

## Department of Facilities

The Operations and Campus Planning, Engineering, and Construction (CPEC) areas of the [Department of Facilities](#) continue their focus on collaboration and integration both with each other and with the community. The transfer of several new buildings from the construction group to Operations and a renewed focus on capital renewal are just two of the highlights of this collaboration.

Facilities Operations continues to sharpen its performance edge to meet fiscal goals and a growing portfolio. Also, this year brought an added focus to support MIT150 Inventional Wisdom, the Institute's sesquicentennial celebration.

CPEC continued its efforts to deliver projects on time and within budget. In support of the Institute, CPEC team members were active in the planning and project management for the MIT150 celebration, including displays and support for the Festival of Arts, Science, and Technology (FAST) activities.

### Administration

#### Communications

Keeping the Facilities website vital and informative was again a prime focus of the Communications team. The team completed its initiative to add images to the directory page allowing customers to become more familiar with Facilities administrative and support staff. They changed the home page consistently throughout the year and coordinated what was posted on the page with Institute events such as Bike Awareness Day, the Transportation Fair, and the Provider Fair. In addition, the team created new web pages to promote the MIT/NSTAR initiative. The Security and Emergency Management Office (SEMO) web pages were under review during FY2011, and a major redesign is scheduled for FY2012.

The team continued working with the Parking and Transportation Office to promote the office's programs. Bimonthly meetings held throughout the year led to a new commuter connections initiative that includes new branding designed by the communications assistant. The new branding will be launched at the parking coordinators luncheon in July 2011, with a postcard mailing to the Institute to follow in the fall.

Institute-wide communications efforts included collaborations on two social media initiatives to assist customers in reporting issues to the department: the email address, [txt dof@mit.edu](mailto:txt dof@mit.edu), and a Building Services application within MIT Mobile. The Communications team worked with the business systems manager and Information Services and Technology (IS&T) on these projects. To make the winter months a little more fun, the department held a contest for the community to guess the date a certain snow pile would melt. Nearly 450 people participated. The Communications team ended the academic year by coordinating a forum for MIT customers.

## **Environment, Health, and Safety**

The Environment, Health, and Safety Office (EHS) and Facilities workgroups that had been formed over the past two years were revived to evaluate progress and to remove obstacles that might be impeding their continued functioning. Emphasis was focused on several programs, including a new Lock Out/Tag Out database and a pilot of an online contractor safety program, to highlight some of the groups' findings.

Fall protection continues to be an emphasis for our department through installation of several new roof railings, evaluation of our roof tie offs, hands-on training, and installation of additional protective equipment. A program to improve our job hazard analysis was implemented and will continue to be a focus in the coming year. Many training initiatives were held over the past year for workers and supervisors.

## **Finance and Accounting**

In FY2011, the Finance and Accounting group completed the initial step in documenting processes and procedures. In addition, we have been working with IS&T to review the procedures in SAP for dual posting of accounting transactions to Operations units and building cost centers. Since the implementation of SAP, the process has required more manual transactions and customized applications. To improve efficiency and reduce the expense of programming in SAP, we are looking at standard SAP functionality to solve this requirement. The goal is to work with IS&T and SAP consultants to make necessary changes for an implementation to take place July 1, 2012.

## **Human Resources and Labor Relations**

In March 2011, five Facilities employees received MIT Excellence Awards in three different categories. Michael Kearns and Arne Abramson, program managers in Project Management, received an award in the Innovative Solutions category for their work on the Massachusetts Green High-Performance Computing Center (MGHPCC) team. Supervisor Paul Pino and administrative assistant Donna Fucillo in Custodial Services shared the Serving the Client Award. Custodian Treva Sheets was honored for her work in the Unsung Hero category.

The Facilities human resources director and the assistant director for labor relations participated on the contract negotiation team between the Service Employees' International Union, Local 615, and MIT. The negotiation team successfully completed its goal, and the two groups signed a new contract in August.

A position of note added to the department is a second senior supervisor in Custodial Services. Felix DeLeon was hired in November 2010 to this position, which has a primary work focus on the evening shift.

