

SOLAR ATTRACTION

Kling Magnetics, Inc., SunDog Solar, and Solaqua Power and Art

By Ann Braybrooks photos by Hillary Harvey

Renewable energy. The arts. Combine the two to create a unique arts and business complex powered by sunlight, an existing waterfall, and possibly even recycled vegetable oil from local restaurants. Do this by rehabilitating and redeveloping a sprawling former box-board mill that straddles a section of the Stonycreek Kill, about a mile from the village of Chatham.

Add all kinds of cool things: artist studios; workshop space for ecofriendly woodworking, metalsmithing, and tilemaking businesses; and a huge green building center, where prefab homes with integrated energy-efficient systems can be manufactured. Maybe even construct a carbon-neutral ecovillage on the property adjacent to the mill, and simply move those energy-efficient, prefab dwellings down the road. Encourage residents to leave their cars in a lot off the main thoroughfare and use electric vehicles, or, better yet, their legs and feet, to get to their front doors. Some residents might even be able to walk from work to home if they hold one of the “green-collar” jobs at the Solaqua complex, or if they work at the restaurant or performance space envisaged for the property.

Solaqua Power and Art is the dream of Jody Rael, owner and president of Kling Magnetics, Inc., a manufacturer of custom magnets and magnetic products, and SunDog Solar, a renewable-energy consultation and installation business that Rael launched this past August as Solaqua’s first incubator business. All three businesses, with about two dozen workers (some of whom change hats, depending on need), are housed in a combined office building and manufacturing plant on the large mill property that Rael purchased in 1997.

In keeping with Rael’s green philosophy and plans for the site, eight solar electric (photovoltaic) panels mounted on poles have been installed alongside the dirt parking lot between the ’60s-era manufacturing plant and the century-

old mill. The panels, which have been operational since June, provide 12.6 kilowatts of power to the building where Rael runs his three businesses and conducts research on renewables. The goal for the PV solar system is to offset escalating utility costs while conserving energy from nonrenewable sources, such as petroleum products. Rael hopes that the new system will handle one-third to one-half of the building’s energy needs.

With a grant from NYSERDA (New York State Energy Research and Development Authority), Rael and crew have also launched a solar thermal (solar hot water) project. It consists of three arrays of evacuated tubes, flat-plate solar collectors, and a hybrid system that works in conjunction with traditional propane-fueled or electric water heaters. Since April, a prototype solar-thermal system has provided all of the hot water for the Kling Magnetics building.

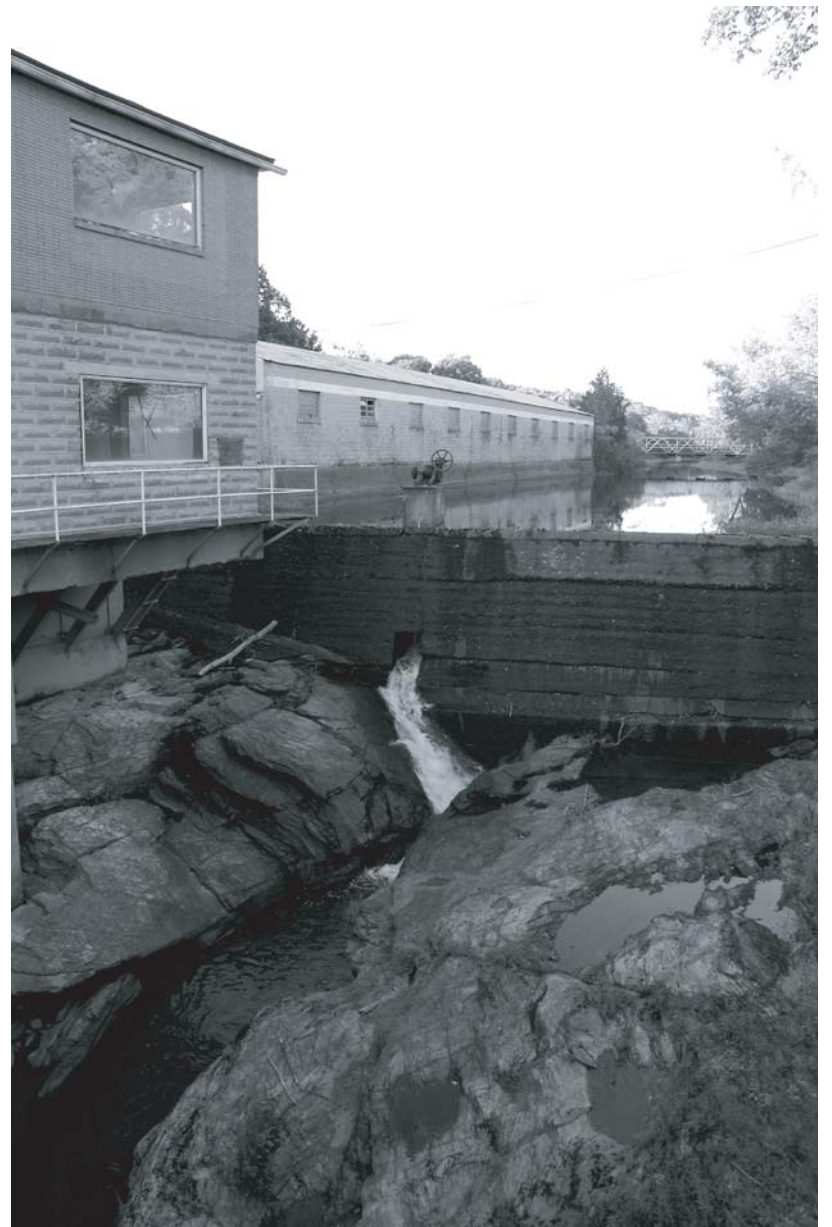
“The potential [for solar thermal] is limitless, commercially and residentially,” says Rebecca Boyd, Rael’s daughter and Solaqua marketing director. “Solar thermal could be used for car washes, laundromats.” Boyd says that once the solar thermal project is installed at Kling, it is projected to save more than \$1,000 annually in propane expenses.

