

# AN ECO-FRIENDLY CONSTRUCTION IN INDIA USING BAMBOO AND 90% RECYCLED WASTE

In the Kerala State of India an innovative construction has been created by the architect Ashams Ravi, using bamboo for the skeleton and 90 per cent of recycled materials for the entire building process. The house is built using techniques that are eco-friendly, keeping the carbon footprint at a minimum.

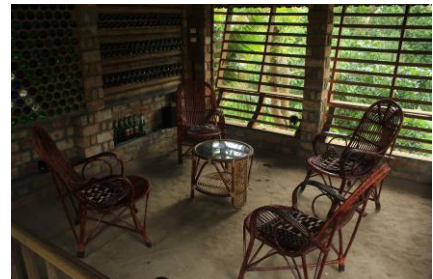
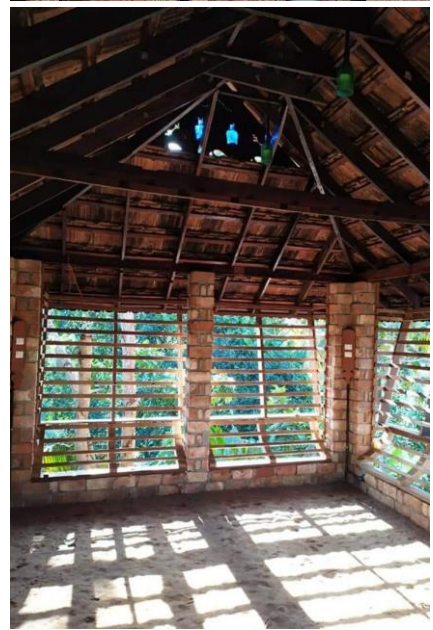
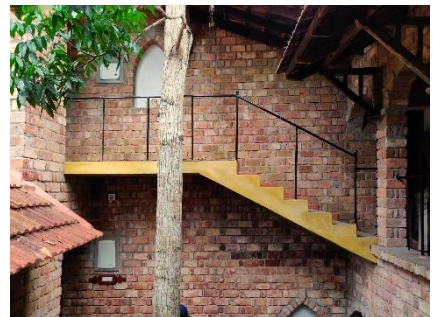
Raising his own house in a record time of 4 months, the architect created an extraordinary prototype of ecological building, which fits harmoniously into the surrounding environment, which is inspired by traditional architecture and uses recycled materials generating architectural effects of high aesthetic level.



The architect adopted most of the [sustainable building techniques skills](#) promoted by the Centre of Science and Technology for Rural Development (COSTFORD) where he works since 2014. These ecological techniques reduce the impact of the current construction industry, which generates high levels of carbon emissions and water pollution, in addition to amounts of waste in landfills and in the environment.

The article published by [The Better India Magazine](#) presents the main features of the extraordinary construction designed and built by Ashams Ravi, which attracted the interest of numerous newspapers:

- The house has been constructed as a natural extension of the environment, accommodating the architectural plans to build around nature. The two-storey house is situated on a sloped land and the architect decided to just adapt the construction process retaining all the existent trees on the site instead of digging up the soil to level it. Also, there was a big mahogany tree which was right in the middle of the plot and the building has been adapted around it. Today it is a part of the house. An artificial wetland that recharges groundwater has also been built, planting species of grass and arrowroot.
- Renewable materials like bamboo and coconut form the skeleton of the building. Not only Bamboo is well known for its characteristics of tensile strength, superior to those of steel, but it grows abundantly in the territory of Kerala and its use in construction can bring important economic benefits to the local communities that grow it. The trunks of coconut trees have also been used as pillars of the house. Bamboo and coconut have been treated with borax as it helps in crystallizing the fat content that is highly sought after by insects. The other local materials used to build this house were wood, mud, lime and brick. Roofing has been done using wood and *terracotta* tiles. Bamboo and mud have been used in certain portions of the roof.
- 90 per cent of the materials used in the construction process are recycled. The use of cement was minimal as the manufacturing



cycle starting from the production of limestone in the quarry to its transportation and use has a lot of carbon footprint. The recycled materials to build the house included reused timber, Mangalore pattern tiles, bricks, steel and rubble sourced from sites where buildings have been demolished in and around Trivandrum. Using a network of people who sell materials from demolition sites, the architect was also able to obtain a few eclectic pieces that have added a certain rustic charm to the house, as wooden ancient doors and window frames. Beer bottles have been repurposed to make lampshades around the construction and an entire wall in the house is made from recycled beer bottles and plastered with mud and lime. There are also lampshades made using broken glass bottles. These features add to the character and beauty of the house.

Based in the Kerala State, since 1985 the [Centre of Science and Technology for Rural Development COSTFORD](#) is a prestigious local and national point of reference for ecological and sustainable architecture. One of the founders was the architect known for his sustainable building practices, Laurie Baker. The Centre is a non-profit organization that collaborates with programs for sustainable and low-cost housing construction in underprivileged rural areas. However, thanks to the high technological level achieved and the prestige acquired, a large number of private customers interested in designing and building their homes with ecological criteria also require the professional services of the Center.

In fact, the house built by Ashams Ravi for his family shows how, by choosing the use of local materials and circular economy strategies, ecological technologies allow to build very beautiful houses that are suitable for the needs of a modern lifestyle. Numerous articles in local and national newspapers and magazines have enhanced the characteristics of this green house, helping to spread interest and demand in the most diverse social context for a new type of construction that is more respectful of the environment and natural resources.

#### To know more

[Article in The Better India Magazine](#)

[Video in Youtube](#)

[Ashams Ravi in picuki.com](#)

[Article in newindianexpress.com](#)

[Article in magzter.com](#)

[Costford building technologies](#)

[Costford website](#)

[Laurie Baker in homegrown.co.in](#)

[Costford Publications](#)