## **Information Technology**

The Applications and Desktop Services (ADS) group continued to play an active role in both department and Institute-wide initiatives. The group supported a movement to enhance mobile functionality within the department with iPads and iPhones for employees who would benefit from them. Deployment of these devices continues. The

group also undertook a project to enhance mobile access to SAP Plant Maintenance, which is used for work order management in Operations. In collaboration with IS&T and SAP representatives, this effort has identified multiple initiatives that continue to make progress.

The ADS group has also collaborated on a number of projects to increase options for the MIT community to report issues to Facilities. These projects include txt dof@mit.edu for texting issues to Facilities, the Building Services module of MIT's iPhone/Android application, and the work order mapping project currently in development for reporting issues via a map interface. In addition, the group has helped expand the use of the SCLogic and Taglink applications to more areas of Facilities.

## **Operations**

The Operations group had a busy year supporting significant events such as MIT's 150 celebration while adjusting to a significant increase in square footage to the Cambridge campus portfolio. Additionally, the group embarked on technology initiatives to improve its operations and customer focus. A customer outreach initiative culminated in bringing together all of the diverse areas of Operations at a Facilities forum held in June to educate the community about our services.

Many of the Operations groups were involved in technology projects, including those focusing on new vehicle management, custodial inspection software, additional Big Belly labor-saving trash and recycling receptacles, work order mapping, upgrades to the building management system, and online steam system monitoring.

With an increased capital renewal program on the horizon, Operations is preparing for the additional support and adding its building knowledge to the development and prioritization of appropriate projects. In conjunction with Campus Planning and Design (CPD), Operations has begun to study new locations for the Grounds Services and Repair and Maintenance (R&M) areas.

In March 2011, Facilities hosted events on campus for the annual meeting of the Academic Facilities Council of the International Facilities Management Association.

## **Custodial Services**

The opening of both the new Sloan School of Management (Building E62) and the Koch Institute for Integrated Cancer Research (Building 76) required much planning and staff reorganization by Custodial Services. The effort was essential to achieve the success and high level of customer satisfaction reached in the new Sloan building and the Koch Institute.

Custodial Services continued its collaboration with other Institute departments to promote sustainability and increase recycling efforts. Over the past year, we retrained all of our custodial staff in the proper sorting and handling of recycling waste.

During the first six months of 2011, we formed a working integrated pest management committee that meets on a weekly basis. The goal of the committee, whose members

include representatives from Repair and Maintenance, EHS, and Custodial Services as well as a consultant entomologist, is to address the true source of pest control issues and, by eliminating the source, substantially reduce the number of occurrences. There was a slight reduction in service calls from 2009 to 2010. Calls to date are trending toward another reduction in 2011.

Looking forward, we aim to continue our efforts to ensure a more sustainable program, leveraging technology to improve our services, as well as our efforts to enhance staff development.

### **Customer Service Center**

The renovated space in Building 7 brought a new look and better community access to our Customer Service Center (CSC). Shortly after relocation CSC initiated key distribution, greatly increasing the hours available for the community to pick up keys. In collaboration with the Security and Emergency Management Office, CSC orchestrated procedural and process changes around the entire key process. This led to improvements in the process from a customer perspective, including electronic signature transactions. In February 2011, Smart Board technology was installed in CSC to aid in display of space and Facilities information for visiting customers. In conjunction with the various areas, a reopened work order analysis report was developed to capture lessons learned from the community.

### **Grounds Services**

Grounds Services underwent significant changes in the past year to align itself with its primary mission. In conjunction with the Campus Activities Complex and an outside contractor, Grounds now coordinates event setups throughout the campus to find more efficient ways of supporting the community. Several movers were reassigned to recycling tasks, and the majority of moving functions are now being managed through Grounds with the support of an outside contractor. These changes have enabled resources to concentrate on improving the grounds across the campus.

