BROWN UNIVERSITY

FACILITIES NEWS

SUMMER 2006

INSIDE THIS ISSUE:

A NOTE OF THANKS

To All Staff,

In addition to our continuing focus on energy, this edition of Facilities News highlights the efforts of the physical plant staff, and the many projects underway in the engineering, and planning, design and construction areas, including Phase I of the Utility Systems Renewal and Upgrade project.

With school opening around the corner, in addition to completing the various summer projects, our focus will once again turn to preparing the campus for student arrivals. All of your efforts are appreciated in making this a smooth transition for the students, faculty, and staff.

Also, the positioning review, of key areas within Facilities Management, is well underway with The Friday Group on campus (July 31st through August 4th). They are scheduled to meet with Facilities' staff, University staff (our key customers), and senior-level University executives. Early in the fall, we expect to have their recommendations on how we can best position ourselves to meet the needs of and be responsive to the University's business objectives and to compare with industry standards. from 1:00 PM to 2:00 PM.

Enjoy the remainder of the summer!

Sincerely,

Stephen M. Maiorisi

Vice President Facilities

Recent Efforts to Reduce Brown's Energy Consumption, Emissions, and Costs

Facilities Management has made energy efficiency investments in existing buildings and new construction in the last 12 years that have accumulated over $5 Million in reduced or avoided energy costs. Over 95,000 tons of carbon emissions have been reduced over the lifetime of these measures. Energy efficiency investments have included retrofits of lighting, motors and mechanical systems to reduce energy consumption. Major capital projects in the last 10 years have typically used 30% less energy than similar buildings constructed to minimum energy code standards. Investment in building energy efficiency, both in new construction and through aggressive retrofitting, is the most cost-effective option for Brown to further control growth in consumption.

FACILITIES NEWS:

This edition of *Facilities News* includes information regarding many of the efforts underway. It has been written to provide all FM employees with information regarding Department activities across the various Offices.

If you have any suggestions for articles or would like to contribute to *Facilities News* please contact FM Administration.

Did you know: *Facilities Management is housed on land once owned by Ebenezer Knight Dexter and was once home to the Dexter Asylum, which served as an institution for the care of the poor, aged and mentally ill of Providence from 1828 to 1957.*

Physical Plant's Safety Fair Received APPA's 2006 Effective and Innovative Practices Award

In recognition of the Physical Plant's annual Safety Fair, Brown joins Bryn Mawr College, Georgia Institute of Technology, California State University San Bernardino, and the University of British Columbia as the 2006 recipients of APPA's **Effective & Innovative Practices Award.**

The award, which recognizes programs and processes that enhance service delivery, lower costs, increase productivity, improve customer service, generate revenue, or otherwise benefit the educational institution, was announced at APPA's recent conference in Hawaii and will be featured, along with the other winners, in an upcoming issue of Facilities Manager magazine.

Congratulations!

Grounds—From May 26th through June 2nd, Grounds carted away to transfer stations 17 tons of trash, largely from events. Two trucks hauled 90 tons of custodial trash; and 32 roll-offs, strategically placed for student cleanout, hauled away 97.5 tons for a grand total of 204 tons of trash.

Carpenter Patrick Mooney, 2005 Gaspar/Arzoomanian Award Recipient

Each year Facilities Management looks for that special Union employee who has demonstrated outstanding performance, exemplified quality service and has made a significant contribution to the University.

The award is in honor of the outstanding contributions of two retired Facilities Management employees, Raul Gaspar and the late Leonard Arzoomanian. Annually the Awards Committee seeks nominations from across the University community to determine the winner. This year the award was presented to Patrick Mooney, a carpenter in Maintenance Services Structural Division, at a ceremony held at the University Faculty Club.

Pat received many nominations, all of which testified to his diligence in the performance of his job. During these past 29 years, he has received numerous accolades for his work and has consistently performed in an exemplary manner.

Congratulations Pat!

PHYSICAL PLANT & SERVICE OPERATIONS

In addition to the many Maintenance summer projects, the following are highlights of recent Physical Plant activity.

