

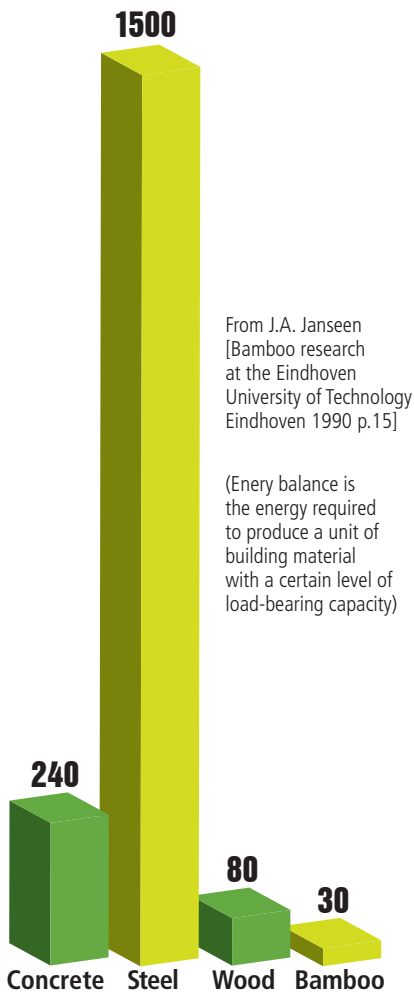


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# Green Homes: Best Practices

We often hear the cliché that drops of water make an ocean. In this article, we explore what are these ‘drops of good practices’ which can help in rectifying the mal-conceived modern practices, born out of addiction to convenience, instant gratification and the constant need to keep up with the Joneses.

## Energy balance of various building materials in MJ/m<sup>3</sup> or N/mm<sup>2</sup>



From J.A. Janseen [Bamboo research at the Eindhoven University of Technology Eindhoven 1990 p.15]

(Energy balance is the energy required to produce a unit of building material with a certain level of load-bearing capacity)

Hence Bamboo is Sustainable and Green!  
Centre for Green Building Material and Technology, Bangalore

The smallest unit of an organisation is the family - with its needs, culture, operating system and unwritten policies. Half a century back in India, most families lived jointly and by default, the resource intensity was optimised, in terms of the material used for dwelling, the consumption of food and collective entertainment. In rural India, the joint family system still exists. However, the difference is that some members have shifted to urban centres in search of jobs, as the land holding, divided over decades in the families, is unable to sustain the food needs of the joint families any longer. All this began to change with modernisation, higher percentage of literacy and influence of the external world. In urban areas, the nuclear families have become a norm, which has resulted in sub-optimisation of resources.

### The resource reality

Infinite was a word encoded in our collective mindset, when it came to the availability of resources. It is only now that a small percentage of the population is learning to understand the finiteness of these resources. In reality, for a vast number of poor people, finiteness is a daily reality in terms of trying to access the basic necessities of life, like food, water, fuel and sanitation facilities. If the three billion underserved people of the

universe were to emulate the practices of the rich of the western countries, it will place a huge burden on the creaking resources of the Mother Earth.

### Industrial reboot

Hence disruptive innovation is the need of the hour in every domain - be it housing, transportation, consumption of energy, food procurement consumption and waste management.

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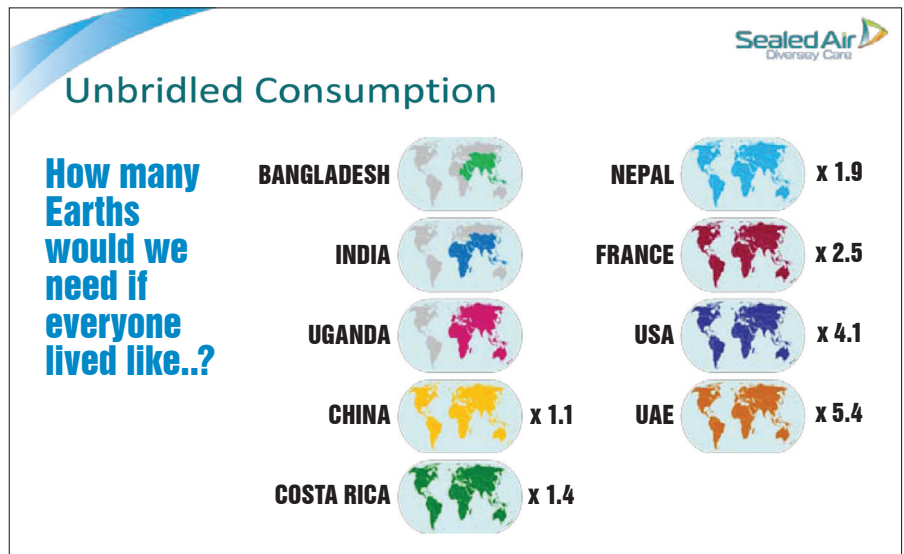
**Housing** - Considering the difficulty in getting sand, aggregate and bricks for housing, work needs to be done on converting fly ash into sand and aggregates. The fly ash bricks and fly ash cement can become a reality by the building research and material arm of the Government of India. Bamboo is a versatile material with greater tensile strength than steel. This rapidly growing, renewable

material needs to be re-incorporated in housing sector for making doors, frames and other household items. It is stronger than wood or timber in tension and compression. The tensile strength of the fibres of a vascular bundle could be upto 12,000 kgs/sq cm, almost twice that of the steel. Hence much less material is needed to be used for the same strength. (Source – Centre for Green Building Material and Technology)

Renewable energy costs have dropped at an amazing rate in the last few years. A domestic lighting system which was available for ₹20,000 is now available for ₹4,500 consisting of two lights with one DC fan operating capability. Approximately 1.25 lakhs of solar power will take care of the light and fans of an average home with two rooms and a drawing room. Some states are giving a subsidy and some states have introduced a net metering concept, such as Kerala. This means the home solar-system pumps power in the grid during day time and in the night, the power consumed is adjusted with the units pumped into the grid during day time.

**Water management** - Considering dwindling availability and inconsistent supplies, rainwater harvesting is the easiest way of augmenting water in each home.

**Waste management** - Waste is a misplaced resource. The first principle of waste management is not to create waste.



For both water and waste management, please download a user-friendly training module from [www.itshotels.in](http://www.itshotels.in) from the 'Environment' section of the website.

The intent of this article is to highlight and to reduce our material footprint as quickly as possible by use of rapidly renewable materials such as bamboo.

Our existing growth trajectory is poised on a path towards suicide, the chart 'how many earths we need' will help us to help try and comprehend the enormity of the global challenges.

*(Views expressed in the article are that of the author, Niranjana Khatri, General Manager, Environment Initiatives, ITC Hotels)*

H/P