Grounds Services developed a sweeping plan and added equipment that allows us to sweep the entire campus, excluding parking lots and garages, on a weekly basis. Detailed area-specific job guides were developed for each landscape zone. Under development is a vehicle management plan for the entire Facilities fleet that will track necessary maintenance as well as the current driver and location of the vehicles at all times. With the help of CPD, a new standardized bench was chosen for the campus, and we intend to replace the existing, outdated benches.

Several areas of the campus were redesigned or upgraded, including the Carleton Street plaza adjacent to the Kendall T station and the area bordering the stairs at the Kresge turnout driveway. New landscape areas—the North Court adjacent to Building 76 and the gardens around Building E62—were added to the campus in conjunction with new construction.

## Mail Services

The integration of new buildings into the current routes and the addition of new drop-off and collection points resulted in changes within Mail Services. The group continues to adapt to a changing workload with fewer mailings and an increase in package deliveries. To assist the community with tracking packages, Mail Services instituted an online package tracking system. The group completed its initiative to upgrade and replace collection boxes on campus.

## Off-Campus Facilities

### Bates Linear Accelerator

The Bates Linear Accelerator in Middleton continues to be a busy place and many programs create demand, especially the high-performance computer facility. The focus now is to improve and renew structures and systems in need of replacement in the wake of recent condition assessments. The study of a wind turbine continues, with data collection recently completed. Exterior improvements were undertaken to enhance aesthetics, improve drainage, and reduce the perimeter overgrowth along the fenceline. Two employees' positions were reclassified to recognize their skills and expertise.

### Wallace Astrophysical Observatory

The Facilities group at Bates continues to support Department of Earth, Atmospheric, and Planetary Science users at the Wallace Observatory while making improvements to the facility. Improvements over the past year include sewer system work, driveway paving, and exterior painting of the two domes.

### Katahdin Hill, Lexington

The shared maintenance relationship between Lincoln Laboratory and Facilities Operations was successful in its first year. Repairs of both the lower roof and windows were completed as part of the maintenance of the wellness facility in Annex 5.

## Parking and Transportation

The Parking and Transportation Office received an Excellence in Commuter Options Award from the Massachusetts Department of Transportation. The office also received a Go Green Award from the city of Cambridge for excellence in commuter programs and in recognition of outstanding efforts to promote environmentally friendly transportation.

The office managed the operation of parking, transportation, and commuter programs, including the allocation of 4,323 parking spaces in 39 locations, the annual parking permit application and distribution process for 7,300 permits, 66,000 monthly subsidized Massachusetts Bay Transportation Authority (MBTA) passes, and over 750,000 passengers on the campus shuttles.

During the past year, the office eliminated the need for 900 leased parking spaces and moved parkers to on-campus parking, opened the Building E62 garage to parkers, and began charging for weekend event parking. Many projects supported the biking community, including the replacement and repair of several bike racks throughout

the campus and the installation of a secure bike cage in Building E62. Shuttle riders benefit from a newly installed bus shelter on Amherst Street near Kresge Auditorium, a merger of the Northwest Shuttle with EZRide resulting in increased shuttle capacity and savings, an upgraded shuttle bus fleet over the past few years (with the addition of four buses in 2008, four in 2009, two in 2010, and two in 2011), and a fleet that is entirely handicap accessible.

Assisting students is a primary goal, including support to implement a weekly Whole Foods/Trader Joe's grocery shuttle, a weekend Boston shuttle service, and student economy parking. The office worked with faculty and students from the Department of Civil and Environmental Engineering along with MBTA to implement the mobility pass trial and student semester pass program at MIT.

## **Recycling**

Our efforts in recycling continue to be a success, with the recycling rate increasing to 47 percent in calendar year 2010. The single-stream recycling program is the impetus for that improvement. The additional personnel support resulting from reassignments in Grounds Services is also helping to increase the campus recycling rate. With the success of the pilot Big Belly trash and recycling containers, additional units were placed throughout the campus, saving labor and keeping the campus cleaner.

