GreenHorizons

How Milwaukee's employers and educators are prepping for a more environmentally friendly economy.

BY LEAH DOBKIN

The white hard hats and fall-protection roof anchors are securely placed. The ladder is elongated. Lisa Schaal and Dick Stenzel are about to climb closer to becoming solar energy installers.

They're joining an increasing number of green-collar workers riding the nationwide environmental sustainability wave. The Milwaukee region in particular is taking steps to shed its rust belt for a green one and transform its economy in the process.

The morass of high energy prices, crippling unemployment rates and a worldwide recession – combined with a growing belief that society's current environmental path is not sustainable – has spawned collaborations between local businesses, governments and educational institutions. These partnerships focus on ways to retool Milwaukee's manufacturing base, revamp school curricula and expand educational opportunities that prepare students for new green careers. It's a strategy that enables businesses to survive and even expand operations, add jobs and increase the tax base – all while helping the planet in the process.

Stenzel and Schaal are prime examples of people using new educational and training opportunities to build a different life.

Schaal owned a beauty salon in Shorewood. But when she got pregnant, she decided to go back to school and become a solar site assessor. "I became more aware of the cycle of life," Schaal says, "and decided I wanted to help make the world better for my daughter and other kids. I feel fortunate that I found an occupation that I feel so passionate about."

After graduating from Waukesha County Technical College, Schaal took courses from the Midwest Renewable Energy Association (MREA), a nonprofit organization that promotes sustainable energy use in the region. Armed with a new skill set, Schaal started conducting solar energy assessments part-time. In 2008, at age 33, she created the UrbanRE Vitalization Group, a full-service electrical contractor and renewable energy company based in Milwaukee's Riverwest neighborhood. It offers solar site assessments, design and installation, as well as other energy efficiency and green building solutions. "I would do these [solar] site assessments, present all this information and paperwork to the clients, and many times their eyes would glaze over," Schaal says. "As I thought about it, I really wanted to create a turnkey process from beginning to end."

Schaal's roof-climbing adventure with Stenzel is part of an MREA class on solar installations. She wants to obtain her certification from the North American Board of Certified Energy Practitioners, which has the nation's most stringent solar installation certification program. Stenzel, meanwhile, is 69 years old and has his own reasons for exploring a new career at an age when most people are enjoying retirement. "I took the MREA courses because I spent 40 years in the land surveying and engineering field helping developers and others scar the earth," Stenzel says. "I figured I'd try to redeem myself by getting involved in renewable energy." He wants to install solar on his own house and get into the industry in some capacity. He's leaning toward becoming a solar instructor, site assessor or weight-load certifier.

Growing Trend

When it comes to pursuing a future with renewable energy, Stenzel and Schaal have plenty of company. "I've seen strong interest from local businesses that are already in the plumbing, HVAC area or electrical industry who want to branch out and recognize renewables as an upcoming opportunity," says Jessica Thibodo-Johnson, a renewable energy specialist for We Energies. Thibodo-Johnson is also working with some companies, such as Pragmatic Construction and Tim O'Brien Homes, that are building new homes with solar energy systems already installed. We Energies is conducting an extended study with Tim O'Brien Homes to help builders understand the solar market. And the power company offers workshops for homeowners about solar energy applications, such as photovoltaics (which produces electricity) and solar hot water systems.

We Energies is also is part of a partnership with MREA and Habitat for Humanity that combines charitable and educational efforts. Using Habitat for Humanity's newly built homes and free solar equipment provided by We Energies, MREA solar instructors and coaches oversee students as they practice installing equipment. It's an enterprise made in solar heaven. Adam Helt-Baldwin majored in philosophy at college. Now he's a Habit for Humanity construction manager who supervises solar installations on more than 50 Habitat homes in the Milwaukee area. "It's hard to

find an employed philosophy major," Helt-Baldwin says, "but here we are."

