



House of Hope

A Planet, People and Pocket friendly home



Challenges :

Housing is a basic right, but soaring land prices and exorbitant cost of materials make dreams of owning a house difficult to achieve for many across India. Current practices of constructing houses in India tend to cut off inhabitants from their surrounding natural environment and pay little attention to environmental impacts of building materials across their full life cycle. Moreover, buildings in India are highly energy inefficient and usually fail to factor in seasonal variations or make use of available passive energy sources. Most affordable housing projects also fail to even provide quality living spaces for its residents. By some estimates, India has a demand for 50 million units 97% of houses in the affordable housing segment. The high ecological costs of meeting this important socio-economic right and possible ways of avoiding this zero-sum game is not getting the attention it should.

Solution :

This is a new type of house which has a Rib and Skin Shell Slab System, Light Weight Masonry System and Multi-layer Roofing System

The techniques priorities use of economical and eco-friendly materials and systems, with an emphasis on conserving and protecting resources, recycling and efficient use of materials. Processes that are conducive for the local economy are built into the techniques. The role of aided self-help is emphasized in the solutions.

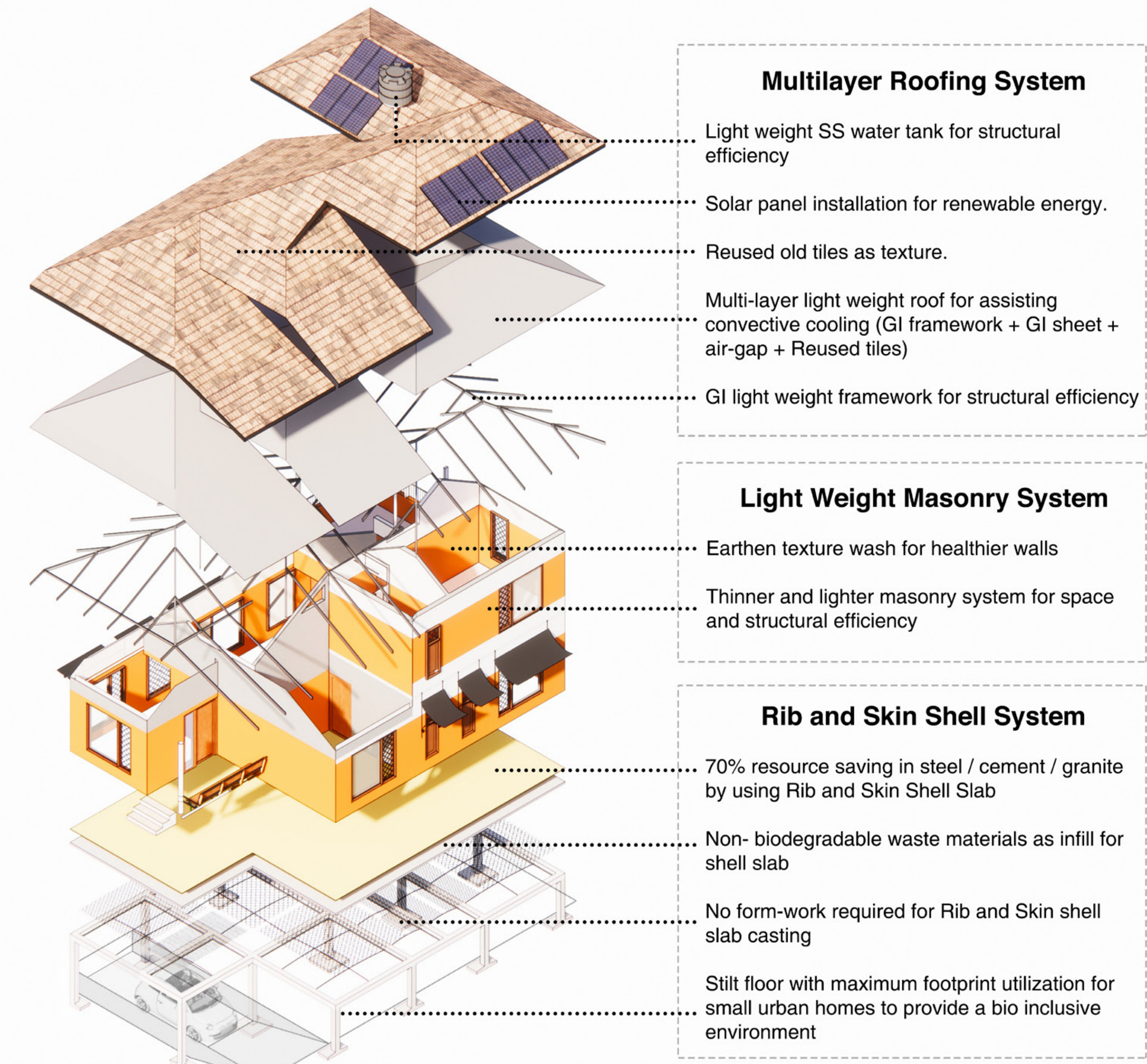
The homes, designed as nuclear-family residential dwelling units, utilize the entire parcels of available land through development of built models on stilt platforms with lightweight floors. The buildings are energy-efficient, climatologically appropriate and culturally relevant.

Results & Lessons Learned:

The modular planning and construction techniques result in material and time saving, requiring a smaller labor force on site. Uptake of the techniques is easy and fast because of their simplicity and localization. Depending on site-specific contexts like accessibility the cost of constructing a building is at least 30% cheaper than a conventional building. This region-specific construction methodology can serve as a conceptual framework to address the affordable and sustainable housing scenario across India and internationally.