## **Repair and Maintenance**

Following a reorganization in 2010, Kevin Connolly was named the new manager of Repair and Maintenance. A maintenance mechanic team was created as part of the final stages of the reorganization to focus attention on maintenance mechanic work and free up the zone mechanical supervisors to investigate chronic building issues. This has proved beneficial, especially as R&M managed the transition from construction to maintenance of the two new additions to the portfolio, Buildings 76 and E62.

Additional methodologies, including the ability to report via text message, were developed to make it easier for the community to input work orders. Several tools were procured over the past year to aid in the performance of predictive maintenance of major equipment, including infrared cameras, a vibration analyzer, and laser alignment tools.

Several projects were undertaken to harvest energy savings. Examples include lowered heating set points and raised cooling set points in all buildings with building automation systems and the installation of astronomical clocks to automate outdoor lighting based on sunset and sunrise times. Additional services, including Cimetrics and Clockworks, are in progress to identify repair issues and assist with ensuring proper system operations and energy efficiency. A significant heating, ventilation, and air conditioning project in Building W20 replaced aged equipment, decreasing the building's energy footprint. In addition, water-saving flushometers were installed, and incandescent bulbs were replaced with compact fluorescents in most mechanical areas to reduce energy usage.

The public area inspection program has produced many positive community impact projects and will continue to grow in the coming years.

## **Security and Emergency Management Office**

The Security and Emergency Management Office continues to expand across campus, providing services in response to more than 3,500 customer requests. All newly installed video cameras are being recorded on a server and software system supported by both SEMO and IS&T. SEMO has regular meetings with MIT Police staff to review alarm issues with the goal of generating a better communications link on follow-up requirements. The CCURE servers for SEMO and IS&T were combined and are being placed in a virtual environment that allows for seamless expansion at a greatly reduced cost. An agreement was made with our primary vendor, Siemens Technology, that will realize MIT a 27 percent reduction in service costs. The security systems in three radiation labs were upgraded to include redundant reporting systems and iris scanners, the first of their kind at MIT. Background checks were expanded to personnel who are promoted or transferred to departments, labs, or centers that come within the scope of normal pre-employment checks. SEMO completed a successful implementation of three major security systems in Buildings E14, E62, and 76.

The SEMO/EHS renovation project was completed with additional office space to accommodate the growing needs of SEMO, including a training and conference room that can seat 15 to 20 people.

SEMO assumed the responsibilities for distribution of keys in collaboration with the Customer Service Center. Former R&M supervisor Robin Arena became a member of the SEMO group and coordinates key distribution efforts with CSC.

On the emergency management side, SEMO hosted a regional emergency tabletop drill in which 175 officials from various local, state, and federal agencies participated. The funding agency, the Department of Homeland Security, reported that the exercise exceeded its goals and expectations. Dave Barber, SEMO emergency and business continuity planner, presented at the International Association of Emergency Managers Conference in Texas in October and was also invited by the Department of Homeland Security to attend and critique the Texas A&M tabletop nuclear disaster exercise.

## **Vendor Management**

The Vendor Management area continues to provide value to Operations by implementing consistent request-for-payment processes and timely and cost-saving agreements.

## **Utilities**

### **Central Utilities Plant**

The Central Utilities Plant (CUP) continued to provide reliable, low-cost electrical, steam, and chilled water service to the majority of the Institute's buildings, labs, and centers. Utilities personnel conducted tours of CUP for numerous groups including some from other universities and outside organizations.

To ensure its continued and reliable operation, the gas turbine underwent routine maintenance at two different points during the year. These maintenance efforts were highly successful and resulted in over 900 days of operation without an unplanned shutdown, unparalleled in the turbine's 16-year operating history.

The Institute entered into a multiyear contract with Siemens Energy Inc. for maintenance and emergency repair services for the gas turbine.

Throughout the fiscal year, the CUP operations team continued to integrate Chillers 9 and 10 and Cooling Tower 10A into the CUP chilled water production process. These assets, first available on a limited basis, became fully available at the end of the summer of 2010. They have had a major impact on the flexibility and reliability of CUP's chilled water plant.

