# Department of Facilities

## Introduction

In October, executive vice president Theresa Stone announced a newly formulated Facilities leadership team. The previous chief facilities officer role was split into two separate, but closely linked, teams. Dick Amster became responsible for leading the efforts of the Campus Planning and Design, Engineering, and Project Management and Construction divisions. Chief of police John DiFava agreed to assume dual responsibilities for the ongoing leadership of Campus Police and Security and for leadership of Facilities Operations and Utilities. The two directors are committed to maintaining a very close collaboration between the Facilities teams and recognize that communication will be the key to success.

## Energy and the Environment

Sustainability efforts in the department run the gamut from using green cleaning supplies, reducing energy consumption with lighting retrofits, reusing landscape materials, to designing and constructing renewable and sustainable buildings.

The department was pleased and proud when the Brain and Cognitive Sciences Complex, which opened in December, 2005, was approved for Leadership in Energy and Environmental Design (LEED) Silver certification. This building is MIT's first to receive this distinction. Among its sustainable features are that the building achieves nearly a 70 percent reduction in potable water use by several methods including collecting and reusing rainwater for water recycling, low-flow water fixtures, and control of lab wastes.

Energy conservation programs to reduce steam use and lighting energy are also underway. Two buildings (the Dreyfus Chemistry Building and the Zesiger Sports and Fitness Center) are pilots for a continuous commissioning program. This program uses the services of an outside firm to monitor hundreds of key operating parameters. This approach identifies systems that are not operating properly and suggests remedial measures in its monthly report. In addition, Facilities recently instituted a steam trap renewal program for academic and housing buildings. About half of the academic building traps were renewed at a cost of $355,000 with an anticipated energy savings of $360,000 for the first year.

## Operations

The primary objective of Facilities Operations is good service to our customers. To assess how Facilities is performing, we conducted one-on-one interviews with several key customers. During the course of conducting these interviews, two facts became very clear: the community members were happy with the finished product, but not necessarily happy with ways parts of the process were handled, such as follow up after, communication about, and priority of work orders.

Plans are underway to improve these three factors that include the creation of a "one-stop shopping" area or customer care center. A second effort is the addition of a zone

to serve the Division of Student Life, since that area comprises a large percentage of Facilities's customer base. The new DSL zone will be devoted to the 33 percent of campus that the Division owns. This new zone will become the sixth zone in our Repair and Maintenance area.

Other major areas of focus are a concentration on improving the appearance in the campus both outside and inside the buildings and filling all vacancies in order to have sufficient numbers of staff to achieve our goals. These improvements will enhance both the quality of our work and the perception that our customers have.

### Grounds Services

Grounds Services continues its efforts to clean and beautify the campus. Several garden beds on campus received additional plants and a renewal of shrubs and perennials. These include McDermott and Eastman Courts as well as the DuPont Garden and the planting beds at Random Hall, Building NW61. We are currently working on redesign and landscaping plans for several gardens, among them are areas around the Stata Center and the President's Garden.

Plans for the upcoming year include the streamlining of certain work processes such as daily cleaning, lawn mowing and leaf removal to make them more efficient. This will enable us to cover additional areas of campus more effectively.

### Repair and Maintenance

A major reorganization of staffing occurred within Repair and Maintenance to accommodate the addition of the new DSL zone. Additional changes were made at the supervisory levels and within some of the shops. Activities of note include:

- Processed 46,600 work orders of which 11,882 were preventive maintenance orders
- Made a significant effort to replace lighting ballasts throughout campus
- Installed bird netting at several places on campus
- Added air conditioning to E33
- Replaced roofs on buildings 18, E19, 36, E38 (partial), N51 (partial), W91 and 2 (partial)

### Custodial Services

The Custodial Services area began implementing a "Green Cleaning" program, particularly in new buildings at start up. The area highlighted the new product line and other features at the Earth Day Fair in April. Other activities of note included demonstrating and testing modern equipment that cleans and/or removes wax from floors using zero cleaning products, called water-only technology and fully implementing our Butchers Command Centers, utilizing super-concentrated cleaning products and resulting in reducing our purchased cleaning products' plastic container wastes by 97 percent and cardboard container wastes by 95 percent. Internal billings and

sales for the department increased 45 percent from FY2007, to $191,329.00, and increased 91.8 percent over FY2006.

