



## Cuba's disaster-hit homes get eco-friendly rebuild

By **Shasta Darlington**, CNN  
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Cuba's storm-proof eco-houses

### STORY HIGHLIGHTS

Disaster affected homes rebuilt using low-tech and environmentally sensitive materials

Scheme is brainchild of Cuba government research and development institute

Project has been export to many other Latin American countries

**Havana, Cuba (CNN)** -- "We never imagined having a house like this," says Eric Martinez as he walks through the three small bedrooms with their flowered quilts and family pictures.

The walls are freshly painted and pink curtains hang in the windows.

"When the hurricane came through it left nothing, nothing at all," he says. "It wasn't just one house that was destroyed, it was a bunch."

Hurricane Gustav slammed into the Cuban coastal town of Los Palacios in August, 2008, a dangerous category 4 storm. It damaged 84 percent of the homes, many of them made of wood. Ten days later, Hurricane Ike tore across much of Cuba, dumping torrential rains on Los Palacios. And then in November, Paloma struck the island. The government put the combined damage at \$10 billion.

Now, a unique program helps victims like Martinez re-build their lives -- and their homes.

"Here, nobody imagined we would recover so quickly. And when you build for yourself, you feel good," said Martinez.

New houses have gone up all along the hurricane corridor in the western province of Pinar del Rio. Many of them are made entirely or partly of "eco-materials" -- local resources turned into construction materials at a low cost -- and all done in the community.

The project is the brainchild of Cuba's CIDEM research and

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development institute.

## Nobody imagined we would recover so quickly. And when you build for yourself, you feel good

--Eric Martinez, resident of post-hurricane house

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"In a context where energy is very expensive... and where resources are expensive and the environment is being destroyed, you have to look for local solutions" explained CIDEM director Fernando Martirena.

After hurricanes, floods and earthquakes, CIDEM moves in quickly to set up mini-factories using its own low-tech machinery.

"Usually in the aftermath of a disaster, the choice is whether you have tents or one of these workshops," Martirena says. "We choose to develop technologies so you can come soon after the disaster, organize the local population and produce the materials for real, lasting houses."

In Los Palacios, CIDEM set up a mini-factory last year. Five workers operate a simple contraption that uses vibrations to turn out blocks made from local gravel, sand and cement. "This machine has the capacity to produce 1,200 blocks a day -- that's equivalent to a house," regional manager Jose Miguel Capote explains.

Row upon row of the bricks dry in the sun before families pick them up to start re-construction -- usually only a few blocks away.

Across the mountains, a similar workshop churns out bricks in the northern coastal town of Bahia Honda. On a nearby residential street, Rene Garcia, a cafeteria worker, mixes cement and his wife offers juice to one of the professional builders provided by the government.

"Whatever he tells me to do, I do it," Garcia says of the builder. "Anything to finish this quickly."

In Cuba, the government works closely with CIDEM. They provide professionals to oversee the work and they guarantee hurricane victims paid leave from their jobs in order to rebuild houses. CIDEM has set up workshops in 18 countries in Latin America, five in Africa and most recently in Asia, with funding primarily from Switzerland and Canada.

"These are labor intensive technologies because they are targeting developing countries where unemployment is a great issue," Martirena says.

"The environmental impact is about saving energy most of all," he adds, pointing out that little or no transportation is needed.

The houses cost up to \$15,000 in Central America, for example. There, the bill is often picked up by the local government and non-profit organizations.

Mileidy Rodriguez hugs 9-month-old Adrian as workers slap cement on her front wall. For now, her house is just a skeleton: a cinder block bathroom, cement kitchen and bedrooms made from wooden planks.

"My house, look how it's coming," she says proudly. "We'll be living here soon, and probably better than before." Rodriguez' old house was flattened by Gustav while she and her family sought shelter with her mother.

She can barely hold back tears when she talks about it. "Just imagine," she says. "We were left homeless with two children, and a third on the way."

Many Cuban families are still homeless. But CIDEM helps ensure

those who rebuild have homes that will survive the next hurricane season.

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