

Renovations of IIT's Oldest Structure Underway

With its bold sandstone and red pressed-brick façade, and commanding Romanesque design, Main Building is as much a visual representation of IIT as the university's sleek steel-and-glass structures built more than a half-century later—together symbolizing the successful marriage of old and new on Main Campus.

In February, IIT embarked on a multi-phase Main Building renovation project, sponsored in part through a \$1 million gift from alumnus Bob Schmidt (ME '36), that aims to make the oldest structure on Main Campus a bit newer again.

Constructed in 1891–93, Main Building originally held classrooms, a library, and a gymnasium. One of its most striking features is a series of three stained-glass windows composed of more than 1 million pieces of Tiffany glass.

The attic tower of the Chicago landmark was damaged by fire in 1947–48 and removed. Main Building was last renovated in 1982, which included interior work, masonry tuckpointing, and new windows. This new series of renovations will make Main Building more energy efficient and compliant with the Americans with Disabilities Act (ADA), and correct its outdated plumbing systems.

Terry Frigo, director of the IIT Department of Design and Construction, describes how renovating a historically significant building to be ADA compliant requires some creative solutions. “The main entrance of Main Building is not conducive to adding a ramp without dramatically impacting the historic architecture. Given this constraint, we will be converting the entrance on the north side of the building to be the accessible entrance,” he explains, adding that his crew must also reconfigure the entranceway's interior ramp to meet the slope required for wheelchairs.

In addition to the modifications to the north entrance and a new ramp to the elevator level, phase-one renovations include the replacement of the building's aging elevator. Fortunately, the existing elevator shaft had room to accommodate a larger elevator that meets ADA minimum size requirements.

The second phase of the project will result in new restrooms on each floor of the building and is scheduled to begin as soon as city permits are obtained. “The existing toilet rooms are too small to meet the current ADA requirements,” Frigo says. “We will be taking the space on the south side of the main stairs and building new, fully accessible toilet rooms, with the required amount of fixtures.”

Third-phase renovations, scheduled to begin this summer, will repair the west façade—exterior work requiring the most critical attention—and are being funded by Schmidt. Additional façade work will be conducted in a future phase.



Photos: Mindy Sherman



Campus Safety Top of Mind Following Recent Shootings

This April marked the one-year anniversary of the tragedies at Virginia Tech University, which were followed by a similar shooting at Northern Illinois University this February. In light of these incidents, universities around the country have evaluated their emergency-response programs and implemented security plans that aim to quickly communicate emergency messages to their communities.

“For many universities, these tragedies were a wake-up call that we need to have effective threat-assessment teams in place to address the safety of students and employees,” according to John Collins, IIT vice president for business and administration. “For us, the incidents were another opportunity to reach out and work with the local police, and to discuss contingency operations.”

More than a year ago, IIT implemented a four-pronged communications strategy to ensure the safety of its campuses, including IITalert, mass email, a remote website, and emergency phone bank and voicemail alerts.

“One component is the portal, IITalert, which is an instant-messaging system that allows us to reach anyone who signs up through text messages

to phones or PDAs. This instant communication will be used only in the event of an emergency,” says Collins. A signup drive and raffle were held in February to encourage new registrants.

The plan also includes sending mass emails to the IIT community and posting messages on the IIT website. Collins points out that the university has established an out-of-state backup connection for its website so that important news can be posted remotely should a natural disaster disable the Chicago area. IIT has an emergency voicemail message that can provide callers with updated information in the event of a crisis, as well as a phone bank that can be set up quickly to answer calls live.

Naturally, speed is a critical factor. Organization is also key. To address this, IIT’s Crisis Response Plan has identified IIT President John L. Anderson as the Crisis Response Leader and Collins as the university’s Crisis Incident Commander, who coordinates the efforts of the Crisis Response Team—faculty and staff leaders who manage the university’s crisis response actions in the event of an emergency.