The CUP management team was deeply involved in the design and installation of a new boiler and deaerator at the plant. These improvements to the campus steam supply are scheduled to be completed by December 2011. The new boiler will ensure the firm capacity of the campus steam supply, and the new deaerator will improve the reliability of that supply.

MIT's partnership with Ictec, a firm specializing in improving commodity purchasing strategies and dispatching production assets to maximize efficiency and minimize costs, has continued to develop. In addition to our revised electricity purchase strategy and dispatching of the chillers and gas turbine, Utilities is now dispatching the boilers, turbine inlet cooling, and the satellite chilled water production facility at Building E40. During the past year, these strategies saved the Institute more than \$1 million in commodity costs.

### **Electricity**

MIT worked with NSTAR over the past year to bring two additional supply cables to the campus. These cables have increased the campus firm electricity supply from 30 to 50 mVA, ensuring that the campus will have an adequate supply even during peak demand periods.

### **Steam Production**

Funded by capital renewal and based on a detailed condition survey, Utilities continued to make extensive repairs to the campus steam supply system. These long-overdue repairs will enhance steam delivery reliability and safety on campus. Additional manhole and piping repairs will be undertaken over the next few years to further improve the condition of the campus steam distribution system.

Utilities replaced approximately 400 linear feet of defective steam and condensate piping on Carleton Street. This will substantially reduce energy losses in this section of piping and improve the reliability of the steam supply to the east campus.

During the course of the year, Utilities made numerous scheduled and unscheduled repairs to the steam and condensate system on the west campus. This section of the



campus steam distribution system is in less than ideal condition, and Utilities is pursuing alternative approaches to replacing it. Currently we are studying the feasibility of replacing most of the west campus steam system with an expansion of the medium temperature hot water system that currently serves Buildings NW30, NW35, and W79. This approach, if feasible, would substantially reduce the cost of maintaining the district energy system on the west campus.

## **Budget**

Utilities completed the fiscal year with a \$4.1 million budget surplus, due mainly to lower than budgeted natural gas, oil, and electricity prices and the effect of our partnership with Ictec on our use of commodities.

## **Campus Planning, Engineering, and Construction**

Two CPEC projects received awards from the Cambridge Historical Commission in May 2011. The Building E60 project was a recipient for the restoration of the former Arthur D. Little headquarters at 30 Memorial Drive. The Building 2 project was honored for its unique contributions to preservation for its restoration of the 1916 windows of that Main Group building. The Cambridge Preservation Recognition Program honors property owners and project participants who have done outstanding work to protect the city's architecture and historic resources.

## **Campus Planning and Design**

Campus Planning and Design continued to assist in the development of the MIT 2030 project, which provides the foundation for a 10-year capital plan. Included is the development of a high-level summary website and a series of presentations to wider audiences, including faculty, student groups, and staff. A more in-depth 2030 website will follow later in 2011.

Some major renovation projects suggested in the 10-year plan are now under way. These include the selection of architects and construction managers for the renovation of Walker Memorial (Building 50) for the Music and Theater Arts (MTA) program; the renovation of Building E52 for Sloan, Economics, and the Faculty Club; and the renovation of Buildings E17 and E18, primarily to provide swing space. Buildings E17 and E18 will have renovations to extend their life for 10 to 15 years only, anticipating a subsequent repurposing of the block to serve future strategic needs. Later in 2011, studies focusing on a major renovation of Building 2 will be considered for the Department of Mathematics.

CPD is exploring options to accommodate current occupants and examination and event spaces in Walker Memorial that would be displaced by a renovation of the building. Feasibility studies were done for an addition to Building 26, a renovation of Building W31, and a new prefabricated structure on a site on Vassar Street. A study of retail dining is also nearing completion in conjunction with MTA program planning.

CPD has been working with Operations on feasibility and site analysis studies for the relocation of Grounds and R&M, consolidating the groups into a new Buildings and Land Management Center for which the Executive Committee has approved a capital project.

Staff members serve on the board of the Kendall Square Association. The association has developed principles for transportation and development and is preparing to launch a new website.