### Mail Services

The staff in Mail Services continued their customer service efforts by participating in several events on campus including the Vendor Fair, the Preferred Printers Fair, and the Events Fair. They conducted an IAP event in collaboration with Copy Tech, continued a training program focusing on safety and job performance, added functionality to bulk mail operations with a new machine that allows folding and inserting of collated items, and upgraded their package tracking hardware.

### Off-Campus Facilities

#### *Bates Linear Accelerator*

Many improvements continue to be made at the Bates Linear Accelerator in Middleton, MA. Buildings and site improvements have included paving, landscaping and various mechanical, electrical, and plumbing upgrades. Work is currently in progress to build a High Performance Computing Facility that is expected to be in operation by spring of 2009. Although, this project will be managed by the Laboratory for Nuclear Science, the Facility group at Bates will be greatly involved to ensure success of the project. Additionally, the Department of Facilities continues to be very instrumental in the support of the many other research initiatives presently in progress.

#### *Wallace Astrophysical Observatory*

Much support has been given by the Facilities Department over the past year that has been positively recognized by the Department of Earth, Atmosphere and Planetary Science users at the Wallace Observatory in Westford, MA. In part, this effort has led to an increased usage for the Facility with student programs and research. Improvements have included paving, painting and miscellaneous upgrades to both the site and facility.

Work continues to assess the facility conditions at both sites in an effort to better support the users and the various programs.

## Utilities

The Central Utilities Plant continued to provide reliable, low cost, electrical, steam, and chilled water service to the majority of the Institute's buildings, labs and centers in support of the Institute's educational and research missions. In addition, it offered tours for groups inside and outside the MIT community.

A personnel change of note is that long-time MIT and Utilities employee Roger Moore transferred to a part time (50 percent) position at the end of the fiscal year.

### Electricity

Joint planning is underway with NStar Electric to bring more electricity to the campus. MIT needs additional capacity to support the new buildings being added to the campus.

The gas turbine underwent a major maintenance period following an unplanned outage due to a loss of lube oil casualty, which occurred in July of this year. The maintenance period had been scheduled for October, but was accelerated when the casualty occurred. The gas turbine was returned to service in September. In a separate outage, in April, the gas turbine received several major upgrades, including installation of a new control system. The maintenance and upgrades performed should contribute to excellent reliability for the gas turbine over the next several years.

### Chilled Water

The ability of the Central Utilities Plant to provide adequate chilled water to the campus was enhanced with replacement of the control system on Chiller Number 4 (4,000 ton capacity). A new, modern, digital control system replaced a 30-year-old relay-based system that could no longer be adequately maintained.

Conversion of Chiller Number 3 (400 ton capacity) to Freon 134A and replacement of its control system in FY2007 has proved its worth during this FY2008 cooling season. Steam consumption on this chiller has been cut by 30 percent and chiller reliability has been improved.

The Utilities team is deeply involved in the schematic design of a new cooling tower and replacement chillers for Chillers Numbers 1 and 2 at the Central Utilities Plant. These improvements are needed by 2010 to support the new Koch Institute building.

### Steam Production

Significant repairs were made to the Heat Recovery Steam Generator, which is attached to the gas turbine. Sections of the economizer and superheater tubes were replaced to reduce the number of tube leaks, which were decreasing the machine's reliability.

### Budget

Utilities completed the fiscal year with a $6.4 million budget surplus, due mainly to lower than budgeted natural gas prices and fuel switching from oil to cheaper natural gas.

## Business Resources

The area renamed Business Resources during the last year was restructured following the bifurcation of the department. Communications, Financial Services, Human Resources, and Information Technology report to the two directors and serve the needs of both areas.

### Communications

A new pocket garden map written and designed by the Communications Team was received extremely well by the MIT Community and is now in its second printing. The map, which features photos and facts about the small campus gardens, enhances the department's environmental efforts. Features from the map are highlighted on the Facilities website as well. In addition, the team continues to use the Facilities home page as a beacon of information for the community to learn about all areas of activity within the department.

## Finance and Accounting

With the retirement of the director of finance and accounting, the financial areas received an additional restructuring. There is now a manager for finance for both the Campus Planning and Design, Engineering, and Project Management and Construction divisions and for the operational divisions. The Operations Finance group will review and evaluate how we provide financial services to the organization and management, seeking opportunities for change that will better fit the new structure and allow us to improve our effectiveness.