IIT’s Crisis Response Plan includes three threat levels. Level 1—extreme, requires immediate mobilization to protect part or all of IIT in the event of an emergency such as a hazardous

materials spill, terrorist or bioweapons attack, or major fire. Level 2—serious, involves incidents with the potential to spill out of control, including lesser fires or explosions, natural disasters, utilities loss, or hate crimes. Level 3—not extreme, responds to lesser threats such as property crime and power outages.

Being an urban university, Collins says, IIT needs to be proactive with issues of campus safety. “I always tell people that, in my assessment, the IIT [Main Campus] is a safe campus, but we’re not crime proof,” he says, adding that redevelopment in the area surrounding Main Campus has had a positive impact on campus, as have educational initiatives at IIT designed to increase awareness about the “common-sense approach” to safety.

With 53 emergency telephones around campus and a staff of patrolling and undercover officers, IIT, in partnership with local law enforcement, is working to ensure a safe campus environment. “Chicago police and IIT’s Department of Public Safety are vigilant in their patrol and visibility [in the neighborhood]. And we continue to educate students that the rules of safety apply whether they’re walking across campus or downtown on Michigan Avenue,” Collins says.

<http://publicsafety.iit.edu>

Nine New Members Join IIT Trustees

At its November 2007 and March 2008 meetings, the IIT Board of Trustees elected a total of nine new trustees:



Sherita Ceasar (ME '81, M.S. '84), vice president of product engineering, planning, and strategy for Comcast Cable Communications, Inc.; member, IIT Department of Mechanical, Materials, and Aerospace Engineering Advisory Board



Giuseppe “Joe” Calabrese, executive vice president of Harris Private Bank, Harris Financial Corporation



Marc Hannah (EE '77), vice president of technology development (retired) for Silicon Graphics, Inc.; member, IIT Institute of Design Board of Overseers



David C. Hovey (ARCH '67, M.S. '71), founder and president of Optima, Inc., and associate professor in IIT College of Architecture; board member, Mies van der Rohe Society



Jamshyd Godrej (MAE '72), chairman and managing director of Godrej & Boyce Manufacturing Company, Ltd.; member, IIT International Board of Overseers



Christopher “Chris” Lee, president of Johnson & Lee, Ltd.; member, IIT College of Architecture Board of Overseers



Paul F. McKenzie, vice president of Centocor R & D



Tim Stojka, chief executive officer of Fast Heat, Inc.



Alan “Bud” Wendorf (ME '71), chairman and chief executive officer of Sargent & Lundy; board member, IIT Alumni Association

Environmental Management Program Receives High Marks

Photo: Michael Goss



George Nassos, EM program director

At a time when the challenges of environmental sustainability are unfurling at a steady clip, the IIT Stuart School of Business Environmental Management (EM) Program has been at the forefront of the issue for an impressive 13 years. Developed as an interdisciplinary area of study, the EM program integrates law, science, and business to address the demand for uniquely trained management professionals who understand pressing environmental issues such as energy efficiency and carbon management.

One of a handful of such programs in the United States and the only one in the Chicago area, the Stuart EM program continues to be a leader in its field.

Every two years, Beyond Grey Pinstripes, an independent ranking of the Aspen Institute Business and Society Program, conducts a survey of more than 600 accredited graduate business schools worldwide. In the 2007–08 study, IIT's program was ranked 48th (top 10 percent) overall in the world and 33rd in the nation.

In the most important of the four criteria, coursework, IIT was ranked 11th in the world and eighth in the United States.

According to George Nassos, EM program director, the number of degree applicants to Stuart's EM program rose 300 percent from fall 2006 to fall 2007. Additionally, enrollment for two key courses, Industrial Ecology and Environmental Law and Regulation, is also up, nearly doubling since last fall.

