

FUTURE OF TINY HOUSES IN INDIA USING SUSTAINABLE MATERIALS

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Abstract:

Domestic builds have lot of significance as it reflects people personality, character and experience they reside in. In recent years, tiny house movement has become so popular, that many people around the world are encouraged to de-clutter, and live simply meaningful lives with only essential things that are essentially meant to be lived with. In India, with a population of 133, 92 crores in the year 2017 which has increased at speed now, also demands more utilization of living spaces. Understanding as population is raising living spaces are getting smaller every day. Introducing tiny homes in India and using sustainable materials in it can fulfill dream of every Indian citizen "Housing for All" in a very low budget and proving as cost effective solution. Building and designing tiny houses is one of the greatest solutions of all in India for all the class people and becoming financially independent throughout life.

Keywords:

Tiny Homes, India, sustainable materials, cost effective, design.

Introduction:

"Tiny House Movement" which was started in United States was to encourage simple life in smaller spaces. With a large homes comes larger expenses and cost of living becomes much higher. As in India, with increasing population there is a huge demand for living spaces and Tiny houses by incorporating sustainable materials in it will solve huge problems like environmental issues of global warming, less impact on earth of harmful materials and minimal wastage. Sustainable materials as the name suggest materials which will sustain for a longer period of time and also they are eco-friendly. Using sustainable materials for tiny Houses could be the small and most effective solution for many arising and existing problems, reducing waste consumption, and cost of living. Nontoxic materials are less harmful and nonhazardous with no chemicals in it. Sustainable materials like bamboo, cork, wood etc. can be recycled and reused.

Tiny Houses which have person very less belongings and help owners to remove all the unnecessary items and pair down to only necessary things. Tiny houses also help people connect with outside world, nature, and help person to live more enriched and fulfilled life. Tiny Houses which are basically 1/10th of an average home make spaces for multifunctional and minimalistic. In India tiny house concept will work because of the main reason which is affordability. Because tiny house requirement is to go tiny by reducing extra things it will help owner to DE clutter and it will help owners to cut down the cost. Tiny Houses also works on 3 main core concepts which are Independence, Responsibility and Connection.



Figure 1: Ting House

The Tiny House Movement (also known as the Tiny Life) encourages people to downsize their lives, and especially their living footprint. The goal is to help those who partake to redefine what a house is, and hence what as house means, to them. People join the movement for various reasons including environmental awareness, personal freedom, affordability, and a willingness to change their lives.¹

Sustainable Materials in India:

As the name “Sustainable” itself suggests that sustain for longer period of time, sustainable materials are chemical free and sustain for long duration. In India, there is a need to use more of sustainable materials because of lot of existing health problems, pollution, landfill waste, factory waste, there is so much load using sustainable materials not only reduces cost in long term also uses less harmful components hence helping in conservation process. As all are aware that buildings are the major source of releasing carbon dioxide in the air, sustainability is the only choice to decrease the same which also helps in choosing right kind of materials, construction methodologies, and improve performance and decrease the burden on environment.

For choosing materials that are specifically sustainable following parameters are to be considered:

1. Toxic emissions that is going to generated by materials.
2. Pollution and waste being generated during the manufacturing process of material.
3. Locally available materials.
4. Environmental impact.
5. Transport cost.
6. Health considerations.
7. Energy required in manufacturing cost.
8. Thermal efficiency.
9. Use of renewable resources.

Some common examples of sustainable materials that can be used in construction are lime plaster replacing the cement, ecofriendly tiles replacing the conventional tiles, bamboo for roofing and cladding purposes as well as for interior purposes, Natural materials like rice husk, banana leaves, coconut husk from agriculture industry can also be readily used as insulation and other purposes.

Less space more Experience:

The above statement “Less space more experience” suggests that having fewer things to worry about provides extra time and money to experience more in life and also utilizes less resources. Simplification of things lead to minimalism and decrease in living a suffocated life. Living in a tiny house lowers home bills and provides more free time. There are certain ways in which a tiny house can be used multi-functionally hence providing that extra little space for utilization. The methods during construction and designing of a tiny house can be considered are follows.

- Use Fold down Options :
- Use walls efficiently
- High Ceilings for extra height
- Windows for extra light
- Lighter colors for more expansion of area.
- Mirrors for increasing the visual size.
- Utilizing more Sliding walls
- Multifunctional Furniture
- Usage of space under Stairs.
- Loft beds.

Benefits of Living in Tiny House:

Less Expensive: A tiny house takes a lot less than building a full sized house hence reducing the expenses and overall cost of the living.

Lower energy use: Various bills of water consumption, electricity usage, fuel becomes conveniently very less due to less consumption.

Maintenance: With less space to clean and very few appliances tiny houses uses less time on daily chores and more on personal things, hence reducing the maintenance of house.

Simpler Life: What is great about tiny house is there is almost no stress to worry about living in tiny house with very less stuff, less appliances and electronics, only essentials are brought to tiny house which makes living a lot simpler.

Other benefits also include such as energy efficiency, de-cluttering, environmentally friendly.

Disadvantages of Living in Tiny House:

Zoning Rules: Zoning laws of a country makes difficult for tiny house owners to park tiny house accordingly.

Less Storage Space: Because tiny houses requires lot of things to be rid of, it requires person lot of prized possessions also to be given away as of very less storage provided in a tiny house.

Limited entertaining capability: Whenever there are guest arriving a your house you don't have much options for extra bed, or extra seating at dinner table, so there is a space for less people inside a tiny house.

Case study of Tiny House in India:



Figure 2: Case study

The Bunkhouse shown here is comfortably designed with adequate ventilation and is hygienic and meant for prolonged use. The structural details including the furniture & fitments, is based on our proven experience of similar bunkhouse in operation all over India and can withstand all the stress and strain of rough handling, lifting & shifting not only at desired sites but also on rough terrains. These units can be moved/shifted by means of cranes and trucks/trailers. Maintaining the highest structural stability, earthquake proof, weather proof, leak-proof and faultless operation under extreme climatic conditions. Supply of prefabricated bunkhouse for desired

end uses. The life of the bunkhouse is expected to last more than 25 years. The company Buy-India.biz manufacturers and sells these homes.

Buildings Materials Used to Construct a Tiny House:

Roofing: Tar, Paper, Rain and Wind Shedding, Metal Roofing.

Walls: Structurally Insulated Panels,

House Trailer: Plywood, Wood, Lumber, Interior and Exterior Siding.

Insulation: House tapes and wraps.

Paint: Paint and stains, Construction Adhesive.

Flooring: Hardwood flooring, tiles, Mortar, Thinnest Adhesives.

Millwork: Exterior door, Interior doors, windows.

Conclusion:

With the growing population and increasing cost of houses, tiny houses can accommodate those in needs of the basic necessities in response to lack of accommodation in growing and overcrowded cities especially in India.

Such a unit account for the day to day needs of people and enable users to live in a small space having all necessary functions and amenities of a regular home The tiny houses focuses on users willing to downsize their needs on space and save on construction materials, energy resources and everyday cost f living. These houses can also be treated as vacation houses, studio apartments, and office spaces.

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