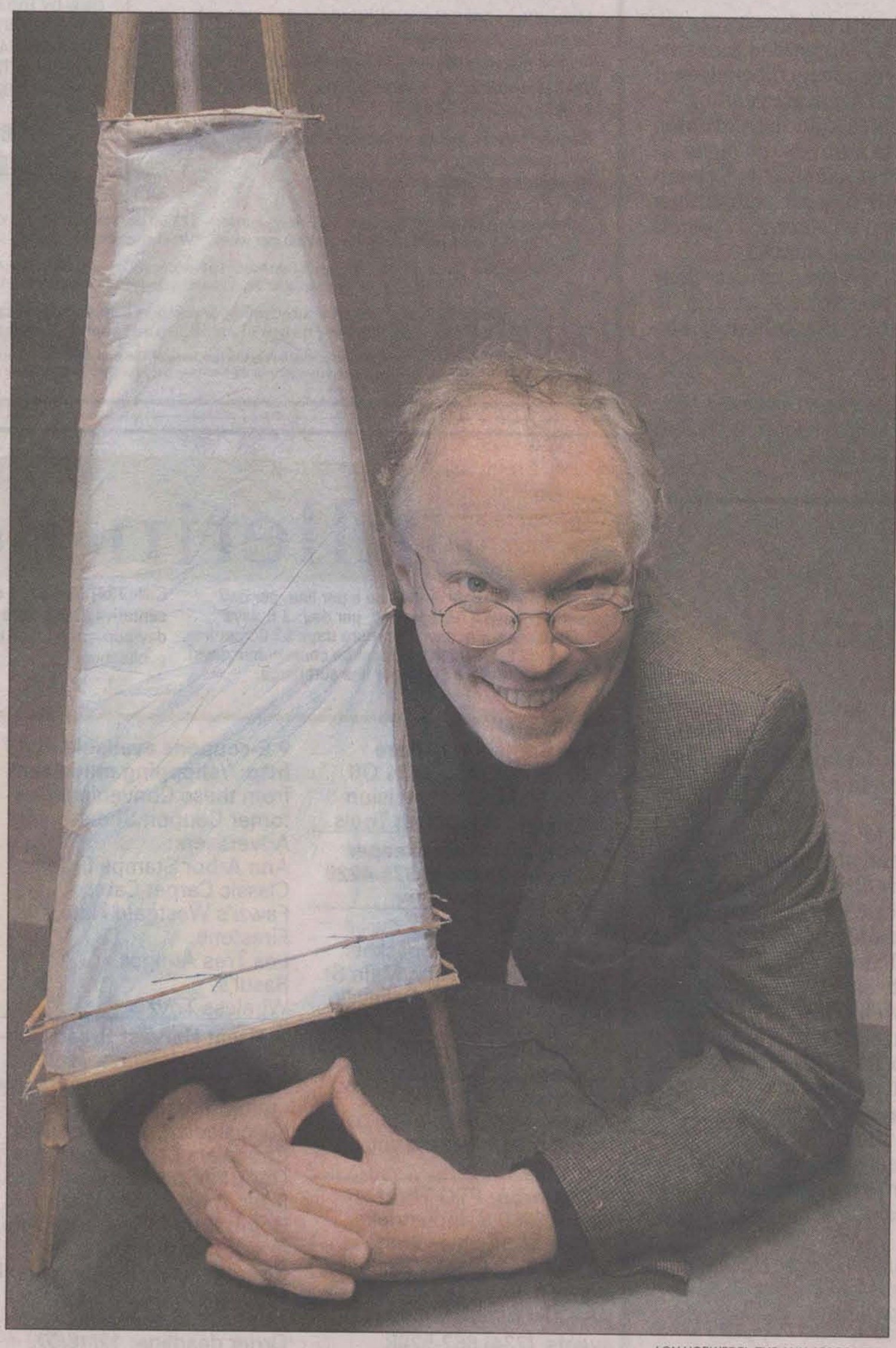
AL

Police Beat, A4



LON HORWEDEL, THE ANN ARBOR NEWS

**Ann Arbor resident John Barrie displays one of his GaiaLux LED lights. Intended for use in the developing world, the lights are powered by recycled cell phone chargers. The lights can use batteries that charge when power is available and will run for days on battery power alone. Although LED task lights are energy efficient, they're expensive. The GaiaLux light reduces cost by recycling phone chargers, reusing of some of the 125 million chargers that are thrown away in the U.S. alone each year. This prototype is made from bamboo sticks and a recycled white plastic bag.**

# Helpful inventors give away ideas

## Architect spearheads nonprofit

JUDY McGOVERN
*The Ann Arbor News*

John Barrie is interested in a different kind of client.

Oh, it's not that the folks who've hired his Ann Arbor architecture firm haven't been great – and let him pursue his passion for environmentally sound design.

But, well ... there are people who are in a position to pay a whole lot less – in fact, nothing – and who need a whole lot more.

With his family's blessing, Barrie is transitioning from his life as the principal at the firm that carries his name to full-time executive director of the nonprofit Appropriate Technology Collaborative.

