Fifth Street Project pushes campus limits across connector

The study confirmed the feasibility of Tech's vision for what has come to be known as the Fifth Street Project.

The entire Fifth Street Project is estimated to cost $148 million, and financing will come from several sources. The hotel and conference center will be paid for with revenues it will generate. The Continuing and Executive Education Centers will be funded from program fees and educational allocations. The Bookstore will be paid for with revenues it generates from sales and rental of street-level retail space. Funding for the DuPree College of Management building, estimated to cost $35 million, will come from private donors.

The DuPree College of Management's new high profile building near the corner of West Peachtree and Fifth Street will make the business school more accessible to the thriving Midtown business community, enabling the College to better meet the growing demand for education programs in technology-oriented management, entrepreneurship and executive education. The building will also house interdisciplinary management and technology programs such as the Center for Quality Growth and Regional Development, a collaboration that uses Atlanta as a living laboratory to study issues related to urban growth.

Over the past two decades, Tech's continuing education programs have grown by nearly 300 percent. The proposed Continuing Education and Economic Development Institute facilities will supply the much needed space for these programs and provide facilities designed to deliver and accept quality distance learning programming.

The Jones Lang LaSalle study concluded that Tech's Fifth Street site is well suited for a hotel and conference center. Students attending multi-day classes for executive degree programs, continuing education and other life-long learning courses will fill many of the hotel's rooms. Further demand is expected from alumni, since the hotel will be within walking distance of both Bobby Dodd Stadium and Alexander Memorial Coliseum. In addition, Tech hosts many conferences that the existing meeting rooms on campus cannot accommodate. Many
GTRC and Office of Sponsored Programs on the move

The Office of Sponsored Programs (OSP) and the Georgia Tech Research Corporation (GTRC) will be relocating from the Centennial Research Building (CRB) to 505 Tenth Street in a move scheduled for late July. "We are making every effort to minimize service interruptions during the move," said Jilda Garton, associate vice provost for Research and general manager of GTRC. "We will have at least one contracting team up and running throughout the move to handle emergency items. However, principal investigators need to get their proposals in as early as possible."

Garton said that the Industry Group, which includes the Office of Technology Licensing and the Industry Contracting Office, will remain in CRB. "There will not be enough space to accommodate all of our people until a second phase of renovation is completed. Therefore, we'll now handle industry contracting and technology transfer out of the CRB and everything else will go to our staff at 505 Tenth."

Also remaining in the Centennial Research Building is the OSP Copy & Distribution Center, which handles the copy, pack and ship functions for proposals and reports. Barbara Henry, manager of OSP's Office of Research Administration, Compliance, Training and Technologies, said that the move will create some logistical challenges, but she anticipates no serious disruption of service.

OSP Director Duane Hutchison said, "When Contracting moved into the CRB from the Administration Building more than 15 years ago, we settled in quickly. Barring any unforeseen electronic connectivity issues, our plan should minimize any downtime for the services that we provide."

The Office of Sponsored Programs oversees proposal submission and project administration for all externally funded contracts and grants. More than 2,000 proposals are processed through OSP annually, and OSP currently administers 1,900 active projects. OSP also provides workshops for research faculty and administrators, assists in locating funding sources, and administers the Institutional Animal Care and Use Committee.

GTRC provides a variety of business management and fiscal services to the campus, such as appropriating funds for facilities and equipment, initial program costs, and travel advances, and supporting programs for research faculty tuition reimbursement. GTRC's Office of Technology Licensing manages, protects and commercializes the Institute's intellectual property, providing such services as obtaining patents on Georgia Tech inventions and licensing technologies for development and commercialization by industry.

For more information, including a detailed outline of offices in each building, see www.osp.gatech.edu.

Tech adopts business casual dress policy for summer and Fridays year round

The President's Cabinet approved on June 6 the following policy for a more comfortable clothing standard for the summer months and extends the opportunity for "Business Casual Dress Fridays" campuswide throughout the year.

The new summer Business Casual Dress Policy is effective immediately and will extend through Sept. 4. The policy is intended to provide general guidelines; academic and administrative units have latitude in determining appropriate standards of dress for their always-work environment within the 'spirit' of the policy. Comments and suggestions can be directed to Jean Fuller at 404-894-9411 or Chuck Donbaugh at 404-894-2499.

• Policy: It is the policy of the Georgia Institute of Technology that each employee's dress and grooming be appropriate for our work environment. The normal dress code will be relaxed during the summer to provide a more practical and comfortable clothing standard. This policy will be in effect at the beginning of the summer semester and ending after the Labor Day holiday. Fridays throughout the year will be designated as Business Casual Dress Day. It is the intent that each employee may choose to wear less formal attire as long as clothing is in good taste and will not negatively affect the Institute's image.

• General: Acceptable personal appearance is an ongoing responsibility of each employee. Specifically, common sense should be the basic guideline and employees should not wear suggestive attire, athletic clothing, shorts, T-shirts, novelty buttons, baseball hats and similar items of casual attire that do not present a businesslike image.

• Exception: Employees whose jobs require them to wear uniforms and/or whose attire must meet prescribed safety standards are not covered by this policy.

Fifth Street, continued from page 1

users are also expected from nearby businesses and in-town conventions and trade shows.

Currently, the Fifth Street bridge across the expressway is a little-used back door to campus. Plans call for the bridge to be widened to add broader sidewalks and green space, creating an enhanced gateway to the campus and a pedestrian-friendly route between central campus and the Midtown business district.
Researchers use acoustic waves and radar to detect buried land mines

John Toon
Research News and Publications

By simultaneously using sound waves to create tiny soil disturbances and precision radar to measure the resulting movement, Georgia Tech researchers have developed a new method for detecting land mines buried in the soil. The technique could be combined with other advanced location methods to create a new generation of land mine detector able to find different types of buried weapons across a broad range of soil and environmental conditions. The project is sponsored by the U.S. Army Research Office and the Office of Naval Research.