## Information Technology

The Applications and Desktop Services (ADS) team worked with other Business Resources staff and IS&T on the implementation of the SAP Plant Maintenance module in additional Operation areas. This includes significant work on the GuiXT scripts used in the Plant Maintenance module as well as significant testing. This project is expected to go live in November, 2008.

The ADS team continues to participate in Information and Systems Technology's (IS&T) Voice Over Internet Protocol (VoIP) pilot to replace MIT's legacy phone system with a VoIP infrastructure. A conversion of Facilities phones in NE49 to all VoIP is expected in the next fiscal year. Other efforts with IS&T include a transition of our legacy system, which is used to track keys at the Institute, to a modern, supportable system. ADS continues preparation for upgrades to both the Microsoft Windows Vista operating system and Office 2007 applications. The major upgrades include significant hardware replacement as well as user training.

## Parking and Transportation

The MIT Parking and Transportation Office provides the following services to the entire MIT Community: parking permit allocation, issuance and management; parking facility management; a subsidized MBTA pass program; and numerous shuttle services.

MIT is required by the Federal Clean Air Act of 1973 to provide parking to no more than 36 percent of the MIT commuting population. The Parking Office issues over seven thousand parking stickers between August 15 and September 15 annually.

### *Incentive Programs to the MIT Community*

We continue to move the many manual Parking Office processes to web based applications. Our goal is to transform the Parking and Transportation web site to a self-help Commuter Services web site. We implemented a web-based visitor parking registration system VPIS, which allows departments to reserve visitor parking online at anytime from anywhere. We are working with Planning and MIT's Environment, Health, and Safety Office in an effort to implement an on campus filling station that would allow us to purchase environmentally friendly fuels at discounted prices. We purchased 38,000 gallons of diesel fuel at retail prices in FY2008.

### Security and Emergency Management Office

The Security and Emergency Management Office is responsible for the oversight and maintenance of all alarm and access control systems at MIT. We are converting the previously-leased Garden City alarm system to a more robust system that will provide a more effective and reliable monitoring capability for the MIT Police Department.

We continue to enhance the MIT Emergency Notification System, "MITALERT", by continually updating notification information to ensure that the MIT Community is successfully notified of any situation which has the potential to adversely affect their well being. This will be an ongoing process which will require continual attention.

In close cooperation with the Facilities Department, Campus Planning and Design, Engineering, and Construction Division, our office has provided consultation, design, and specifications for the access control and alarm systems of all new construction projects, which equates to a tremendous cost savings to MIT.

We are participating in a joint effort with Grounds Services to enhance the comfort level and safety for our faculty, students and staff near property adjacent to the CSX rail yard. Our participation in this effort is to upgrade of the existing lighting to a more effective and efficient system, which we hope will make this area a more inviting neighborhood.

Our office will coordinate with personnel from MIT's Environment, Health, and Safety Office, the Nuclear Regulatory Commission, and the Federal Bureau of Investigations to ensure that MIT is fully compliant with the rules and regulations pertaining to our radiation laboratories.

## Engineering

The Engineering Division provides consulting engineering services to other Facilities Divisions as well as many departments, labs and centers. The staff supports the planning effort, space change projects, and major capital projects with their knowledge of existing building systems, review of design engineers' assumptions and proposed solutions, problem resolution during construction, and the testing and commissioning of all building systems. The division is also responsible for utility planning and for the Institute's energy conservation and sustainability efforts.

### Capital Renewal

The Engineering Division is responsible for overall management of the Capital Renewal program. As part of a larger program of work streams initiated by the executive vice president's office and in order to inform future space planning efforts and Capital Renewal projects, the Engineering Division staff has directed an update of the 10-year-old Facility Condition Assessment. Additionally, a process for evaluating and prioritizing the data gathered in that update has been developed. Priority lists of projects are being prepared and will be matched to those projects suggested by institute needs.

### Energy Conservation Efforts

Members of the Engineering Division are active participants in the MIT Energy Initiative. They are working with the Energy Research Council and with the

Environmental Programs Office on the Institute's Walk the Talk program. These efforts are principally directed at making the campus more energy efficient. Using funding from gifts, the executive vice president's office, and from Facilities sources, a number of energy efficiency projects have been undertaken.

A continuous commissioning program carried out in the Dreyfus Chemistry Building (building 18) and the Zesiger Sports and Fitness Center (building W35). This program uses the services of an outside firm to monitor hundreds of key operating parameters in order to identify systems that are not operating properly. To date, savings of $508,000 have been identified and repairs or changes securing approximately 37 percent of those savings have been completed.