Salient features of this innovative methods of house construction are:

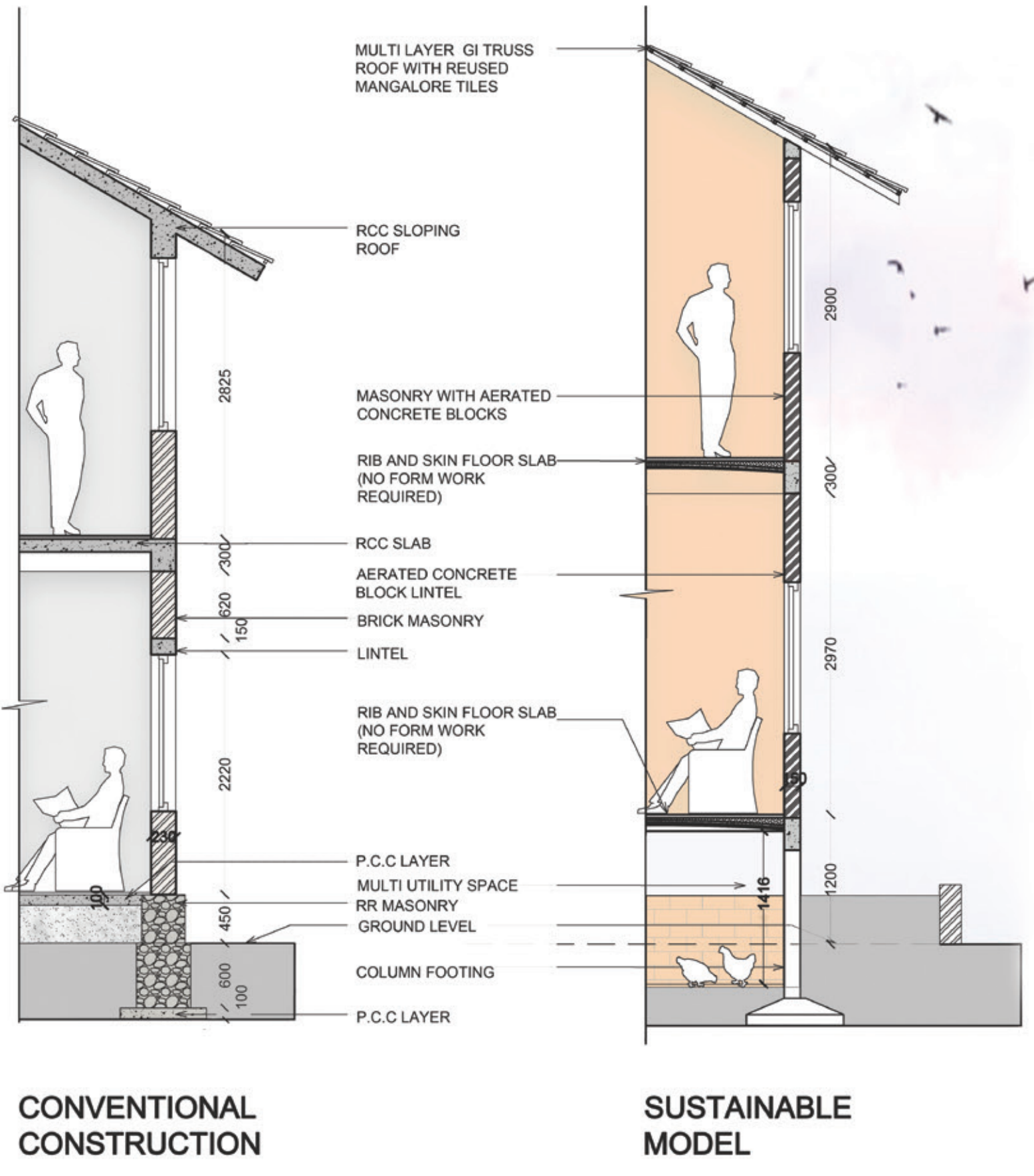
- The buildings can be erected faster with a smaller labour force.
- Light weight buildings lead to savings on materials and foundation.
- The houses are more suitable for human occupation achieved through better insulation and passive cooling.
- Improved systems of layout of spatial planning, ventilation, plumbing and waste management helps in achieving cost saving and conserves energy.
- Every bit of available land is put to use through development of built model on a stilt platform with light weight floor
- A holistic built environment of clean and healthy surroundings pleasing to the aesthetic sense and conducive to local economy is achieved through backyard farming, cattle, poultry etc.
- Modular planning and construction techniques results in material and time saving
- Locally made special type of form work for efficient construction methods and resource saving.



The climate change and affordable housing are inseparably linked and also in close parity with the social, economic and ecological well-being of the nation. The current practices of 'Green certified Housing' is an unaffordable model for the masses.

"The House of Hope- A Planet, People and Pocket friendly home" serves as an innovative technological solution that can

be adopted across all regions viz, flood plains, hot arid and hot humid zones, cold zones and earthquake zones. Prototype is also a scalable model which can be followed for both low-income housing and bungalow type of premium housing. The highlight of the sustainable affordable prototype is that it consumes **67% LESS CONCRETE, 75% LESS STEEL AND NO RUBBLES** as compared to a conventional house typology of similar scale.



Item	Approximate Quantity for conventional model	Approximate Quantity for Sustainable model	% of resource saving
Concrete(m³)	60	20	67%
Steel(kg)	3200	800	75%
Random rubble(m³)	37	0	100%