Custodial Services—invested in two new maintenance programs to care for wood and stone floors, to extend the useful life of the floors and to eliminate costly sanding and refinishing. The process uses a honing and polishing technique with steel wool and diamond slurry to obtain a deep-polished look. This new process has been used successfully in Sayles Hall. Traditionally, refinishing wood floors meant outsourcing the job; now, using this new technology, the procedure is similar to stripping a floor, with a drying and curing time of just two days, compared to one week using the old process, with no odor issues. In addition, the cost savings and longevity of the finished floor is significant. For instance, to refinish Sayles Hall using the old process the cost was $6,900 and lasted about three months; using the new procedure the startup cost was $2,500 and the finish has lasted more than a year; and was completed using in-house staff.

Maintenance—With the wrap up of the heating season we are now full swing into the cooling season and summer projects. Staff are busy performing maintenance on our cooling system equipment, which includes cleaning cooling towers, punching tubes on chillers, and performing operational checks on pumps, chillers, air handlers, and all associated equipment to keep buildings cool this summer.

Division 2—Installation of new domestic hot water storage tanks and pad in Caswell; and in Barus and Holley an eye wash station and two pressurized vessels and re-piping of the booster pumps.

Service Response Center—A Third Shift is on the horizon, which will relieve the Central Heat Plant of taking after-hour calls from midnight to 7:00 AM.

Events Support—In 2005 Facilities Management supported 4,109 events, 659 classroom and 566 exam assists, for a total event/class assist of: 5,334. With Spring Weekend and Commencement behind us, the Events staff are once again busy with summer camps and conferences and preparing for school opening.

ENGINEERING & ENERGY

ENERGY

Last Fall Provost Robert Zimmer and Executive Vice President Elizabeth Huidekoper informed the Brown community about the extraordinary challenge the University faced as a result of unanticipated increases in energy costs as a result of the 2005 hurricanes Katrina and Rita that resulted in a projected cost increase of $3.6 million dollars.

An immediate set of short-term recommendations resulted in a $500,000 reduction in the budget shortfall. This included:

- Creating an energy policy;
- Educating the Brown community about the University's new energy policy and encouraging energy-saving practices;
- Working with residence hall advisors and staff to target the winter break period as an opportunity to substantially reduce energy consumption ("Pull the Plug" campaign);
- Developing alternatives for students returning early from break in order to ease the energy costs of heating buildings with very few occupants;
- Expanding and tailoring the curtailment schedule of buildings over the winter break period including closing the Sciences Library for three days during the winter holiday break;
- Finalizing purchase of fuels at the proper time.

One of the most encouraging outcomes was the widespread positive reaction and support of the Brown community, both in their realistic assessment of the problem and their desire to contribute to the solutions. Students, in particular, recognized this challenge not merely as a budget problem, but as an opportunity to ensure that the University was a responsible global citizen in managing its impact on the environment.

Given the scope and continuing nature of the volatility of the energy market, this support and enthusiasm from the community will be key assets as the University works toward implementing longer-term systemic solutions that will take into account such factors as the age and condition of the building infrastructure on campus, the anticipated growth and upgrading of facilities (e.g., new buildings and renovations) and the uses of these spaces

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PLANNING AND DESIGN & CONSTRUCTION

The design of the home for the department of Cognitive and Linguistic Sciences Department and The Walk continue to progress through schematic design. The intent is for these projects to achieve a LEED silver rating. The design team is exploring several environmentally responsible strategies, including energy efficient ventilation systems, extensive use of natural light, daylight dimming, ground water recharging, drought resistant plantings, local materials, recycled content, etc. Streetscape standards are also emerging from these projects that will minimize storm water run-off and increase the odds of street tree survival. Look for these to show up on Prospect Street and Cushing Street first.

Several exciting projects have moved out of the design phase and into construction this summer, including the renovation of Grant Recital Hall, the Friedman Study Center in the Sciences Library, and renovations to Sharpe Refectory. All three of these projects will include new lighting and improvements to the mechanical systems that will have a significant effect on the efficiency of these buildings.

