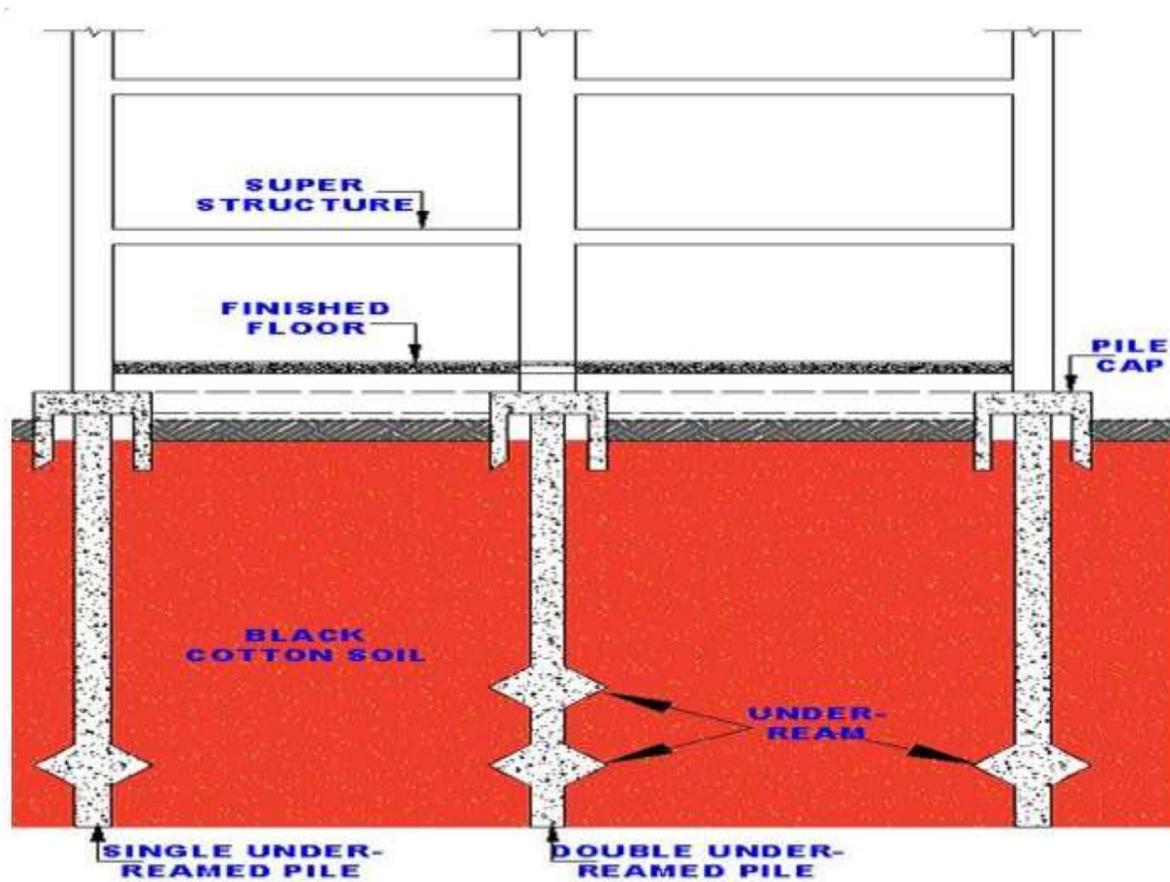


Fig.1.1

IMPROVED BUILDING TECHNOLOGIES

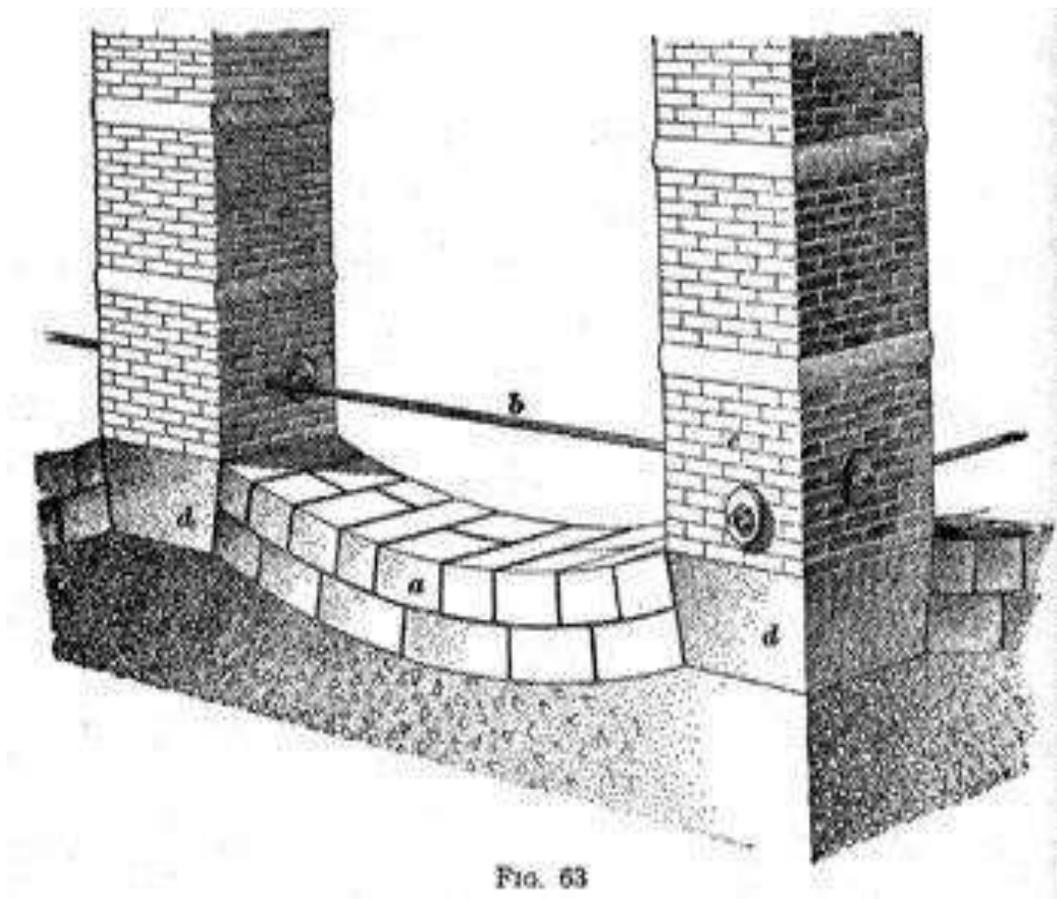
UNDER-REAMED PILES:-

- The Under-Reamed piles are bored concrete piles having one or more enlarged bases towards bottom called Reams (or) Bulbs.
- If bulbs are provided lower than critical depth of moisture movement; where the soil has nearly stable moisture content; the foundation will be anchored to the ground and it will not move with Swelling and Shrinkage of Soil.
- Designed according to IS 2911 Part3.



ARCH FOOTINGS:-

- In ordinary soils, it is suggested to adopt Arch Foundations.
- This type of foundation was used in olden times where in spread foundation is replaced by inverted arch.
- It reduces the construction cost up to 40%.
- Advantage of this is-In soft soils that the depth of foundation can be greatly reduced



FLYASH GYPSUM BRICKS:-

- Fly-ash Gypsum bricks are good substitute for burnt clay bricks for the areas in which fly-ash is readily available.
- These bricks can be manufactured with a composition of 92% fly-ash, 4.5% powdered kankar lime and 3.5% gypsum in volumetric proportion.
- A compressive strength of 5-6 N/mm² is expected to be achieved from these bricks.



- FILLER SLAB:-
- Filler slab technology is a simple and a very innovative technology for a slab construction.
- In the figure below the fibers above neutral axis will be in Compression and fibers below neutral axis will be in Tension.
- That means if we want to optimize the structure we can remove concrete from the tension zone where it is not much needed.
- Hence we replace that part of concrete using light weight and lowcost filler material. This method of construction is called Filler slab.



Conclusion

- More than 70% of people live in rent houses and wishing to have their own
- house.
- The strength, Durability and aesthetic appearance is the major requirement of all people.
- Everyone wants the design layout of their house according to Vaastu.
- The low income people wish to have their house through Government schemes and the remaining through Loans and Own sources.
- The affordability of a Residential building can be brought to the range of Low and Medium class income people through adopting to Improved Building Technologies and proper usage of Natural resources.
- The cost of a building can be reduced up to 25-30%
- The strength of the building is not compromised in Affordable Housing and in fact the buildings are made more effective.

- There is a illusion among most of the people that Affordable housing is done using Less quality materials.

References

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- Refrence paper - S. S. Shinde
- [www. Affordable housing.com](http://www.Affordablehousing.com)