Yet another Solaqua project involves converting fryer waste, collected weekly from local restaurants, into renewable energy. Again, the Kling manufacturing plant will act as guinea pig. The experiment will begin this winter, when the filtered veggie oil will be used, via a waste-oil burner, to heat the building and run a generator. A back-up propane system will be in place should any kinks need to be worked out.

With all three projects, the company wants to reduce its carbon footprint, demonstrate methods of reducing national dependence on foreign oil, and develop



(ABOVE LEFT) SOLAR PANELS ON THE KLING MAGNETICS /SUNDOG SOLAR/SOLAQUA CAMPUS;



(OPPOSITE) JODY RAE L STANDING IN THE FUTURE HOME OF SOLAQUA POWER AND ART.

(ABOVE RIGHT) THE FUTURE SITE OF SOLAQUA ON THE STONYKILL CREEK.

systems that can help educate the community about renewable sources of energy. The Solaqua group also hopes that the systems will be replicated at the mill site.

Meanwhile, Kling Magnetics and SunDog Solar continue as usual. Kling creates custom magnets for toymakers, publishers, and companies that use magnets for promotional or educational purposes. Clients listed in the company's literature include Fisher Price, General Foods, Pepsi, Continental Airlines, Learning Resources, and Scott Foresman. In the educational market, manipulatives are particularly popular. Says Rael, "It's easy to teach someone about fractions if you have a magnetic pie that you can move pieces out of."

For the retail market, Kling manufactures magnetic paint, magnetic travel puzzles and games, and magnetic playing cards, which can be used outdoors (great on a windy day) or indoors by people who are bedridden or traveling via train, plane, boat, or automobile—anywhere cards can get lost or be hard to retrieve.

For its Magic Wall Magnetic Paint, Kling uses a proprietary process to make magnet-receptive paint that can be applied to existing walls, making it possible for artwork, posters, charts, and plans to be displayed without potentially destructive tacks, pushpins, glue, or tape. The water-based acrylic latex paint, which has been mixed with superfine, nonrusting iron particles, can be left in its dark-gray form or top-coated with latex or enamel paint. According to Kling marketing materials, the Magic Wall Magnetic Paint is lead-free and kid-safe.

Rael grew up in New York City and spent weekends on a family-owned farm in Chatham. "My father made photograph albums, but he always dabbled in magnetics," says Rael. "He invented the magnetic scheduling board and magnetic playing cards, and I took the magnetics part of his business in 1984 and brought it up from New York City to Hudson." Rael's father had made a lu-