Along with Nassos, key EM faculty include Nasrin Khalili and JohnPaul Kusz, who with other faculty bring a range of professional experience, including work for the Environmental Protection Agency, the Department of Energy, and leading corporations and organizations from around the world. Students gain hands-on experience through internships and study projects, including developing a new business model with a local environmental service firm, managing corporate and community assets using geographical information systems technology, and conducting a life-cycle analysis for new products.

The program has established partnerships with CITA-WIND, a French company developing new wind turbine technology, and the Green Exchange in Chicago's 1st Ward. These alliances support the program's mission to prepare students for management-level positions in sectors that foster a more sustainable environment.

The program's success has also demonstrated a kind of "second generation" achievement. Of the estimated 225 EM program alumni, Nassos says, approximately 80 percent work in the Chicago area. "When a job becomes available in their company, I am usually the first person they contact when looking for a new EM student," he says. However, that doesn't mean the program is exempt from the challenges of basic supply and demand: "I have more full-time job opportunities and internships that come to me than I have students to fill. This past summer, R. R. Donnelly needed an intern to work on a carbon footprint project, but I had no student looking for an internship. They all had something," says Nassos.

Word of the program's work continues to spread. During the past few months, Nassos explains, he's received calls almost every week from companies that are interested in becoming sustainable. "Last year, Ernst & Young started a sustainability practice to consult for its clients. A friend of mine started the group, which consisted of about six people nationwide. Five of these people are in Chicago. He came to hire IIT Stuart students, and right now they are looking for more positions."

Nassos is currently hosting a blog to foster dialogue on environmental and sustainability issues in business. To learn more or to visit the blog, go to www.sustainability.com.

www.stuart.iit.edu/graduateprograms/ms/environmentalmanagement/index.shtml

—Pat Cronin

sustainability

Point and Shoot



Photo: Bonnie Robinson

Chris Chock (CE, 2nd year)

Though Chris Chock received his first camera just two years ago as a Christmas gift, his relationship with photography immediately “clicked.” Fifty thousand times, to be exact—the number of photos Chock took before the new point-and-shoot “burned out” in less than seven months.

In 2006, when the sophomore chemical engineering student graduated from University Laboratory School in Honolulu, he also “graduated” to a digital single lens reflex camera, the type of equipment favored by many professional shooters for its ability to capture on film exactly what the photographer sees through the lens.

One month later he was at IIT and soon after began submitting photos to *TechNews*.

Chock’s self-deprecating humor is evident as he recalls his inauspicious rise to photo editor. As he began to more regularly submit his work to the newspaper in spring 2007, he learned there would soon be an opening for the photo editor position. “So I applied and, seeing as I was the only—so therefore best—applicant, I got the job.” Beneath the glib explanation, however, is a genuine affinity for photography, its art and technology. “The thing about photography that I enjoy the most is using the camera to see things that the eyes can’t.”

One way Chock chooses to explore this idea is through his use of long exposures. Applying this technique is difficult in terms of the technology, as taking a long exposure requires much more planning. “You have to think about every shot beforehand, compose and envision it.” He often photographs water and likes to watch how its individual lines become more unified, like a painter’s brushstroke. “The outcome is that the photograph makes the chaotic, windy water take on a gloss, and you can see the reflections build up over time.” Having grown up in the valley region of Honolulu, Chock developed his interest in water as a subject in part through his observations of streams near his home.

For the photographs he takes for *TechNews*, Chock is always looking for a new angle—in perspective as well as content. “I try to find a way to take the photo in a way people haven’t seen before.” His most memorable assignment for the paper was the press reception for the *Sympathy for the Devil* exhibit at the Museum of Contemporary Art. “I was able to meet some of the artists and take pictures of the art and the museum. It was a really fun experience I never thought I’d get, especially being a chemical engineering student.”

His main goals for his photography are currently directed toward gaining more experience. In a philosophy often associated with athletes rather than artists, he says he’s constantly pushing himself harder, being motivated by “the desire to do better.” “Right now, I’m just working on acting on my ideas as they come to me. But isn’t that what a photographer’s supposed to do?”

