

# SPAN

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# Smart Urban Planning

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- Water management
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- Preservation of cultural resources
- Designing for climate change





IVLP participant Roshni Udyavar Yehuda shares her thoughts on India's transition to sustainable buildings and ecofriendly construction.

# 50 Shades of Green

by Roshni Udyavar Yehuda



The concept of "green building" as an element of smart urban planning, involves ecofriendly construction that is self-sustainable, energy-efficient, and ecofriendly waste. Beyond these practical features, green buildings also represent a philosophy, where architecture and nature are seen as working in tandem.

Under Udyavar Yehuda's leadership, the concept of green buildings is being implemented at the level of Roshni Udyavar Yehuda's Institute of Architecture.



Views of DehshiroChitra, a museum in Gandhinagar, dedicated to South Indian heritage and culture. The Chidambaram Temple, built in 1314, represents the history of the Chidambaram district and the Western Heritage of Karnataka. The temple's architecture and art pieces include the museum (above center), the Tamil Nadu Museum House (top), Gandhinagar Village is representative of the ancestral history of the Gandhinagar District, a world-class community library, and a Shiksha House from Anantur village (left).





Roshni Udyavar  
Yehuda

<http://goo.gl/EyFYyR>

U.S. Agency for  
International  
Development

[www.usaid.gov/india](http://www.usaid.gov/india)

U.S. Green  
Building Council

[www.usgbc.org](http://www.usgbc.org)

Green Rating for  
Integrated Habitat  
Assessment

<http://grihaindia.org>

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Architecture in Mumbai, she has extensive experience in the field of environmental research. An architect by profession, she has worked at the Mumbai-based International Institute for Sustainable Future as the head of a sustainable development program. Yehuda has helped develop the Eco-housing Assessment Criteria and Rating System for Pune and Mumbai in collaboration with Science and Technology Park, Pune; International Institute for Energy Conservation; United States-Asia Environmental Partnership; United States Agency for International Development (USAID); The Energy and Resources Institute and Rachana Sansad. Yehuda also participated in the U.S. State Department's International Visitor Leadership Program on environmental protection in 2009.

Excerpts from an interview.

Can you tell us about the practical implications of green buildings and the ways in which the overall philosophy of architectural design working together with nature has been successfully manifested as workable project designs?

The modern concept of “green building” focuses on resource efficiency. More advanced rating systems have benchmarks for building performance. However, I think that green building is fundamentally about reducing and managing our resource consumption. This includes human behavior toward a sustainable lifestyle and community coherence. Green buildings cannot just be a numbers game and complicated simulation models. They have to be grounded in reality and in context of a place and its people.

**Above:** Brunton Boatyard hotel in Fort Kochi employs various sustainable practices like rainwater harvesting and waste water recycling.

**Right and far right:** Cement House, the corporate headquarters of ACC Ltd. in Mumbai, has received a Gold Shield from the Indian Green Building Council for Leadership in Energy and Environmental Design under the New Construction and Major Renovation category as well as a five-star rating from the Bureau of Energy Efficiency.





**You were part of the USAID-sponsored Indian delegation to study green buildings in the United States in 2004. What were some of your most interesting findings? Are there particular green buildings in the United States that you really liked?**

What I recall with distinction are a few projects like the community with interesting eco-houses near the University of California, Davis. Each house has a yard full of fruit trees, compost and no border fences. Another was the straw bale-constructed Shorebird Park Nature Center in Berkeley, California. The U.S. Environmental Protection Agency (EPA) building in California was also remarkable.

In all these buildings, what interested me is the effort by occupants, developers or users to make the change toward sustainability. Aesthetics and technology were secondary.

**Did you find any particular examples of green buildings or technologies that you thought would work well in Indian cities?**

Technologies could be applied anywhere, but the Indian context is different. The culture, scale, consumption patterns and lifestyle have very few parallels. Green buildings in India need to be suitable to the context.

**In comparison to the United States and other countries that implement the concept of green buildings in their city planning, where does India stand today?**

If green building is about resource efficiency, then I would say that India has a greener footprint as compared to the U.S. or many other western countries. This is because nearly 70 percent of the population of the country is residing in villages with minimal footprint. In contrast, the educated urban dwellers, particularly in the information technology and other service sectors, are increasing their consumption to equal or even surpass the per capita consumption of the western world. It is in this category that we have seen a huge mushrooming of the concept of "green building."

Green building rating agencies, such as the Indian Green Building Council (IGBC), which has been around for more than a decade, as well as others like Green Rating for Integrated Habitat Assessment (GRIHA), boast of several million square feet of green building. Still, there is a long way to go.

**Which are some of the most successful green buildings in India?**

Specific green buildings that I favor are:

**Below:** Eco-houses near the University of California, Davis, with fruit trees and compost facilities.  
**Bottom:** IGP Office Complex in Gulbarga, Karnataka, effectively uses existing landscapes, recycled building materials, renewable sources of energy and water conservation techniques.



Photographs courtesy Roshini Udayavar Yehuda

BCIL (Biodiversity Conservation India Ltd) T-Zed buildings in Bengaluru; Torrent R&D Centre, Ahmedabad; IGP (Inspector General of Police) Office Complex in Gulbarga, Karnataka, which is India's first government building to achieve a LEED (Leadership in Energy and Environmental Design) Gold rating; Cement House in Mumbai, a LEED Gold-rated and BEE (Bureau of Energy Efficiency) five-star-rated building; Brunton Boatyard hotel in Fort Kochi, Kerala, which has all the green features like rainwater harvesting, waste water recycling, but is not rated; and DakshinaChitra in Chennai—a complex designed by Laurie Baker to showcase South Indian architecture.



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