

Breathing New Life into Urban Areas

New GTRI center will help communities with redevelopment efforts.

by T. J. BECKER



An unwieldy term, sustainable urban redevelopment, is also a complicated endeavor — one that involves civil engineering, transportation, energy and water-supply systems, law, economics and more.

To help developers and communities get a better grip on this multifaceted subject, the Georgia Tech Research Institute (GTRI) recently launched the Center for Sustainable Urban Revitalization (CSUR).

“The revitalization of urban communities isn’t just about designing buildings,” says Bob Schmitter, a senior research scientist at GTRI and director of the new center. “It’s a complicated mix of environmental, economic and social issues. If we can get developers and communities to think about these interrelationships and the cumulative impact of a project, such as how it affects the people who work and live in an area, then chances for that project’s success will increase dramatically.”

One-Stop Shopping

CSUR concentrates on the revitalization of existing properties, such as brownfields, adaptive reuse and infill development. Housed within GTRI’s Electro-Optics, Environment and Materials Laboratory, the new center will provide a formal mechanism to tap different resources at Georgia Tech, supporting urban redevelopment in three ways:

Education. “University research isn’t always disseminated to people who can use it,” Schmitter

Georgia Tech artist-in-residence Ruth Dusseault is developing a three-tiered project for the College of Architecture that intersects art and urban design, featuring her photos taken at the former Atlantic Steel mill site in Atlanta. This image shows a part of the site before it was demolished to make way for the Atlantic Station redevelopment project.

PHOTO BY RUTH DUSSEAULT

says. "We want to help deliver knowledge to a variety of participants – architects, attorneys, policymakers – so those people can better understand what's going on and make decisions that are economically, environmentally and socially friendly. For example, what would be the best use of a property, and how does it factor into job creation?"

Research. CSUR will provide assistance to university researchers and also conduct research projects of its own. Two current projects include:

- Building disaster-resistant communities. This means not only protecting communities from natural disasters, such as floods and tornados, but also from terrorists.
- "Green" building products and sustainability. Are emerging energy-efficient, environmentally conscious products as good as traditional ones? Do they make sense from an economic and safety perspective? For example, if the materials caught fire, would they burn more quickly or be more dangerous in any way?

Technical assistance. CSUR will help communities with cleanup of hazardous waste sites and brownfields (properties contaminated by past industrial or commercial activities, such as an old gas station with a leaky oil tank).

"It doesn't have to be a Superfund issue," Schmitter notes, referring to those seriously contaminated sites that are eligible for federal cleanup funds. "A community may have a garbage dump in its backyard. We can tell people how to get involved in the cleanup process."

Lending a Hand at Atlantic Station

CSUR's first major undertaking is to assist Jacoby Development Inc. (JDI) with Atlantic Station, its 138-acre, mixed-use project in Atlanta's



PHOTOS THIS PAGE BY GARY MEEK

CSUR's first major undertaking is to assist Jacoby Development Inc. (JDI) with Atlantic Station, its 138-acre, mixed-use project in Atlanta's Midtown neighborhood. A combination of retail, office and residential uses, Atlantic Station sits on the former site of Atlantic Steel mill.



IMAGE COURTESY OF GEORGIA DEPARTMENT OF INDUSTRY, TRADE AND TOURISM



Public transit is one aspect of sustainable urban redevelopment.

Midtown neighborhood. A combination of retail, office and residential uses, Atlantic Station sits on the former site of Atlantic Steel Mill. What once was one of Georgia's largest brownfields is now a model for sustainable redevelopment, using building practices and construction materials that will reduce pollution and energy consumption.

Among cutting-edge innovations, JDI is investigating the use of a plasma pyrolysis gasification system that uses plasma arc technology. This technology creates a form of "artificial lightning," using electricity to convert an ionized gas, such as air, into a plasma state. The extremely hot plasma temperature can gasify organic wastes into low-BTU fuel gases and melt inorganic wastes into an inert rock-like glassy residue.

All contaminants would be treated, and the volume considerably reduced. The rock-like residue can be used as road gravel, aggregate or bricks. In the process of vitrifying waste, electrical energy can be created from the low-BTU fuel gases. About half of the energy would run the system, and the other half would go into a power grid.