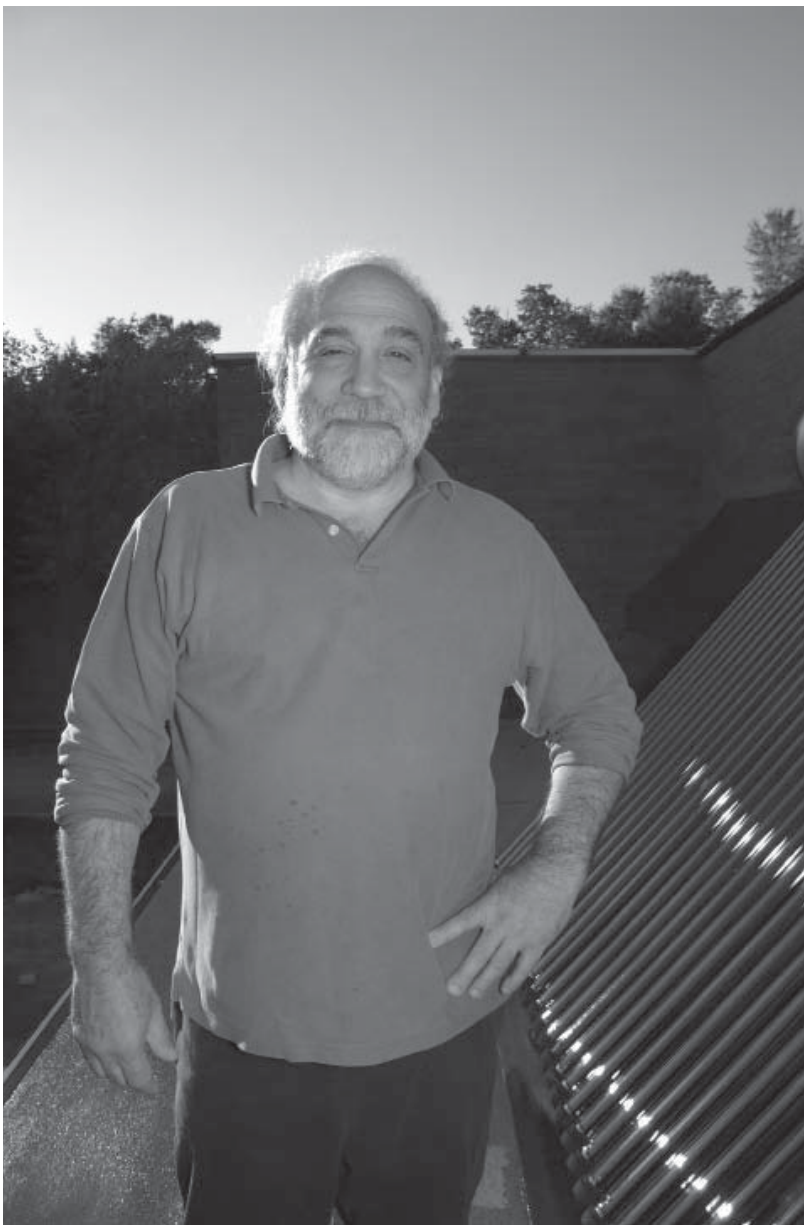
crative business out of manufacturing 100-page photo albums with peel-away plastic page covers.

When Rael first moved the magnetics part of the business upstate, he wanted to lease the building that currently houses Kling Magnetics, SunDog Solar, and Solaqua. The real-estate broker "couldn't lease it to me because he was in the process of negotiating a sale to York Paper," says Rael. York succeeded in purchasing the property, and Rael took Kling Magnetics to Hudson, instead. "[York] ran it until '94 or '95," says Rael, "and then just abruptly shut down the whole mill. When York announced they were closing, I wanted to buy just this building. Instead, they made me buy the mill and 200 acres."

After two years of negotiations, Rael acquired the property and moved Kling into the building he had initially hoped to lease. "And then I was left with 100,000 square feet of space," says Rael, referring to the mill. "We kept walking through it and throwing out ideas. Of course, the first idea was an arts center. That's what everybody with a factory space thinks. Okay, let's bring in a bunch of artists."

For a few years, Rael invited people to tour the property and brainstorm ways that it could be developed. "Then the renewables aspect hit me," he says. "I kept looking at the waterfall and thinking, 'Gosh, if we could power this thing [the arts center] renewably...' And then I got that blinding flash of inspiration of marrying the arts and renewable energy." He adds, "I started looking at solar energy commercially again, because I'd been very into it in the late '70s and '80s, having built a number of solar-powered PA systems."

Currently, Rael uses a retrofitted GEM (Global Electric Motorcar, from a unit at Chrysler) to produce solar-powered sound at concerts, festivals, educa-



JODY RAE L NEXT TO A SOLAR HOT WATER HEATE R ON THE ROOF OF SUNDO G SOLAR.

tional outreach programs, and promotional and fundraising events. Each of the electric vehicle's wing doors has 12 50-watt photovoltaic modules that charge the car's battery bank and energize the custom PA system. The GEM has appeared at the Columbia County Fair and other Hudson Valley events.

Although Rael purchased the mill property ten years ago, only in the last three has he begun working on establishing Solaqua Power and Art at the site. His staff includes Boyd and Cherie Miller-Schwartz, who was hired this year to work full-time as Solaqua's executive director. Previously, Miller-Schwartz had been the director of master planning and rehabilitation at the Shaker Museum's Mount Lebanon project.

"Our idea continues to be clarified based on existing conditions of the mill, and also the economic and market demands," says Miller-Schwartz. "There's much more awareness of renewable energy now, certainly than there was even two years ago. And there's much more demand for green businesses now than there was two years ago."

Rael says that so far, "Kling Magnetics has been the money engine behind the mill project. So if I have to do it alone, it's going to proceed very slowly, at my speed." Rael and the Solaqua team have reached out to community members, politicians, nonprofit organizations, government agencies, renewable-energy experts, architects, and investors in an effort to make Solaqua Power and Art happen.

Among Rael's many fantasies for the Solaqua site is a solar-powered icecream factory. "That's the idea here," he says. "To provide energy-intensive crafts and food for people with very low-cost energy." In addition to running Kling Magnetics and SunDog Solar, Rael wants to "create something unbelievable." For him, Solaqua Power and Art is it. ●

For more information about Kling Magnetics, Inc., SunDog Solar, and Solaqua Power and Art, call (518) 392-8171 or visit www.kling.com, www.sundogsolar.net, or www.solaqua.net.