We are also looking at the campus more holistically. For example, working with Williston Design we are adding the finishing touches to design guidelines for exterior lighting. We have found that by thinking about the exterior lighting in a different way we may be able to use significantly less energy while still improving the quality of the campus as it is experienced at night. (Have you seen the mock-up on campus of the concept and some of the fixtures? We will be following this up with an effort to implement these ideas on and around the Main Green later this summer and fall.)

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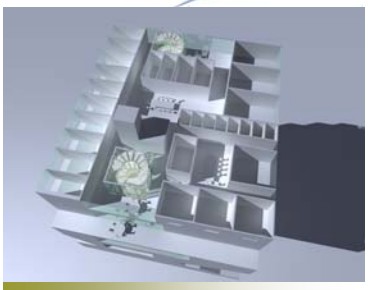
Projects in Design & Construction



Gross Square Feet *45,000;* ***Department*** *Cognitive & Linguistic Sciences;* ***Project Budget*** *$30 million;* ***Related Utilities Budget*** *$34.4 million;* ***Planned Occupancy*** *2009;* ***Architect*** *SOM Education Lab;* ***Construction Manager*** *Daniel O'Connell & Sons*

Gross Square Feet *18.325;* ***Department*** *Cogut Humanities Center & Pembroke Center;* ***Project Budget*** *$9.0 million;* ***Related Utilities Budget*** *$1.0 million;* ***Planned Occupancy*** *Fall 2008;* ***Architect*** *Toshiko Mori Architects;* ***Construction Manager*** *Consigli*

ENGINEERING & ENERGY (continued from Page 3)

and the quality of life of the people who occupy campus spaces.

SITE UTILITIES

In conjunction with the overall campus Utility Systems Renewal and Upgrade project, a number of mechanical & electrical utility projects have been funded and work will be continuing for the next several years. The goal of all of this work is to better serve the increasing loads being placed on the campus mechanical electrical distribution system.

Following is a summary of recent developments and projects that will be taking place over the next six months:

Electrical Distribution – The long-sought 4th utility feeder project is now completed and is in the process of being placed into operation. This feeder and associated campus distribution system improvements will serve the Sidney E. Frank Hall for Life Sciences and future loads nearby. Replacement of switchgear and underground 5KV cables serving the Pembroke campus were completed last year. Future electrical distribution projects will concentrate on replacement of the existing switchgear in the J. Walter Wilson and Sharpe Refectory substations, as well as replacement and upgrade of the 5KV and 11KV underground distribution cabling and associated switchgear throughout the campus. This work will improve the reliability and increase the capacity of the University electrical distribution system.

Central Heat Plant - The work at the Central Heat Plant will upgrade various systems from the original 1968 construction. In 2005, one boiler was re-tubed and new control valves, circulation pump motors and variable frequency drives were installed. During 2006, we will construct Phase 1 of the plant controls upgrade, wastewater discharge modifications and various other deferred maintenance work. Future projects include completion of the controls upgrades, modifications to allow boiler startup during power outages and installation of a smaller boiler to enable the plant to meet summer heating requirements.

District Chiller Plants - Two new district chiller plants will be built beginning in 2007, one in J. Walter Wilson to support the core campus area and one in the Central Heat Plant to support the athletics area. These plants will provide chilled water for building air conditioning more economically than individual building systems.

Distribution Piping for Hot Water and Chilled Water – Phase I of the distribution piping, which began in late April, will extend from the Central Heat Plant to Emery Hall. Phase II will be constructed in 2007, installing a new header from LSB to J. Walter Wilson and will provide new service lines to BioMed, Pembroke Hall, Alumnae Hall and Smith-Buonanno Hall.

Installation of the cooling tower at Rockefeller Library

Rockefeller Library Chillers Upgrade

- New chillers and expansion to have the chillers serve adjacent buildings allows us to retire older less efficient chillers.
- Savings of over 1,000,000 kwh per year.
- Electrical cost reduction of over $100,000 per year.