The Milwaukee Office of Environmental Sustainability is working to create similar enterprises in Milwaukee. The city received a U.S. Department of Energy grant to help expand the number of solar energy installers and assessors through a new program called Milwaukee Shines. "Many folks are interested in renewable energy because it's becoming more viable," says Amy Heart, a solar coach for Milwaukee Shines. "Especially in Wisconsin because of the state and federal financial incentives."

Heart is setting up an MREA office in Milwaukee to boost the local reusable energy industry with an emphasis on solar. She'll offer workshops for homeowners, businesses and people seeking a professional involvement in reusable energy. "The homeowners and the business owners are curious about reusable energy, but have no idea how to navigate the process; it's still fairly new," says Heart. She acknowledged that if you're interested in solar, you can't just look up solar assessors and installers in the phone book, at least not just yet. But that reality may be closer than most expected. The people at Milwaukee Shines believe there's a growing market for solar site assessors, and especially for solar energy installers and instructors. "If you're interested in the solar industry and not a plumber or electrician, site assessor is a good first step to get into this industry," says Andrea Luecke, project manager at Milwaukee Shines.

Heart says she's seen students from all sorts of backgrounds attending workshops. That includes insurance professionals, because solar and wind systems must be insured.

Workshops aren't the only thing Milwaukee Shines is focused on. Luecke is developing a revolving loan fund that would be seeded with $150,000 to help finance solar installations on about eight houses. Homeowners could borrow up to $20,000 and repay the loan over time.

Luecke is also encouraging manufacturers to retool some operations to produce solar components and stimulate green job creation. For example, local auto parts manufacturers producing stamp metal could easily produce solar electrical parts, and factories making water technology parts could make solar hot water components. "We are trying to piggyback or marry the water technology industry with a new solar manufacturing industry," says Luecke. She

says companies have been very receptive.

That's no surprise. Local businesses have already embraced Milwaukee's efforts to become the Silicon Valley of freshwater science. Leading that charge is the University of Wisconsin-Milwaukee's Great Lakes WATER Institute. It's the country's largest academic entity devoted to studying the Great Lakes, and its research focuses on a wide range of topics. Projects include researching new environmentally friendly technology that allows better ways to raise fish indoors, with an eye toward improving their use as a food source. The institute also keeps a close watch on the status of the Great Lakes in order to preserve one of Wisconsin's greatest natural resources. And UWM recently established a School of Freshwater Sciences, which, as its Web site boasts, "is the only graduate school in the nation dedicated solely to the study of freshwater."

Never Too Young

Rosendo Villanueva and Alex Byrd joined Milwaukee's Conservation Leadership Corps (CLC) job-training program in the summer of 2008. The program hires crews of urban high school students for six weeks to work on environmental projects. Crew members receive $1,300 and crew leaders get $1,750, plus a $1,000 college scholarship. Everyone gets on-the-job training for the green economy.

Villanueva and Byrd say the crews felt like family. They built bridges, trails, drainage systems and urban campsites in Bender Park. "I needed a summer job," says Villanueva, who's now a freshman studying math and science at Marquette University. "I did not want a fast food job, and I thought working in the park would be cool."

That's music to the ears of Chytania Brown, CLC's manager of youth services. "The CLC helps city teenagers gain summer employment in a difficult job market and creates a green jobs pipeline for businesses and government agencies," Brown says. CLC is sponsored through a partnership between Johnson Controls, the Student Conservation Association and the Milwaukee Area Workforce Investment Board. The Wal-Mart Foundation awarded a $550,000 grant to help expand the program.

Byrd wanted to be an architect since a seventh-grade art class in which she realized how good she was at drawing houses. She's now a freshman at Syracuse University, and expects her CLC experience to be a building block toward her professional goals. "I

learned how to use hand tools and I built a bridge that looked professional," Byrd says. She and other teenage participants also had opportunities to tour green businesses and meet with Milwaukee Mayor Tom Barrett. "This program was a good networking opportunity and inspirational, especially the visit to Johnson Controls," Byrd says. "I now want to design buildings to be more eco-friendly. They don't have to be polluters."