—Pat Cronin

New Undergraduate Program Increases Access to Research Experience

Last November, IIT launched the Office of Undergraduate Research with the purpose of centralizing research opportunities and more proactively identifying new research endeavors for students. Using its website as a clearinghouse for posting on- and off-campus undergraduate research opportunities, the office has also begun a new IIT Undergraduate Research Fellowships program, which supports funded, semester-long research projects that pair students with IIT faculty working in their area of interest. Both students and faculty can submit research projects for consideration.

“There are many opportunities for undergraduates on campus, but often the hardest part is letting students know about them,” says Eric Brey, associate dean, assistant professor of biomedical engineering, and director of undergraduate research. Another challenge is ensuring that students participate in projects that are approachable—a hurdle that undergraduates can experience when placed in more advanced settings.

The IIT Undergraduate Fellowships address this issue through projects that focus on attainable undergraduate learning. The office received an impressive 60 student applications and 30 faculty applications for its first round of fellowship funding. A total of 15 projects were funded for the spring semester—ranging in topics from unmanned ground vehicles to nanoethics to low-cost water supply systems.

“Research experience like this helps students determine whether they want to attend graduate or medical school. It also helps them to decide if they want to pursue a career in research; while experience with industry sponsors can lead to jobs,” says Brey. “For other students, research that illustrates ‘why they’re doing what they’re doing’ is a bridge toward applying what they’re learning in the classroom.”

Brey points out that financial constraints can prevent students from taking on research assignments, or may require them to balance a job with their coursework as well as outside research. The generous stipends provided for in the IIT Undergraduate Research Fellowships allow students to focus solely on research. In an added learning component of the program, students are asked to submit articles describing their research accomplishments to an online journal being developed by the Office of Undergraduate Research. In the future, the office hopes to provide funding for students to present papers at conferences.

www.iit.edu/research/undergraduate_research



Alyssa Appel (BME, 4th year)

Photo: Bonnie Robinson



UTP Watch

The core and shell construction of Incubator-South in University Technology Park At IIT (UTP) is now complete. Funding from the State of Illinois and IIT has enabled the university to develop 28,000 square feet at the south end of the old Engineering Research Building, designed by Ludwig Mies Van der Rohe in 1944. The space, when completely built out, will accommodate up to 30 more startup companies in 19 wet labs and 15 dry labs. Currently, IIT is seeking funding from a number of sources to complete the build out.

On the company front, the data storage company, Cleversafe, graduated from UTP in January 2008 and moved downtown, as it continues to grow. Cleversafe joined UTP in May 2005 with three employees and left with 35, including many IIT alumni. Comarch, a Polish software-development firm, nearly doubled the size of its space in IIT Tower, as it grows to meet the demands of the North American market. New startup companies within UTP include AlterVia Fuels, Inc. and Red Rabbit Software.

www.universitytechnologypark.com



IIT Launches Chicago WiMAX Initiative

Catastrophic forces of nature such as the tsunami that struck Southeast Asia in 2004 and Hurricane Katrina destroy not only lives and homes but also the telecommunications infrastructure necessary to bring aid to stricken regions. In both those cases, however, a wireless digital technology that utilizes a microwave link instead of a wire to secure a connection allowed relief workers to coordinate their efforts.

This form of technology—worldwide interoperability for microwave access—better known as WiMAX™, has arrived in Chicago, the first large-market area in the United States to be outfitted for a WiMAX network. IIT helped to introduce WiMAX to the business community as it showcased the university's role in the Sprint initiative by organizing WiMAX Day at IIT, held March 28 on Main Campus. Presentations were made by representatives from IIT; Sprint; Cognizant; WMX Systems, LLC; the University of Wisconsin–Madison; and the City of Chicago on the new technology, what it means to the city, and how IIT is involved in the WiMAX project.