CPD continues to act as a resource to the Committee for the Review of Space Planning (CRSP) and the Building Committee.

Other planning projects and studies include the following:

- Working with Operations and Project Management to separate bicycles and pedestrians from vehicular traffic in interior courtyards on the main campus. In response to MIT's petition, the city of Cambridge granted four new loading zones on Main Street and Ames Street.
- Initiating a feasibility study for the ongoing operation of MIT Endicott House, with a particular focus on identifying new potential market segments that will fit the current philosophy of operation.
- Active participation on the Faculty Committee to develop a vision for MIT 2030 for teaching and learning spaces, including research into future libraries.
- Working with Housing and the Office of the Dean for Student Life to develop a strategy for renewal of undergraduate residences.
- A renewed effort to analyze campus zoning capacity to illustrate in more detail the land resources available for academic development until 2030.
- Working with consultants to study possible sites and opportunities for a potential nanomaterials, structures, and systems/imaging building.
- Providing staff assistance to the MIT-Skolkovo Institute for Science and Technology in initial campus planning and programming and acting as the planning liaison to MIT's Skolkovo Faculty Committee.
- Working with the city of Cambridge to define MIT's participation in the Hubway bike-share program launch.

## Capital Renewal

The two areas of focus in FY2011 for Capital Renewal were initiating repairs to and upgrades of various buildings and core operating systems that support the Institute and developing a long-term building investment strategy for capital repairs. System upgrades and repair projects were initiated in nearly 30 buildings across the campus and addressed a wide range of needs, including elevator upgrades, repair and replacement of roofing systems, window replacement, foundation and structural system repairs, building envelope repairs, and fire alarm system replacements. In addition to these targeted repair and renewal efforts, Facilities also made substantial progress in completing two full building renewals. The comprehensive repair and renovation

of Maseeh Hall, Building W1, and Building E60 are scheduled to be completed in August 2011, fully addressing the deferred maintenance and capital renewal of both facilities. Moreover, these renovations will provide students in Maseeh Hall with a clean, comfortable, state-of-the-art residential living experience and faculty and staff in Building E60 with an efficient, attractive, and modern office environment.

Responding to one of the guiding principles of MIT 2030, to accelerate systematic capital renewal programs, a focused effort was made during the second half of 2010 to develop an assessment process for current capital renewal needs. During the late winter and early spring, a team of in-house system experts, each with detailed knowledge of the condition and repair of major building and operating systems (including the Project Management, Engineering, Utilities, and Operations areas of Facilities), inventoried capital needs across the campus in collaboration with representatives from the Housing Office, IS&T, and EHS. In the first half of FY2012, this assessment information will be folded into a phase of analysis and strategic planning guided by the director of CPEC, the associate provost for space, and the vice president for finance.

### **Project Management**

The Renovations and Capital Renewal program groups continue to manage large volumes of projects. The Renovations group managed approximately \$40 million in projects and the Capital Renewal group \$20 million. Project Management continues to focus on consistent and reliable project delivery and on development of staff through promotions, training, and hiring.

Highlighted projects for the Renovations group include the Building 7 Rohsenow lab for Mechanical Engineering, space renovations and relocation of IS&T from Building N42 to allow the MIT Investment Management Company to lease the building to Novartis, the backfill for the new Media Lab building (Building E15), renovation of the MIT Museum for the MIT150 displays, planning and project management support of multiple projects for the MIT150 FAST activities, the Building E53 backfill, a renovation feasibility study for Buildings E17 and 18, and improvements to the Infinite Corridor.

The Capital Renewal group managed projects that repaired the foundations and façades of buildings in the northwest area, successfully mocked down a section of Building 2 facades and windows to define a window replacement/façade repair program for the future, installed sprinklers in the libraries in Buildings E53 and 14, continued ongoing repairs to the Albany Street garage to extend its life, completed the steam damage repairs to Building 66, and installed 250 exhaust flow monitors on fume hoods across the campus, increasing their safety and efficiency.