A steam trap renewal program for academic and housing buildings was recently instituted. About half of the academic building traps were renewed at a cost of $355,000 with energy savings of $360,000 estimated or measured for the first year.

Various lighting projects have been initiated. These include replacement of lamps and ballasts with more efficient versions, addition or improvement of lighting controls and fixture upgrades. A campus-wide lighting program is expected to cost $690,000 and to return savings of $323,000 annually.

An HVAC coil cleaning pilot project has been undertaken. This program will reduce resistance to airflow in our HVAC systems and will thereby save fan electrical energy. A payback of less than one year is anticipated.

### Sustainability Efforts

After reviewing documentation for the Stata Center project it has been determined that the building qualifies for LEED Gold certification. Because of the cost of backward documentation of the necessary LEED points, the project will not be submitted for actual certification. The six-story, 215,000-square-foot building will sit above an underground parking garage with 420 parking spaces.

The new Sloan School building, currently under construction, will likely be the most energy efficient building on the campus. LEED points are currently being documented and it appears that the building may qualify for LEED Gold certification. Strategies such as demand controlled ventilation, chilled beams, sophisticated lighting controls and enthalpy wheel heat recovery are being employed.

New Ashdown House (NW35) is on track for LEED Silver certification with the possibility for Gold. This is the first MIT dorm to employ heat recovery from kitchen and bath exhaust systems as well as a highly efficient curtain wall system which allowed HVAC equipment of smaller than normal size to be selected.

The PDSI project (named for the Departments of Physics and Materials Science and Engineering, Spectroscopy Lab, and Infrastructure) has been completed and is being commissioned. PDSI consists of a new 49,000 square foot infill building (Building 6C) in the courtyard encompassed by Buildings 2, 4, 6, and 8, along with a comprehensive renovation of 79,000 square feet of adjacent space, infrastructure for an additional

127,000 square feet, and life safety upgrades for an additional 90,000 gross square feet. This project uses chilled beams for cooling and is a test case for future renovations for other Main Group spaces. Energy costs are expected to be reduced and comfort increased, compared with more traditional cooling systems.

Options for the new 360,000 square foot Koch Institute building have been the subject of extensive study, and it is expected to be the most energy efficient lab building on campus. It will be the first large-scale lab building to employ a heat-pipe-type heat recovery system. Also included in the building will be chilled beams, low flow fume hoods and a central lighting control system.

Drawing Information SystemDrawing Information Systems (DIS) and Campus Planning and Design hosted the National Collegiate Computer-Aided Design and Drafting Conference in August 2008. This event attracted over 250 attendees from colleges and universities from around the country, the largest attendance in its history. This event was deemed a huge success by organizers and by members who attended the event.

The conversion of as-built drawings and project record documents into a digital format continued in 2008 with 14,600 documents scanned this year, roughly 20 percent of the total. These documents are being indexed and entered into Facilities' electronic archive system for easy retrieval.

The repository of historic archives located in WW15 was moved to the Fine Arts Enterprises storage facility in South Boston. This collection of historic documents includes original plans from William Welles Bosworth, I. M. Pei, and other signature architects. By moving this collection to a secure, climate-controlled environment, the Institute has ensured the preservation of important pieces of MIT history.

Access to the electronic archive system has been expanded to provide better access for Facilities staff. Desktop applications have been deployed to staff, and two kiosks have been installed to allow uninterrupted access to record information.

The space accounting arm of DIS has successfully captured space changes and organizational reassignments for 2009. This information is utilized by the Institute in enterprise applications, such as SAP, and these ad hoc changes are critical to ensure that the 2009 Indirect Cost Recovery audit will run smoothly.

A Building Information Model (BIM) Task Force has been formed with members of Engineering, Project Management, and Operations, and is chaired by DIS. BIM is a new paradigm in building planning, construction, and maintenance, and the Task Force is charged with understanding BIM's potential impact on MIT.

DIS successfully maintained and upgraded servers to support the functions of the Department of Facilities. Updated desktop software was also deployed to over 40 Facilities users to provide staff with tools to successfully perform their tasks. Applications included newer versions of computer-aided design, document management, BIM, and Geographic Information Services. Server applications, such as

the space accounting website, were maintained and updated to ensure a continuation of the 24/7 access expected from this service.

