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Profile

Professor Eby Friedman runs UR's Center for Electronic Imaging Systems.
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Special

A look at LEED Business Jour... Lec



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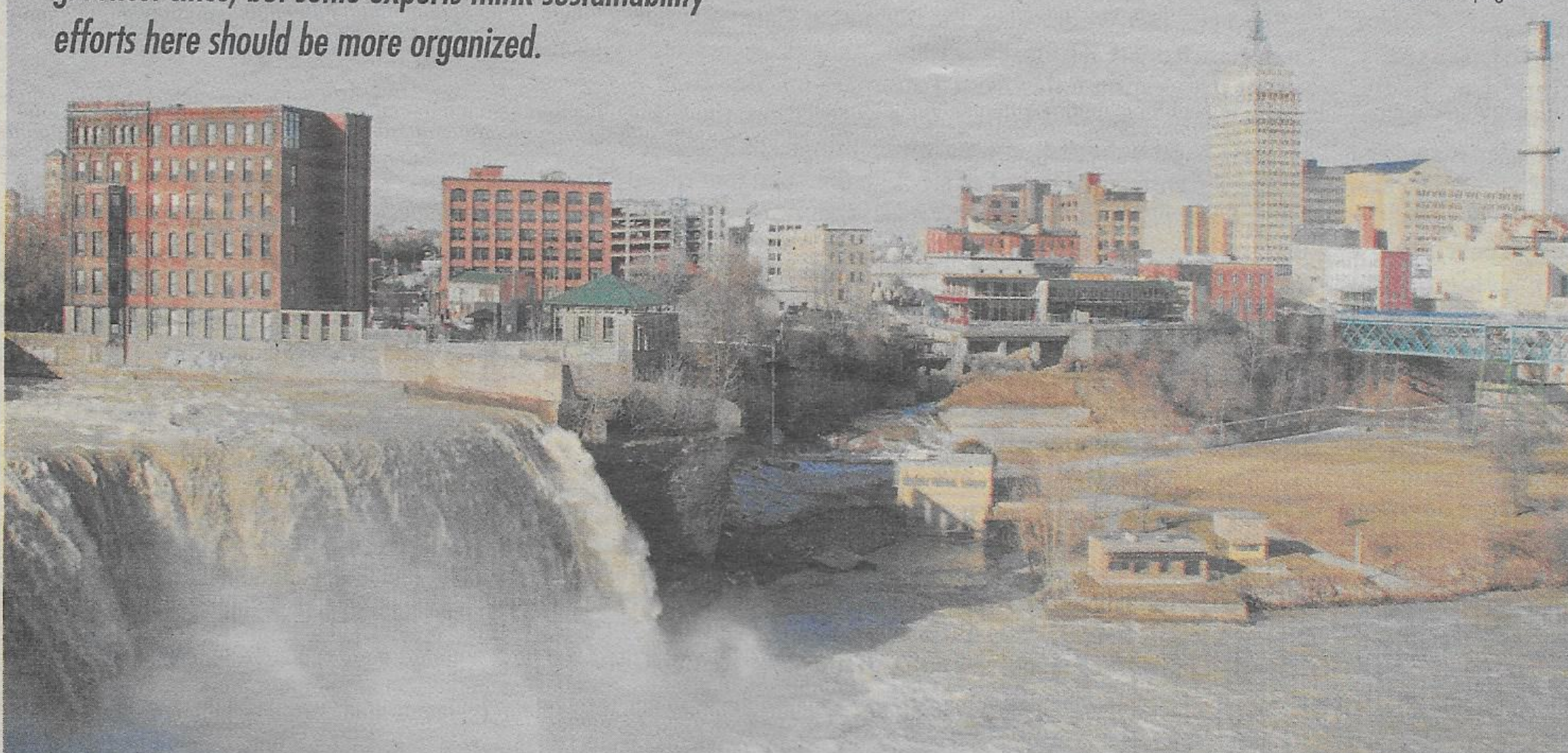
Rochester ranks among the nation's greenest cities, but some experts think sustainability efforts here should be more organized.