According to the WiMAX Forum®, the industry-led, nonprofit group that coined the term WiMAX in 2001, the technology “will provide broadband connectivity

anywhere, anytime, for any device, and on any network.” Offering broadband wireless access up to 30 miles for stationary units and 3–10 miles for mobile units, WiMAX is ideally suited for use in metropolitan or rural areas. (The range for WiFi, in most cases, is 100–300 feet.) Also unlike WiFi, WiMAX does not require a direct line of sight between the source and the endpoint, overcoming the limitations imposed by various terrains and structures. Another advantage is that WiMAX allows for a more efficient and greater bandwidth use, providing an increased number of residences and businesses with TS-1 and DSL speeds.

“The major advantages [of WiMAX] are its adaptable Quality of Service, high-data bandwidth access for multimedia applications, and access to an all-IP (Internet protocol) network,” explains Suresh Borkar (M.S. EE '67, Ph.D. '72), senior lecturer in the Department of Electrical and Computer Engineering (ECE). “There is continuing activity to provide robust end-to-end security and real-time applications like Voice-over IP (VoIP) and streaming video. Distance education can be a key benefit. Law enforcement and fire departments can benefit from its wireless connectivity from different locations. Huge amounts of data can be sent and made available at different locations using WiMAX as the access network.”

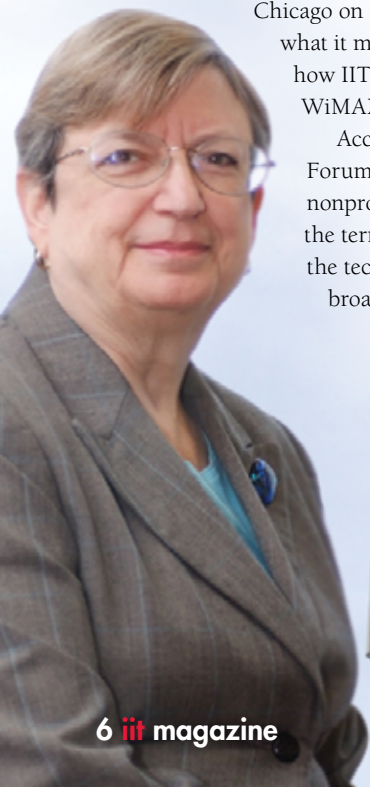
IIT WiMAX currently utilizes the 2.5GHz frequency band of the spectrum, a range that is especially suited to the delivery of point-to-multipoint signals. IIT has licenses for eight channels on this band, using some of them for transmitting live courses to public and corporate sites.

The university has leased six of the channels to Sprint for the Chicago WiMAX build-out.

According to Louise Hewitt (M.S. CST '88), director of IIT Online Technical Services within the Office of Technology Services, WiMAX testing has also been conducted between Main Campus and Rice Campus and between Main Campus and Downtown Campus via a connection on the 88th floor of the Sears Tower, in anticipation of a wide area network (WAN) that will connect all of IIT's campuses. “The mobility advantage of this technology may also be utilized in providing access to live classes streamed over the Internet for viewing and supporting student participation on-the-go,” she says. Borkar notes that IIT's firsthand knowledge of WiMAX and telecommunications faculty position the university to be a local education leader for the new technology, offering its experience to the City of Chicago as it explores potential use of WiMAX throughout Chicago.