Learning Curve

Many people are unaware that buildings consume more energy than cars. Milwaukee Area Technical College (MATC) is addressing this issue by offering an array of training programs, certificates and degrees connected to energy efficiency. That includes new certificate programs in energy engineering (which trains students to become energy auditors) and sustainable operations (which teaches students to implement energy saving concepts).

An energy auditor is an important piece of the environmental puzzle, according to Dr. Joseph Jacobsen, associate dean for environmental studies at MATC. In addition to evaluating buildings, auditors prepare detailed proposals to make those buildings more energy efficient so that they show a better return on investment. "This type of individual is extremely valuable in the industry," Jacobsen says, "and those people get jobs right away."

When the auditor's job is finished, it's time for the implementer to step in. These professionals replace, install and/or repair a building's equipment or components, in essence giving the building a tuneup for better performance. Quite often, this is someone who already works within that facility, and studying sustainable operations is a great way for that person to upgrade his or her skills. By helping a company save energy, water and money, Jacobsen says, "Often these people are not only saving their jobs, they're making themselves more valuable and ready for promotion."

In addition to students who are unemployed, many professionals are taking energy-related classes, including engineers, architects, custodians, building superintendents, and maintenance and operations directors. "Many people who already have degrees are coming back to school to learn about this new energy efficiency technology," Jacobsen says. "It equates to when computers first came on the scene in the late '70s and '80s, and MATC saw this huge influx of people with degrees com-

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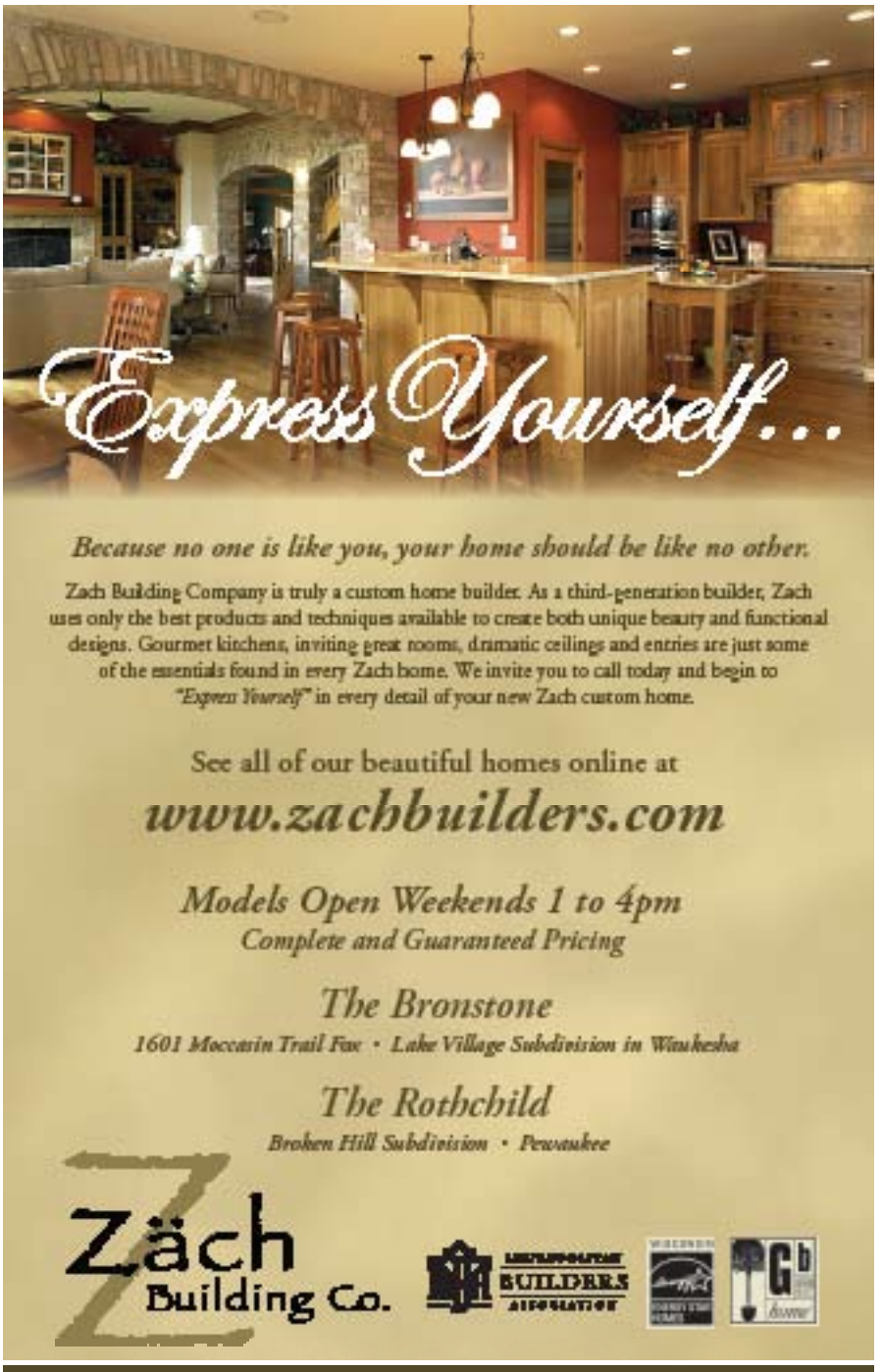
Many conditions have been found to be associated with increased risk of developing glaucoma. The most important risk factors are elevated eye pressure, age (60 or older), African-American ancestry and a family history of glaucoma, especially in brothers and sisters.