DIS continues to provide support to IS&T and the Homepage Team with their online mapping applications (http://whereis.mit.edu/). Whereis, which produces between 800 and 2,000 maps an hour, is maintained on a 24/7 basis. These services were updated to reflect the ever-changing conditions of the MIT campus and to minimize down time. DIS also played a role in the development the next generation of campus mapping, scheduled to be unveiled in 2009. This newer application will continue to serve the MIT community and will better support Institute-wide initiatives.

## Campus Planning and Design

Campus Planning and Design (CPD) staff led or participated in eight of the ten workstream projects initiated by the executive vice president. These projects were an effort to get a more comprehensive understanding of capital and academic priorities across the Institute. As the results of these parallel projects began to converge, CPD and other staff began the process of integrating them. They are: Program-Driven Projects; Capital Renewal; Space Needs; Energy Needs; Urban Ring; Transportation; Massachusetts Avenue Options; and Project Integration

During the course of the year, some of these projects resulted in significant adjunct efforts which supported or further developed the original projects.

One of the outcomes of the Space Needs project was the recognition by the provost of the need for a more structured discussion of academic direction. To that end, the provost charged the deans with developing a vision of their academic priorities that could then be used in the discussion of other Institute needs and the development of a capital plan.

The results of the deans' discussion was then integrated with the results of the Program-Driven Projects and Capital Renewal workstreams, and is being used to analyze a potential capital projects strategy.

As an adjunct to the transportation workstream project, CPD staff worked with representatives of MIT Real Estate, Parking and Transportation, the Center for Transportation and Logistics, to take the M-Pass commuting and parking model developed by Professor Atanucci's graduate course and develop it into an administrative proposal for long-term reduction in Institute parking space requirements and costs.

One of the products of the Integration project was an annotated book of maps, charts, and photographs which illustrate most of the other areas of study, including primary aspects of the MIT campus as it currently exists and important campus planning issues. The maps provide a context for discussion of the future growth and character of the campus, and the often complex intersection of future MIT programmatic, campus, and facilities needs.

The Urban Ring project was really a window into an ongoing CPD effort which began roughly eight years ago and will continue as the state's urban plan evolves over the

next decade. During the last year, the primary focus was on developing the Institute's position on the portion of the ring route and station location adjacent to the campus and working on the representation of that position in the state's Draft Environmental Impact Review. The state has postponed the submission of the review until November 2008.

### Permits

CPD has worked with construction project managers to coordinate the permit process and negotiated city and state approval for the Koch Institute (the zoning and building permits), the Media Lab Extension (the building permit), the Sloan School (the building permit, now underway), and New Ashdown House (the lodging house license and the transfer of the educational beer and wine license).

### Massachusetts Avenue Plan

CPD managed the Massachusetts Avenue Plan, which was completed with consultants from Cooper Robertson. The plan was an urban design concept for the redevelopment of the Massachusetts Avenue corridor between Memorial Drive and Lafayette Square.

### Landscape

The Vassar West project is due to be completed in the third quarter of 2009. The project will complete the renovation of a highly visible corridor that runs for more than a mile though the campus.

Trees and shrubs removed from the Koch Institute construction site were transplanted to a number of locations around the campus, including New Ashdown House.

In conjunction with the city's project to resurface Massachusetts Avenue between Memorial Drive and Lafayette Square, CPD designed and completed a project that greatly enhanced the area between the road and Institute buildings by the addition of trees and other plantings, new sidewalks, and additional bicycle parking.

CPD has continued to manage design and construction of new "pocket parks" around the campus. The 2007–2008 projects included Ippen Garden, Kathryn Willmore Garden, and W20/Kresge Renewal. CPD managed the study of, and design preparation for, the renovation of Eastman and McDermott Courts, and the concept for the North Court.

### Stewardship of Campus Design

CPD has a responsibility for stewarding the overall design character and aesthetic quality of the campus. This includes large-scale planning relating to building site, preservation of historic resources, and urban design composition of the campus. This also includes a responsibility to assure that appropriate design decisions are made on individual capital and site improvement projects. In FY2008, CPD provided assistance in this regard for the new Sloan School, the Ashdown House plan, and New Ashdown.

### Committee Support

CPD continues to work with the administration to establish the agendas for the meetings of the Committee for the Review of Space Planning and the Building Committee. CPD

staff support the decision-making process through studies, research, and documentation of committee issues. In addition to keeping committee minutes, CPD provides follow-up for any committee concerns.