The MGHPCC data center capital project is progressing as planned. The project remains on budget at \$95 million and is on schedule for completion in late 2012. The design is expected to be completed in July 2011, and construction is scheduled to start in August.

### **Engineering**

The Systems Engineering Group (SEG) continues to provide consulting engineering services to other Facilities units as well as many departments, labs, and centers. The staff

supports planning efforts, space change projects, and major capital projects. The group is also responsible for campus-wide energy conservation efforts and, in conjunction with staff in the EHS Office, campus-wide sustainability programs.

In the 2010–2011 academic year, SEG completed testing, commissioning, and training efforts in preparation of turning over three major new buildings to Facilities Operations: Building E62, Building 76, and the Media Lab extension, Building E14. The group continues to work with Operations to make these buildings as efficient and effective as possible for the occupants.

Very aggressive energy performance goals were set for the Sloan School of Management's new building project. These goals were, in some cases, two to three times as aggressive as those of other best-in-class buildings. To date, the building has met or exceeded every goal. The Koch Institute building is also performing very well and, based on recent cooling data, is 40 percent more efficient than our next-newest lab building, Building 46.

### **Energy Conservation Efforts**

The MIT/NSTAR Efficiency Forward program exceeded by 30 percent its first-year goal of a 10 million kWh reduction in electricity use. At the halfway mark of the second year of the three-year agreement, an electricity reduction of 11 million kWh (of an overall goal of 12 million kWh) had been achieved, and it is expected that the final goal will be met and exceeded. The projects making up the program target the large energy-consuming spaces on campus. The 2011 program is targeting laboratories and other high-use spaces.

The Department of Energy Global Superior Energy Performance Initiative and the Department of Energy/Lawrence Berkeley Lab Commercial Building Program Grant project are well underway, and MIT is establishing itself as a leader in both programs. MIT is contributing to the Boston Green Ribbon Commission's work and will be active in a proposed laboratory program.

A first-of-its-kind behavior change program in a graduate dorm that will actually measure the benefits of behavior change is scheduled for the upcoming year. Another first-time project scheduled for the upcoming year is designed to measure the benefits of an attractive, well-sited, and easy-to-use revolving door.

### **Facility Information Systems**

Facility Information Systems (FIS) provided mapping and support for a number of important events during the past year, including the MIT150 celebrations and the 2011 commencement activities. FIS also participated in the Emergency Operations Center, providing critical information during the MIT open house on April 30, 2011. In addition to these planned events, FIS was also an active participant during two unplanned events: a major water main break in Cambridge and a bomb scare on the MIT campus. In each situation, FIS provided critical information to assist with the response.

FIS collaborated with IS&T to update community mapping to include locations of blue phones, public art, bicycle racks, and accessible entrances. It also assisted with the next generation of MIT's mobile services, including capabilities such as reporting issues within buildings by using an iPhone.

The 2011 biannual space audit for indirect cost recovery was completed ahead of schedule. FIS also acquired new space accounting software and developed a plan to move from its legacy space system (INSITE) to a platform that is accepted within the industry. In addition to space accounting activities, FIS processed and archived information for MIT's capital projects, and completed a large scanning project in which digital versions of all operations and maintenance manuals were produced for each of the Institute's buildings.

Finally, 3D models and animations of the MIT campus were created to support MIT's planning efforts. Models were used to create flyby animations to support the MIT 2030 process and MIT president Susan Hockfield's presentations to the Executive Committee, the MIT Corporation, and other senior staff members. The animations were also featured during the 2010 State of the Institute address.

## **Summary**

In Facilities, we maintained our fiscal responsibilities while adapting to the increase in buildings, landscape areas, and services needed by the community. Over the next year Facilities will continue to provide quality service to its customers, and, through the Capital Renewal program, we will improve the appearance and functionality of the campus. Sustainability, maximization of resources, and safety continue to be chief areas of focus.

**Richard L. Amster, Jr.**

**Director, Facilities Campus Planning, Engineering, and Construction**

**John DiFava**

**Director, Facilities Operations and Security**