Dr. Kalenak, who has privileges at four Milwaukee-area hospitals, is committed to providing the highest quality glaucoma care and services available. Dr. Kalenak undertook his three-year residency in ophthalmology at the Medical College of Wisconsin and completed a one-year fellowship in glaucoma at the Washington University School of Medicine in St. Louis. Certified by the American Board of Ophthalmology and a member of the American Glaucoma Society, he provides a complete range of medical and surgical glaucoma care. His office is conveniently located in the greater Milwaukee area.



ing back to learn how to use computers." However, Jacobsen says that the motivation is altogether different than it was years ago. "It's an industry that people get excited about because it has intrinsic value, it has a future, and people feel that they can make a good living and protect the environment at the same time."

MATC, in collaboration with UWM, is also developing a wind energy certificate at its Mequon campus, where there is a wind turbine. And with a National Science Foundation grant, MATC is working with the Water Council to develop a new water industry curriculum. "We're identifying competency from these 120 organizations in the water industry so graduates can walk right into those professions," says Jacobsen.

There are many other examples of regional educational systems offering environmental classes, such as the newly built Concordia Center for Environmental Stewardship at Concordia University. The 13,000-square-foot building overlooks Lake Michigan and includes classrooms, laboratories and space for seminars. Its programs focus on water stewardship and other educational topics for Concordia students, other area schools and the general public.

Elsewhere, UWM, Marquette and the Milwaukee School of Engineering have joined forces with several regional companies and foundations to create the Southeastern Wisconsin Energy Technology Research Center. "This center will be a drawing card for the M7 area as an emerging hotbed of skilled workforce in the broad area of energy systems," says Stanley Jaskolski, opus dean of engineering at Marquette.

Even municipal governments are promoting green job-training opportunities. Milwaukee's urban forestry program stimulates green job growth for low-income city residents. It offers comprehensive urban forestry training that connects those in need of jobs to the expanding green economy. The program is for those with little or no previous forestry experience, according to David Sivyer, Milwaukee's forestry services manager. "The urban forestry profession is a longstanding green industry that provides family-supporting jobs," he says.

It's just one more example of how Milwaukee is opening its arms to those wanting a new, greener career, no matter their age, background, education level or ethnicity. ■

Shorewood freelancer Leah Dobkin writes about environmental, social and civic issues.