By MARY STONE

Efforts to make the Rochester region more environmentally sustainable are numerous, local green experts say, but those efforts could be more concerted.

-- That is one of few criticisms experts made upon reviewing the progress of local environmental initiatives under way. Some say the area could benefit from a single organization to orchestrate green measures, maximize them and monitor results.

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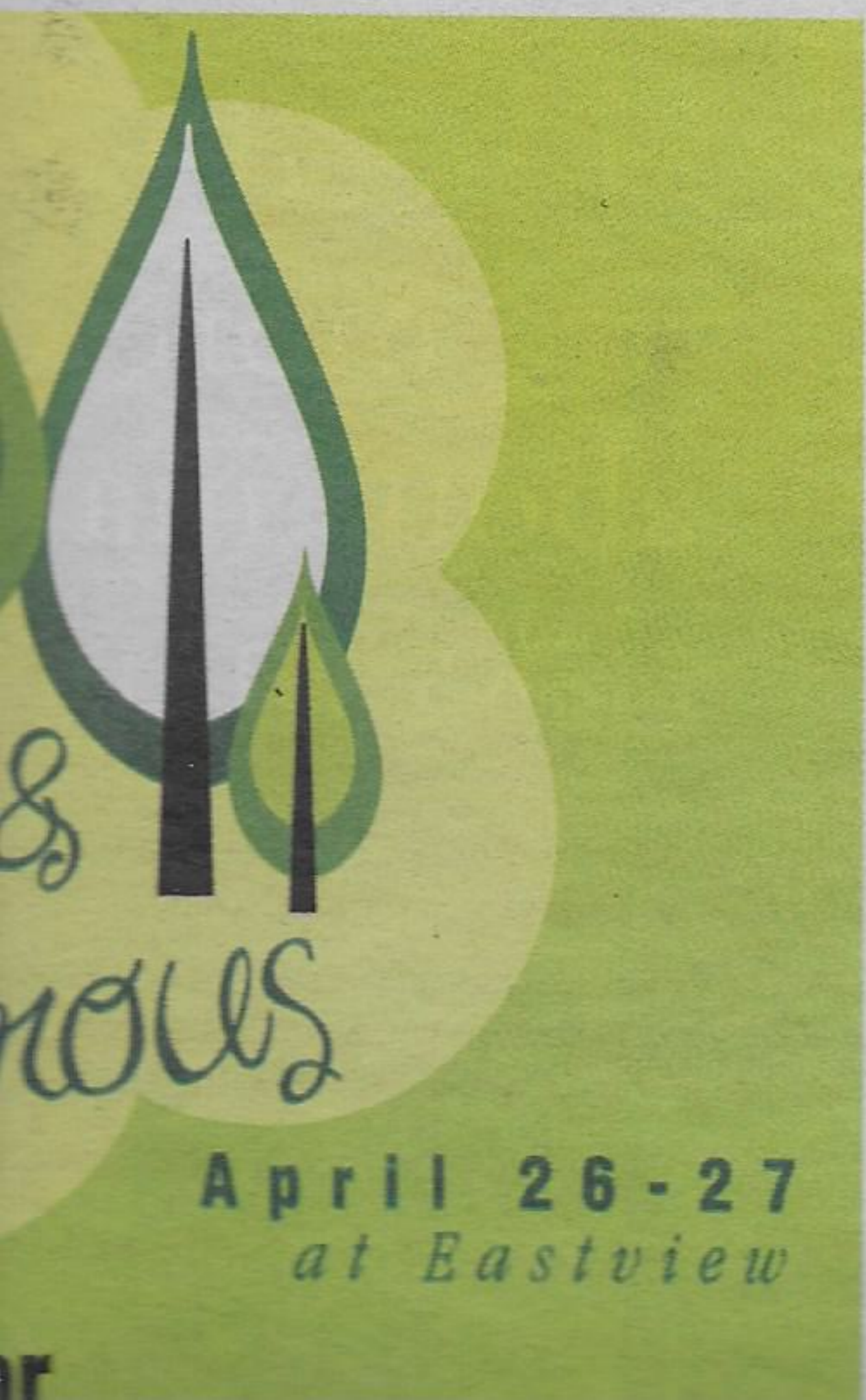