When he talks about it, it's easy to believe that this is a man who's eager to get up each morning.

"We can reach 1 million people in five years," Barrie says. "It's absolutely realistic."

Those people are the low-income residents of places in the developing world where there's little or no electrical service, clean water or sanitation; where health suffers because vaccines spoil and the available fuels foul the air.

They are, in other words, people not served by appropriate technology.

Barrie and his cohorts have a plan to change that.

And it's elegantly simple.

Working individually and cooperatively, designers, engineers and other like-minded, inventive souls can devise solutions to

SEE **MCGOVERN**, A5

MCGOVERN FROM A3

# Inventors come up with ideas, then give them away

what are, in the end, technology problems. Let's say lighting in a place where power is intermittent or nonexistent.

A solution deemed appropriate – that is economically feasible, environmentally sound and sustainable – is given away.

Right. It's free.

"You can have the plan and make the device for yourself," Barrie says. "You can use it to go into business and provide these technologies to your community."

The drawing will be on the Web. "We're just going to ask people to let us know they're using them," Barrie says.

Indeed, the nonprofit collaborative aims to offer education and training on the manufacture, use and maintenance of the technologies it offers.

Barrie has several designs that are ready or close-to-ready:

- An inexpensive wind turbine.
- A system for making charcoal – an important fuel – with agricultural plant waste instead of wood and, in the process, capture gas to create a second fuel.
- An LED light fixture that uses recycled cellphone chargers as the power supply.

That light is entered in a NASA design contest. Should it win anything, Barrie says the prize will go to the nonprofit.

## Needs all over the world

If you can't quite wrap your brain around the value of cobbled-together gadgets like Barrie's "GaiaLux World Light," (the version he provided for a photo uses bamboo and an old plastic bag in its construction), consider the interest expressed by Fadil H. Ukiqi, who found Barrie online and reached him by e-mail from Pristina, Kosovo:

"I am fascinated by LED light," he writes, later apologizing for his "Tarzan English."

Due to war, power in Pristina is cut at least 10 hours a day. "Can we apply your design? Can we create a collection of old phones and share with you or somebody else in need? I would like to be part of this human idea!"

And there are millions of people in worse shape, in squatter cities all over the globe, pirating a bit of electricity when they can, using scarce resources to pay for kerosene when they can't.

"We can give them something that costs less, provides better light, avoids pollution and eliminates the risk of fire and respiratory problems," Barrie says.

If you think he's fired up about the light, wait till he starts talking about solar-powered refrigeration.

In remote parts of the world, he says, half of all vaccines spoil before they can be used. The problems posed by tapping solar power have been tough. But Michigan State University engineering students, enlisted to help the Appropriate Technology Collaborative, made a real breakthrough just this month.

They built a prototype that works, says Barrie, delighted that the foursome working on the project solved what he describes as a geometry problem. Their effort was rewarded with the top prize in a design competition at MSU.

There's more work to be done, but a major hurdle has been cleared.

## Collaborators a diverse group

Barrie grew up in Ann Arbor and has the pedigree to prove it: Burns Park Elementary, Tappan Middle School, Pioneer High, the University of Michigan, where he was a math major.

His wife, Karen, is also a Pioneer grad.

But she saw a lot of the world early. Her dad worked with the Quaker organization, the American Friends Service Committee, and the family traveled a good deal. Living in Zambia creates an appreciation for the challenges people face elsewhere.

Karen is very supportive of his career move, Barrie says.

Two of their three kids are out of college. The third is high-school age. And, as he makes the change, Barrie has given up "expensive hobbies." Like flying.

His collaborators are a diverse group.

They include folks here at home: Jim Rees, a high school buddy who works for U-M's Center for Information Technology Integration, and Stuart Cohen, a retired U-M hydrodynamics engineer. They include acquaintances made online with people continents away.

"The Web provides an amazing way to find people and connect," says Barrie, who edits www.sustainabledesignupdate.com and is a contributing writer for www.ecogeek.org.

He relates the story of a tiny community in Guatemala where a Guatemalan engineer, working from designs he found online, created a mini-hydroelectric project that now services a cluster of perhaps 40 homes.

"He fabricated a turbine and voltage converter, and a circuit board, from online designs. It was sheer ingenuity," Barrie says, "and the man had been working as weaver because there were no jobs for him."

The potential of unharnessed human capital seems immense.

Next month, Barrie heads to Guatemala meet with folks at some nonprofits. There's also a workers' cooperative in Nicaragua he'd like to visit to talk about assembly work.

In the meantime, you can find his LED light by following the link from www.gaialux.com to the NASA design contest. One of the ways the contest is judged is by the number of page views each entry generates.

If you take a look by Dec. 31, you might just help raise a little money for Barrie's nonprofit. Of course, just raising its profile is fine, too.

*Judy McGovern can be reached at 734-994-6863 or jmcgovern@annarbornews.com.*

## Online

- Appropriate Technology Collaborative: www.apptechdesign.org
- The GaiaLux World Light: www.gaialux.com