## Project Management and Construction

Structural changes to the Project Management organization and delivery model have been implemented starting in February 2008. A shift from a school/DLC-focused organization led by four program managers to a project-type focused organization led by five program managers has occurred. The creation of a Renovations and Capital Renewal team led by new hire Mike Kearns focuses a team of project managers on similar projects. This has freed up the other program managers Arne Abramson, John Engle, Gary Tondorf-Dick, and Milan Pavlinic to carry out the larger Capital Projects Campaign. This shift in organization and delivery is intended to improve customer service and typical project delivery metrics of estimating accuracy, speed of delivery and budget and schedule adherence.

There were approximately 80 significant and representative capital, renovation, and renewal projects managed by the Construction Division of Campus Planning and Design, Engineering, and Project Management and Construction this year, including the following:

### Construction Projects Completed

Construction of a 50,000 square feet infill building between Buildings 4, 6, and 8 serving the Physics Department, the Department of Material Science and Engineering, and the Spectroscopy Lab, along with renovation and various infrastructure improvements to 90,000 square feet of adjacent buildings, was completed in October 2007. Renovation of 29,300 square feet of space in E25 to accommodate Health Sciences and Technology and Earth, Atmospheric, and Planetary Sciences, along with new infrastructure for 90,500 square feet, was also completed in October 2007.

Installation of carbon monoxide detectors throughout residential buildings, in compliance with new Commonwealth regulations, was completed in March 2008. Replacement of the cooling towers on Building E40 and a more aesthetically pleasing facade was added in June 2008. Repairs to the envelope of Buildings N51 and N52 were completed in December 2007. Six elevators in Buildings 10, 18, and E55 were modernized, and roofs were fully or partially replaced on buildings 2, 5, E19, E38, N51, and NW14.

### Construction Projects Underway

Construction continues on a new building for the Media Lab and the School of Architecture and Planning, consisting of 163,000 square feet at the corner of Ames and Amherst Streets, a new building for Sloan, consisting of 217,000 square feet between Main Street and Building E52, along with a 168,000 square feet parking garage which will accommodate 430 cars, a new building for the Koch Institute for Integrative Cancer Research, consisting of 357,000 square feet on Main Street adjacent to Building 68 and the Stata Center, and NW35, a 548-bed graduate residence hall at the corner of Albany and Pacific Streets.

Labs are being renovated and a departmental headquarters is being constructed in buildings 16 and 56 for the Department of Biological Engineering. Streetscape improvements continue to be made on Vassar Street west of Massachusetts Avenue. Six classrooms totaling 8,540 net assignable square feet are being renovated and upgraded, and a new 1,665 net assignable square feet classroom in building 32 is under construction.

High-performance computer centers are being installed in Buildings 4 and 13, and initial engineering and plans are underway for another, major high-performance computer center. The Dewey Library basement, first, and second floors are being renovated. The Carr Indoor Tennis Bubble is being replaced, and artificial turf and lighting improvements are being installed at Steinbrenner Field.

IS&T's computer centers in Building W91 are undergoing cooling and power upgrades, and cooling towers are being installed over the railroad right-of-way adjacent to Building 42. A third phase of renovations to the first floor of the MIT Medical Building, E23, including offices, examining rooms, a pharmacy, labs, and circulation areas, is also underway.

Repairs to Building W45 (West Garage) continue, as well as modernizations of nine elevators in Buildings 11, 36, 66, and E18. Full or partial replacement of the roofs of nine buildings (3, 16, 35, 37, 56, E23, NW17, W1, and W32) is ongoing, and planning and investigations are underway for the renovation of Building W1 into an undergraduate dormitory.

## Personnel Changes

The former deputy chief facilities officer, Jim Wallace, left MIT after 10 years of service, and Anne Whealan, director of finance and accounting, announced her retirement after serving the Institute for more than 31 years. Marty Dugal was promoted to assistant director of operations, and Kevin Connolly moved from lead supervisor to assistant manager of repair and maintenance.

## Summary

In summary, the personnel changes and reorganization of the Department of Facilities has provided the opportunity to reevaluate how services are delivered to the Institute, to establish consistent and reliable procedures and processes for operations and building projects and to create service models and the development of a framework for campus growth that will last.

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**Director, Facilities Operations and Security**

*More information about the Facilities Department can be found at http://web.mit.edu/facilities/.*