One green proposal would turn the High Falls area into a hydrogen village.

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GREEN

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Another concern is the emphasis on LEED certification, when less complicated measures implemented on a wider scale could produce just as much good, if not more, they say.

While there is still work to be done, Rochester, compared with other U.S. cities, is holding its own in sustainability. A recent national ranking using data from the U.S. Census Bureau and the National Geographic's Green Guide, placed Rochester 27th out of the nation's 50 greenest cities.

Greater Rochester Enterprise Inc. is one organization leading the way in making the region greener, most notably with Greenprint Rochester, a plan forged in 2006 to help encourage LEED certification and green practices.

LEED is the Leadership in Energy and Environmental Design citation, a common measure in the design industry developed by the U.S. Green Building Council to standardize green building.

To promote the cause, LEED-certified and affiliated professionals joined GRE at a 2006 event moderated by Sen. Hillary Clinton, D-N.Y.

The event was initiated after Clinton approached the USGBC to visit Rochester and form a blueprint for making LEED certification commonplace here. The idea was to make green building part of a larger Rochester re-branding effort to transform the city into a sustainability innovator.

The occasion brought together 50 local architects, engineers, city planners and corporate leaders to develop a charrette, or action agenda. From the process, 12 short-term and long-term steps were identified.

Called the Green Dozen, the objectives included:

- adopting the LEED rating system for all public buildings and developing incentives for private green building development;
- increasing sustainable awareness and education;
- making Rochester's schools and curricula more green-focused; and
- establishing a Rochester branch of the Upstate New York Chapter of USGBC.

Measures for at least half of the Green Dozen have been initiated since the list

was made public last year.

Today the Rochester area has 20 projects seeking LEED certification, up from 11 when Clinton came in 2006.

In addition to those, at least four local buildings have obtained certification, including the city of Rochester's 78,000-square-foot Water Operations Center last year.

Rochester has made significant strides in the area of LEED, a progress report GRE submitted to the Rochester Business Journal last month states. Chief among those accomplishments was Monroe County Executive Maggie Brooks' directive last summer to make all county construction and renovation projects of more than 5,000 square feet LEED-compliant.

Monroe County is pursuing LEED certification for its public safety crime lab, to be completed in 2011, and the sheriffs' consolidated headquarters, to be completed in 2009—in addition to \$26 million worth of projects at Monroe Community College.

The progress being made on the Green Dozen is admirable, said Sandra Rothenberg, associate professor at Rochester Institute of Technology's Philip E. Saunders College of Business in the department of management.

"The area that seems to have made the most progress is in the area of LEED certification, as well as training and education. Certification programs, however, are always tricky and, while all buildings should adopt green practices, not all will become LEED-certified," Rothenberg warned.

"Moreover, certified buildings will vary in their actual environmental performance. Therefore, while perhaps appropriate for this particular set of goals, eventually adoption of LEED should not be used as the only measure of progress in the area of green construction," she added.

The county also has backed other conservation measures, such as the \$9.7 million Mill Seat Landfill renewable-energy facility last year. The county partnered with Waste Management Inc. to operate the gas-to-electricity generating plant, capable of producing 4.8 megawatts of power by using methane gas from the landfill.

