

Environmental Engineer Mark Reiner

BREAKING NEW GROUND



Mark Reiner, right, and Colorado volunteers have trained Rwandan workers in sustainable building techniques.

PHOTO BY MARK REINER

Eco-lodge will support Rwandan orphans

By Lisa Marshall

KIBUYE, RWANDA — Standing on a pristine beach between a towering eucalyptus grove and the virgin waters of Lake Kivu in 2006, Boulder engineer Mark Reiner listened intently as an idealistic orphanage director named Victor Monroy painted his vision in vivid detail.

On this remote shore, Monroy explained, there could someday be a lodge, where visitors would come to paddle dugout canoes, swim in the “delicious” waters, dine on Rwandan cuisine, and immerse themselves in African culture. It would be sustainably built, powered by wind and sun, and run by locals. And most importantly, all profits would go toward educating the 105 children—many of them survivors of the 1994 genocide—at Children’s Village Kigarama, the hilltop orphanage Monroy runs nearby.

‘Ninety percent of nonprofit projects fail, because there is no mechanism in place to maintain them. With this model, you create a business as the economic engine for all the cool things you want to do.’

“It really tripped my trigger,” says Reiner, 43, president of Symbiotic Engineering, and former projects director for Engineers Without Borders (EWB)–USA. “It has been my experience that 90 percent of projects from nongovernmental organizations (NGOs) fail, because there is no mechanism in place to

keep them well-maintained and in operation. With this, you’d create a business as the economic engine for all the cool things you wanted to do.”

A Colorado School of Mines graduate with a Ph.D. from CU-Denver, Reiner first took an interest in sustainable engineering in 2002, when he volunteered with Engineers Without Borders on a water-harvesting project for a remote village in Mali, West Africa. He’s since built his Boulder firm around helping private companies



Birambye Lodge will front Lake Kivu in Kibuye, Rwanda. Proceeds from eco-tourism will help maintain the nearby orphanage and provide vocational training for its students.

and governments—from the city of Kigali, Rwanda, to the city of Longmont—assess their environmental impact. In his spare time, the 43-year-old father of two has sought to help impoverished communities in the developing world boost their economies without compromising their ecology or culture.

UNSPEAKABLE MEMORIES

Reiner met Monroy on a volunteer trip to Rwanda, and has since plowed ahead with the lodge project. He's formed the nonprofit Birambye (which means "sustainable" in the Kinyarwandan language), secured a 120-acre land grant from the Rwandan government, enlisted a team of CU students and other volunteers to help design and build it, and partnered with the Rwandan Genocide Student Survivor's Association on a plan he believes could serve as a model for NGOs.

The lodge, projected to be completed in 2009, comes at a time when Rwanda has only recently returned to the tourist map after a savage genocide that leveled the country's infrastructure and wiped out more than 10 percent of its population. In April 1994, machete-wielding Hutu Power militias swept through the tiny central African country—a former Belgian colony—carrying out a bloody campaign to exterminate its minority Tutsi ethnic group. One million people were slaughtered in 100 days, and countless others lost limbs and endured unspeakable torture at the hands of the "génocidaires." Since then, the country has undergone a promising recovery, with a stable government in place, an infusion of foreign investment, and a resurgence of tourists who come to see its rare mountain gorillas and trek through the jungle in Nyungwe National Park. But a daunting challenge persists: what to do with tens of thousands of young adult orphans who have no education, no money to get one, no land left to farm and no other jobs available.

Monroy notes that roughly one-third of the children at Children's Village Kigarama are 18 or older, meaning they are no longer eligible for aid. The rudimentary orphanage was founded in the fall of 1994 by a German NGO, L'Espérance, which continues to fund basic needs for children under 18. But Monroy says the money is scarcely enough and could go away at any time. A Guatemalan-born educator, Monroy left a comfortable life teaching sustainable agriculture in European colleges to come to this remote outpost four years ago, and he has since made it his life's mission to make the orphanage economically self-sustaining. He's planted crops—including pineapple, avocado, mango and papaya—on every sliver

of the lush 18-acre property, and is now working with EWB to devise a system for packaging and selling the fruit to raise money for orphanage operations. Meanwhile, proceeds from the eco-lodge would provide vocational training for the older kids.

AFRICA'S FIRST GREEN BUILDING

Reiner says the lodge, when complete, will be the first building in Africa to be certified by the nonprofit U.S. Green Building Council. Initial plans include six lakeside cabanas with decks and a dining lodge—all with thin-shell concrete roofs, locally harvested bamboo framing and flooring, and traditional thatched exteriors. Wind turbines and solar panels will provide power. Food will be locally grown and prepared by chefs from the nearby culinary school, older orphans will hold jobs there, and guests can walk to the shoreline market to buy crafts from Congolese merchants who travel by boat to sell their wares. Ultimately, the lodge could grow to 15 cabins (at \$50 per night, not including meals or entertainment) and generate \$150,000 annually.

"You can go to a lot of places in Rwanda and spend \$400 a night to feel like you are in Belgium; you have no connection to Rwanda," Reiner says. "People will come here if they want to interact with the community."

In September, Reiner returned to Lake Kivu with a team of Colorado volunteers to build a new open-air kitchen for the orphanage, in the same style that the lodge will be built in, and teach local contractors the appropriate techniques. "I've got to say it is the coolest structure ever built in eight days, through six thunderstorms, using no power tools and harvested rainwater," Reiner wrote in an e-mail from Rwanda.

With plans complete and land in place, Reiner has shifted his attention to fundraising. He traveled to the U.S. Green Building Conference in Boston in November to offer a presentation about the project, and is applying for grants. Birambye hopes to raise an additional \$50,000, start building this winter, and open the doors in 2009.

"We are just one grant away from breaking ground," says Reiner, who has no doubt that grant will come. "I view myself as anything but a dreamer. If I say I am going to do something, I do it." ♦

For more information on Birambye, log on to www.birambye.org.

Lisa Marshall is a freelance journalist and mother of four who lives in Lyons. She spent three weeks in Rwanda in February 2008.



Rwanda's orphans hold a special place in Reiner's heart. Many children lost their families during the country's genocide, in which 1 million people were killed in 100 days of bloody fighting.