With more than 100 million land mines buried throughout the world causing some 26,000 injuries and deaths each year, the stakes are high. But existing mine detectors do not work under all conditions and have particular difficulty finding small antipersonnel mines made mostly of plastic. "Detecting land mines is a very difficult thing to do," said Waymond Scott, associate professor in the School of Electrical and Computer Engineering. "Every existing method for mine detection has conditions under which it will work very well and conditions under which it will fail."

Scott and collaborators Peter Rogers, Gregg Larson, James Martin and George McCall—all of the Woodruff School of Mechanical Engineering—use a transducer to create seismic waves that travel through the soil containing land mines. This special class of elastic waves causes the soil and everything buried in it to be displaced slightly. That tiny movement in the surface of the soil—less than one micrometer (one ten-millionth of an inch)—can be detected by electromagnetic waves from a small radar system that scans just above the surface of the soil.

"The properties of the mine are very different from the properties of the soil around it," Scott explained. "That causes the displacement around the mine to be different from the soil, because of a very strong interaction of the waves with the mine."

The technique differentiates mines from other buried objects such as rocks or sticks because of the different mechanical properties of the mines. The interaction and unique resonance created by the waves interacting with the mines' hollow shell and complex trigger and explosive mechanisms make them stand out from solid objects.

This ability to differentiate mines from other buried objects reduces the risk of false alarms and could give the new technique an advantage over other detection methods. "There are so many things in the ground that can look like mines," Scott said. "The problem is often not finding the mine, but differentiating it from the clutter around it."

Using a pit containing 50 tons of damp sand, the researchers have demonstrated they can detect seven different types of buried mines. The deactivated weapons range from small antipersonnel mines just a few inches in diameter planted near the surface to much larger antitank mines buried more deeply.

These experimental results closely match computer modeling done to help the researchers understand the complex interaction between the elastic waves in the soil and buried objects. Before the technique can be practical, however, the researchers have many hurdles to overcome. First, the wave interaction must be studied in many different soil types and environmental conditions. Now, for instance, the elastic waves have only been studied in damp compacted sand. Different soil types and conditions may require different frequencies and adjustments to detection methods.

The detection process must also be made much faster. To facilitate that, the researchers have begun developing a beam-forming array that would eliminate the need for the radar to make several scans above the soil surface. They are also considering an ultrasonic technique for detecting the soil displacement.

The waves now must be propagated by a transducer source placed in contact with the soil. The researchers are investigating non-contact wave sources such as an electric arc, loudspeaker, microwave, laser and water jet.

Ultimately, Scott expects the acoustic-electromagnetic detection method to be combined with other technologies, such as detectors that sniff the chemicals given off by explosives in the mines, existing metal detectors and ground-penetrating radars. He believes only a combination of methods will offer reliable results over a wide range of devices and conditions.

The researchers hope to field test a prototype system within several years, but say it will be longer before the technique can be used to locate and remove the live mines buried worldwide. Also participating in the research are Christoph Schroeder, Ali Behboodian, Kangwook Kim, Seungho Lee, Andrew Overway and Cheng Jia, in the School of Electrical and Computer Engineering, and Blace Albert, Fabien Codron and Andrew Slack, from the Woodruff School of Mechanical Engineering.

MARTA may take tourists to the moon

Waymond Scott displays a sample of inert land mines used in the team's research, while Christoph Schroeder adjusts the radar used to detect soil displacement. The Georgia Tech team used a transducer to create seismic waves that travel through the soil containing land mines. This special class of elastic waves causes the soil and everything buried in it to be displaced slightly.

The properties of the mine are very different from the properties of the soil around it, said Scott. "That causes the displacement around the mine to be different from the soil, because of a very strong interaction of the waves with the mine."

Researchers may take tourists to the moon based on the success of the Georgia Tech team's design. The team's design used a liquid oxygen-liquid hydrogen chemical rocket for primary propulsion, but used a large aerobrake (heat shield) to slow it down when it returned back to the Earth from the Moon.
Brown Bags/Lectures

July 12

"Georgia Tech's University Club and What It Means To You," by Steve Dickerson, professor emeritus, Woodruff School of Mechanical Engineering. 11:30 a.m. – 1 p.m., Student Center, Room 319.

Courses/Workshops

Summer self-defense classes offered through Georgia Tech Options for faculty, staff and students. Participants will receive hands-on instruction in proactive and reactive self-defense techniques. All classes held at Student Athletic Complex. To enroll, contact Kay Reedy at 404-894-3987 or kay.reedy@sac.gatech.edu. For more information, call the instructor, Michael Mobley, at 404-329-9770.

Miscellaneous

Long-term financial planning involves evaluating potential income sources and factoring in the impact of taxes, inflation and the larger economic picture. Meeting with a TIAA-CREF Individual Consultant can help individuals make informed decisions. A TIAA-CREF consultant will be on campus to conduct individual counseling sessions on the following dates: June 28-29; July 26-27; Aug. 30-31. To set up an appointment, see http://www.tiaa-cref.org/mloc or call Michael Odom at 800-842-2003, ext. 3522.

June 20

Mark Mathabane, author of the best seller, Kaffir Boy, will speak and sign his newest work, Miriam's Song ($25). 12:30-1:30 p.m., Georgia Tech Bookstore. Contact: 404-894-1642 or gigi.weinrich@bks.gatech.edu.

THE WHISTLE

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