The county also announced the Rochester-Genesee Regional Transportation Authority would add hybrid-electric buses to its fleet. In RGRTA's 2007-08 budget, \$2.7 million is set aside to buy five hybrid

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The Green Dozen

LEED-certified and affiliated professionals in 2006 developed 12 short-term and long-term steps to green building here. The goals:

1. Adopt LEED for all public buildings and develop public incentives for private green building development.—Status: Monroe County Executive Maggie Brooks is working with County of Monroe Industrial Development Agency.
2. Achieve LEED certification for Renaissance Square—Status: Planned for LEED certification
3. Recycle and re-use construction waste.—Status: ongoing
4. Convert Rochester's High Falls into a hydrogen production facility.—Status: The funding

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buses, adding to the 19 hybrids RGRTA purchased in 2006.

The county also wants to add solar panels to its office building, said Michael Garland, deputy director of environmental services.

Installation of the solar photovoltaic system is estimated at \$84,000, to be paid under a project grant and incentives from the New York Power Authority.

The county has completed its review of the agreement with the NYPA and now awaits Monroe County Department of Environmental Services review. Panel installation is slated for late this summer.

“The agreement with NYPA is ‘turnkey’: They take care of the design, procurement of equipment and materials, installation and testing,” Garland said. “DES has been requesting information from NYPA on the design so we can submit the project for state historic preservation office review.”

Renewable energy use is on the rise at area colleges and companies too:

- Roberts Wesleyan College’s B. Thomas Golisano Library is using a green exchange system to heat and cool the building;

- SUNY College at Brockport is installing a green exchange system to heat and cool their townhouses;

- Monroe Litho Inc. is using wind-generated sources for electricity; and

- Harbec Plastics Inc. is producing wind power and using geothermal technology in its building.

Educational efforts

Also under the Green Dozen, GRE reports numerous local educational initiatives under way. RIT is working on an 83,000-square-foot facility to house the college’s sustainable technology program. The college has received a grant to develop



Photo by Kimberly McKinzie

The Greenprint report released last year states construction and demolition waste accounts for 25 percent of U.S. municipal solid waste.

a Ph.D. program in sustainability—one of the first in the world—that would integrate engineering, science, economics, public policy and management.

At the K-12 level, the Harley School is developing environmental awareness curricula and at the vocational level, Wayne-Finger Lakes Board of Cooperative Educational Services has launched its New Vision Renewable Energy program for students.

As part of that program, an 80-foot, 10-kilowatt wind turbine was erected in December to supply partial electricity to the Williamson technical and career center.

The center launched its New Vision Renewable Energy Program this fall. The program provides students with a college preparatory program that studies different forms of renewable and alternative energy throughout the year while earning 14 college credits.

The center’s \$55,000 wind turbine is part of an \$8.3 million addition and renovation project designed for LEED certification and meant to serve as a model and study tool for students.

At the community level, GRE reports numerous presentations and discussions on

sustainability. The most sustainability and the Green Dozen; RIT’s Sustainable Brockport program and co...

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Photo by Kimberly McKinzie

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At the community level, GRE reports numerous presentations and discussions on

sustainability, occurring almost monthly. The most recent include the Upstate Sustainability Symposium: Focus on Energy and the Green Economy Roundtable in January; RIT's fuel cell forum in December; the Sustainable Community Charrette at SUNY Brockport last fall; and a geothermal heating and cooling seminar last summer.

For individuals and businesses, the Rochester Green Business Network, a program of the Center for Environmental Information, points interested people to environmental incentives and programs offered by the state.

George Thomas, CEI executive director, said he used to have to knock on doors to get people interested in the environment. Now, he said, people are knocking down their doors to find out what part they can play.

"The whole green building concept has caught on like wildfire," Thomas said.

There is a strong interest and willingness to go green, Thomas said. The trouble is harnessing that energy, focusing it in the right places and communicating it.

More to do

An organization that can track and organize green efforts in Rochester and coordinate them with local municipalities is one possibility, suggests Paul Tankel, principal at Clark Patterson Lee.