The university plans to take its role as WiMAX educator to the next level by offering a series of courses on the subject. Mohammad Shahidehpour, chair of IIT's ECE department, says that IIT will initially offer a set of three two-day Internet-based courses primarily for members of industry, government, and organizations interested in the application and deployment of WiMAX. Topics will include a WiMAX overview, information on radios and antennas, and operations and management. “Subsequently, we expect to offer seminars and tutorials on in-depth topics such as channel characteristics, signaling systems, end-to-end routing and security, and areas for expanded research and evolution,” Shahidehpour adds.

www.ece.iit.edu/wimax/index.php



Louise Hewitt (M.S. CST '88),
IIT Online Technical Services director



Alumnus Helps Bring Tools to Nepali Students



Mark Grandau (EE '86) and son, Ben

“Benjamin Joseph Laxmin Grandau—big name for a little boy,” says his father, Mark Grandau (EE '86), who, with his wife, Charyn, traveled to Kathmandu, Nepal, in November 2003 to take then 5-month-old Ben to his new home in Verona, Wis. The couple had been interested in adopting a foreign-born infant and after studying the adoption process offered by a variety of countries, decided upon a new program in Nepal that seemed to be a good fit.

Once there, what they saw changed the direction of their lives. “Nepal is a poor country limited by resources, which is ironic considering it was the center of the

Asian trade routes at one time,” Grandau says, thinking back to his visit to Kathmandu Valley, a region struggling with issues of pollution and a lack of potable water. That memory of Nepal and the love Grandau has for his son became the inspiration for a big-hearted idea: to help establish a computer-assisted design (CAD) laboratory at Kathmandu University (KU).

Shortly after bringing Ben home, the Grandaus became active in Madison's Nepali neighborhood, assisting other new adoptive parents and undertaking administrative responsibilities at the Nepali American Friendship Association. Upon hearing a National Public Radio show about serving one's community by giving of one's talents, Grandau, a senior software designer for the CAD software company SolidWorks, felt he wanted to do more for his son's homeland. Grandau researched universities throughout Nepal before deciding to send an email to Baula Thapa, associate professor and head of KU's Department of Mechanical Engineering, asking how he could be of service. The academician, whose research focuses on erosion-resistant coatings for use in the hydroelectric generators that power much of Nepal's electricity, responded that he was assembling a CAD laboratory. For Grandau, this was a golden opportunity that he accepted as being his personal crusade. “As an engineer who creates software for engineers, I'm very aware of the benefits to society that the combination of good tools coupled with innovative minds can create,” he explains.

With the assistance of colleagues at SolidWorks, who helped lead him to an anonymous donor within the CAD industry, Grandau obtained a \$135,000 grant, which has made possible the purchase of the laboratory's first four computers, software such as Boxford CNS and ANSYS, and

training for students. Grandau is trying to raise an additional \$25,000 for the purchase of 12 more computers, which would open the laboratory to a greater number of individuals than the senior-level students who, at present, are its primary users. With the funds Grandau has helped raised thus far, Thapa and his students have been able to make strides toward realizing their dreams.

“The support of SolidWorks is a milestone for the development of a modern laboratory at Kathmandu University,” says Thapa, noting that the university was created out of industry, government, and donor support, and has not been able to invest an appreciable amount of money in laboratory development. “We now have a computer-aided design and drafting laboratory, which we would not have thought possible otherwise. We would like to be a leader in this field in the future.” Already, a Japanese company that was recently established in Kathmandu brought in 12 of Thapa's students to run a special software program they learned through the CAD laboratory. “I believe this is just the beginning,” says Thapa. “It will make us comfortable to penetrate into the international market and improve the manufacturing industry in Nepal.”

Grandau's short-term goal for helping set up the CAD laboratory is rooted in his dual beliefs that “innovation is fostered by necessity” and that computer technology is an economical choice in a country with such limited resources as Nepal.

“By doing things in the world of virtual design,” says Grandau, “they can reduce their costs and try to innovate ideas quickly.”

His vision for the project, however, reaches far beyond the Kingdom of Nepal. Grandau believes discoveries made there might one day prevent a global crisis. “Those same resources issues will become worldwide in this coming century,” says Grandau, citing diminishing sources of clean water and air, energy reserves, space, and food. “Getting the tools to design solutions that allow [KU] to evaluate and simulate ideas virtually will allow them to develop solutions that someday could benefit the whole world.”

Baula Thapa [center] with CAD students at Kathmandu University

