Planning for 2030

Green Construction at RIT.
by Jeff McKinzie
(Originally appeared in *Reporter* on January 27, 2012).

On bright, sunny workdays, RIT's Senior Sustainability Advisor Enid Cardinal leaves the lights off in her office; she has enough sunlight to keep it bright. If she stays at work late, she only turns on the lights when the darkness becomes noticeable. It's a decision she makes frequently, and she urges others at RIT to do the same.

With RIT planning to attain carbon neutrality by 2030, many decisions like Cardinal's might get the Institute on the fast track. However, becoming a carbon neutral campus doesn't mean just turning off the lights when you leave the room or shutting down the computer when you're done using it. There's a bigger picture — in fact, reports outlined in the University's Climate Action Plan indicate that it will be a complex process that involves introducing expensive new technology that will be implemented in new buildings over the next several years.

Going Neutral

President Destler has long desired to make RIT a greener campus, so in 2009 he signed the American College and University Presidents' Climate Commitment. In doing so, he put RIT on a trajectory to become one the foremost leaders in campus sustainability. That commitment has become serious with the Institute's plans to construct green buildings already underway.

One of the buildings undergoing construction is the Golisano Institute for Sustainability (GIS), which will serve as a center for sustainability research, technology transfer, education and community outreach. The building will be a model of how RIT hopes to construct its buildings in the future, as the sustainability team aims to have it qualify for LEED Platinum certification. A rating developed and certified by the U.S. Green Council, LEED stands for Leadership in Energy and Environmental Design. It is used to certify buildings that show excellence in five green design categories: sustainable sites; water efficiency; energy and atmosphere; materials and resources; and indoor environmental quality.

Reaching Out

One of the main reasons for elevated construction costs is the technology designed to make these buildings more energy efficient. But other major contributors are the gas consumption among RIT commuters and electrical energy consumption.

In April 2011, RIT appointed Cardinal to her position on the sustainability team to deal with this issue. Since assuming her position in July, she has worked with other staff such as Witold Bujak, RIT's sustainability manager, and a few students on projects that would help ease the process. While her official role was defined by President Destler as working to "develop, implement, and administer policies and programs," she has also

spent time working on a comprehensive website that will combine content from all three of RIT's sustainability websites into one central site.

Cardinal says it should go online in the next year. She is also working closely with students on a couple of side projects, one of which is a certification program called "Green It Up!" as well as a calculator that looks at the return on investment in future projects. She explained the calculator as something that would "quantify how much energy would be saved. It would help us evaluate projects as trying to go to carbon neutrality by 2030."

Although it might seem like a lot of work, Cardinal says it's a more creative approach than trying to find a quick solution to gas and electrical energy consumption. "The way some schools have achieved their carbon neutrality is by simply purchasing a carbon offset switch. I don't find it to be particularly innovative," said Cardinal. "It's a way to buy yourself neutrality as soon as possible."

Bujak has also been involved with projects where he reaches out to the RIT community. He is invited several times a year to talk in classes, where he discusses energy issues with students. He said that sometimes the students say that they want to see a LEED certified building or what the sustainability team does with water or energy in buildings.

"Sometimes they want to see [things], so I am available and involved very much in supporting class instructors with certain kinds of questions," said Bujak, adding that he will be giving one such presentation in late January.

Planning for the Future

Cardinal has also said that RIT's plan isn't just about saving the environment. "The ultimate goal in energy efficiency is to reduce greenhouse gas emissions, but really it's to save money for the university. We have to pay our electric bills, and the cost of gas isn't going down, the cost of electricity isn't going down," she said, adding, "If anything, it's going up, so we have to run the meters as efficiently as possible."

Yet, Cardinal believes the addition of GIS as a starting point has put the Institute in the right direction for the next several years. She says it's difficult to predict what future technology will be like. "We are building smarter and smarter buildings, which means there's more metering within the buildings," says Cardinal "There's high-integration automation systems, so it's a lot easier to control building temperatures, lighting, all of those things remotely."

Bujak says that the task of eliminating all of the areas where emissions are given off is extremely challenging and requires some creative thinking. "In order to accomplish this impossible task," he says, "you have to think of something totally new, because this task is impossible. So, impossible tasks require some out of the box thinking. [But] nothing is crazy, nothing is impossible …"

One project he is thinking about, but hasn't proposed yet, is called %ice ball% technology. Although not a proven technology, the idea is to offset electricity by storing water in the ground, freezing it, and then using it to cool the campus when conditions

get hot. Bujak explains, “It’s maybe like a 200-foot ball in the ground somewhere. Because it’s very cheap to freeze when you have a 15 degree ball, you can freeze this, and then in the summer you would pump the water though it to cool the campus for free.” Bujak also anticipates that a project like this would be low-cost and beneficial to the Institute’s plans in the long term, but also explained that the sustainability team is currently looking more into electrical energy.

As far as electrical conservation projects go, Bujak is looking into building a solar energy field neighboring Andrews Memorial Drive, near Grace Watson’s Hall (GWH, 025). It would span four acres and cost no more than $3 million to build. He is also considering a wind farm and wants to get a proposal out to the RIT administration by the end of January.

Acting Now

Looking forward, the two are very excited to see their vision for RIT’s future become a reality. Last July, Bujak founded an organization called the New York Coalition for Sustainability in Higher Education where representatives from other schools such as the University of Rochester or Monroe Community College could share their views and ideas with RIT and solve sustainability issues together. According to Bujak, there are currently seven members that run the organization with him.

Although on they have worked in different paths, Bujak and Cardinal share the same common goal: making RIT a better place. While much of the work is large-scale, they both encourage students to consider their individual behavior on campus. “Every little action that you make really does make a difference because it’s millions of little decisions that add up that lead to significant changes and significant reductions in consumptions and significant dollars that we can save. Everybody needs to do their part,” Cardinal says.

“It’s a call to action.”