He and Thomas said they are impressed with GRE's progress report for the region and the accomplishments locals have made, but Thomas said more work needs to be done to teach workers how to serve this new industry.

To maintain the momentum of green adoption, qualified workers need to know how to install solar panels, repair wind turbines and perform efficiency tests on buildings, Thomas said.

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for Sustainability**

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 Robert J. Duffy, Mayor
City of Rochester, NY

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Construction waste is another concern. The Greenprint report released last year states construction and demolition waste accounts for 25 percent of U.S. municipal solid waste.

The Green Dozen highlighted construction waste as a key area of concern. Tankel asked, "Is construction waste being looked at as truly a long-term impact that is not creating new landfills? Our local contractors are getting better with this, but much of this has to do with the waste hauler market—and there is clearly improvement needed."

RIT's Rothenberg agreed. The Greenprint Report, she said, showed great insight into the environmental problems facing Rochester. But there are gaps. One of them is transportation.

"Hybrid electric buses make excellent sense given the 'stop-and-go' characteristics of most bus operations. But cost is still a major challenge. Industry needs to bring these costs down so that hybrid buses become more price-competitive with conventional diesel buses," said James Winebrake, chairman of RIT's department of science, technology, society and public policy, director of the University-National Park Energy Partnership Program and co-director at RIT's Laboratory for Environmental Computing and Decision Making.

Winebrake said policies and programs must be instituted to encourage people to abandon their cars for public transportation.

"People need to be incentivized to use buses to meet their transportation needs. Having only a few riders on a hybrid electric bus may be more environmentally damaging than if these same riders drove individual vehicles," he said.

Clark Patterson Lee's Tankel agreed that public transportation has a long way to go.

"Incentives need to be provided by employers to encourage staff to take public transportation. Part of this is just doing the math: cost of a parking place versus the cost of the bus," Tankel said. "(The third part) is education and convenience. In other cities business will provide a bus pass, which results in greater ridership, and in turn, more frequent routes."

In a ranking published by *Popular Science* magazine last month, Rochester ranked 27th in a list of the 50 greenest cities; Syracuse ranked 17th.

U.S. cities were scored in categories such as renewable-energy use, recycling and transportation. Out of 30 points, Rochester scored 16 and Syracuse scored 18.9.

For renewable energy, Rochester scored 4.5 points out of 10; Syracuse scored 7.

While there is strong interest and willingness to go green, an organization that can track and organize local efforts could be helpful.

For using public transportation and car-pools, Rochester earned 4.4 points out of 10, and for its USGBC-certified buildings, Rochester scored 3.1 points out of 5.

For the city's recycling program and citizens' understanding of environmental issues, Rochester scored 4.1 points out of 5.

Local experts say Greenprint Rochester is a work in progress. The plan helps keep the goals in focus and ultimately helps enhance Rochester's reputation.

Rothenberg said, "By moving forward with this plan, Rochester is not only improving the environment but is also building expertise in an area that will become increasingly in demand globally."

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Organizations tap value in green construction

The value of green building is picking up pace—80 percent of corporate America is expected to be engaged in environmental efforts at least 16 percent of the time by 2009, according to reports cited by the U.S. Green Building Council.

Office, education and health care this year are expected to account for a major chunk of non-residential green construction. Other sectors that will experience such growth include government, hospitality and retail.

The factors driving green building include:

- Unprecedented level of government initiatives
- Heightened residential demand for green construction
- Improvements in sustainable materials.

USGBC cites several economic and environmental benefits to going green. Environmental pluses include protection of ecosystems and biodiversity, improvement in air and water quality, conservation of natural resources and reduction of solid waste. The economic benefits involve improvement in employee productivity, reduction of operating costs, enhanced asset value and profits, and optimized life-cycle economic performance.

The built environment in the United States wields a sizeable impact on the environment, USGBC observes.

- Construction yields an output of \$4.6 trillion.

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