"JDI's main interest in this technology is the ability to dispose of the municipal solid waste at Atlantic Station, Georgia Tech and other areas so the waste doesn't have to go in a landfill," says Hilburn O. Hillestad, JDI's senior vice president of

environmental science and senior vice president of environmental affairs at Atlantic Station. "If such a system were available in Atlanta, it could provide substantial environmental benefits to the city."

Because Georgia Tech has extensive research experience in plasma arc technology, CSUR has helped JDI identify promising prototype systems that are emerging in the marketplace.

"Georgia Tech has helped us develop relationships with the right players," Hillestad says.

CSUR staff members have also played a role in developing goals and standards at Atlantic Station for both overall development and tenant build-out to maximize sustainability of the project. CSUR staff will continue to work with Atlantic Station's development team to provide technical assistance and applied research to support sustainability goals.

"We're very excited about CSUR," Hillestad adds. "Not only is urban revitalization a complicated issue, it's also time-consuming and expensive for developers. CSUR will provide a strong leadership presence and reduce the learning curve for developers by helping them conduct urban revitalization and better understand opportunities."

■ For more information, you may contact Bob Schmitter, GTRI, Atlanta, GA 30332-0837. (Telephone: 404-894-8064) (E-mail: bob.schmitter@gtri.gatech.edu)

A technology developed at Pacific Northwest National Laboratory melts solid waste into a stable, glass-like product for disposal. The technology, called controlled plasma glassification, can be used for medical, hazardous, radioactive, industrial and municipal solid waste. Developers at Atlantic Station hope to implement a similar technology there with technical assistance from Georgia Tech researchers.

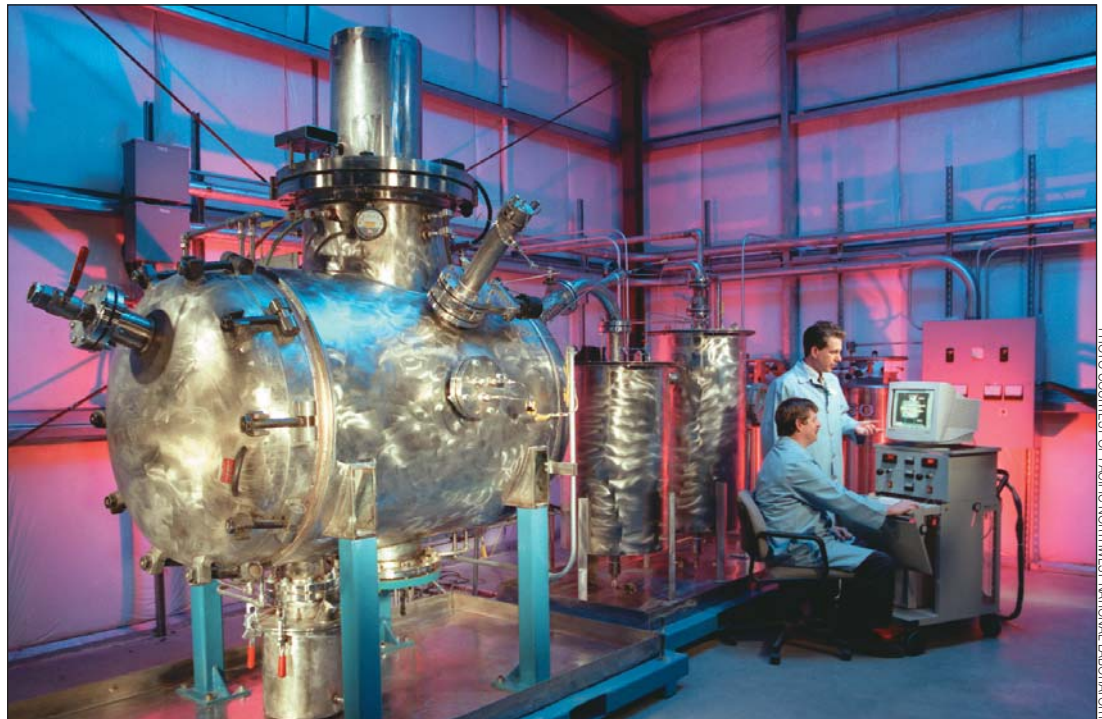


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