GeoChem Chilled Water Loop Expansion—Variable Speed Drivers on MacMillan Chillers

- Calculated savings of over 300,000 kwh per year
- Electrical cost reduction of over $30,000 per year.

Rockefeller Library Lighting Upgrade Project

- Calculated savings of over 300,000 kwh per year.
- Electrical cost reduction of over $30,000 per year.

PLANNING AND DESIGN & CONSTRUCTION (continued from Page 3)

Corporation Names Life Sciences Building The Sidney E. Frank Hall for Life Sciences will house more than 50 new laboratories.

- At 168,800 gsf, this building is Brown's third largest , behind the Rockefeller Library and Barus & Holley.
- Total weight of structural steel: 3.8 million pounds—about a fifth of what the Eiffel Tower weighs or the equivalent of 1,266,666 average adult human brains.
- Concrete used as of December 31st:: 64,000 cubic yards, or 200 miles of standard city sidewalk.
- Interior partitions will total 240,000 sf, equal to five football fields.
- Windows: 140 punched windows and the building will have a total of 35,000 sf of glass—an area equal to 7.5 basketball courts.
- Exterior walls will have 391,000 bricks, 51,000 concrete blocks.

Perhaps the most effective way reduce our costs is to be sure our spaces are fully utilized before adding more.

In that vain, there are two studies looking to recapture space, primarily for student use. The first is a study being led by ARO, the architect for the Friedman Study Center, in Faunce House. The intent is to recapture and reorganize space within the building, so that it can be an effective student gathering space. The second is a study examining J. Walter Wilson as an administrative building that will house student advising functions. We may finally be able to put the many issues associated with this 1960's lab building behind us!

An internal change that is intended to increase our operating efficiency is the recognition of a series of projects that will be managed as "Special Projects." These projects are typically small and do not require the level of oversight and approval that often accompanies more complicated projects. By streamlining the delivery process we hope to move these projects forward at a faster pace and in the process spend less money. We are also looking forward to utilizing more in-house labor to help with these projects.

UTILITY SYSTEMS RENEWAL and UPGRADE

Overview:

Renewal, expansion, and upgrade of the existing utility systems at Brown are part of the site utilities work in support of Brown's Academic Enrichment Initiative. The systems included in this project are underground High Temperature Hot Water (HTHW) piping system, underground medium voltage Electric Distribution System, the Central Heat Plant, and C
hilled Water Satellite District Systems.

Schematic designs, which are nearly complete, will guide multi-year, multiphase design and construction work packages that will result in a coordinated renewal and expansion of the existing utility systems. The work packages are now in various stages of design development, construction document preparation and construction.

The resulting utilities systems will improve reliability, redundancy, safety and energy efficiency.

More information can be found on the Utilities Project Website:
http://www.brown.edu/Facilities/Utility_Project/

Project Team

Brown University Facilities Management:
Planning, Design and Construction
Engineering
Maintenance Services

Engineer:
WM Group

Construction Manager:
Bond Brothers

Central Heat Plant

The work at the Central Heat Plant will upgrade various systems from the original 1968 construction. In 2005, one boiler was retubed and new control valves, circulation pump motors and variable frequency drives were installed. Future projects include upgrading the plant controls, modifications to allow boiler startup during power outages and installation of a smaller boiler to enable the plant to meet summer heating requirements.

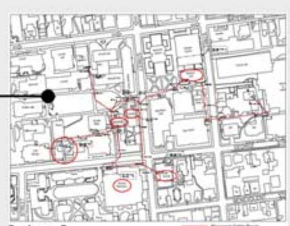
Regional District Cooling

Two new district chiller plants will be built, one in the core campus area and one in the athletics area. These plants will provide chilled water for building air conditioning more economically than individual building systems.

Electrical Distribution

Electrical distribution projects will concentrate on replacement of the existing switchgear in the J. Walter Wilson and Sharpe Refectory substations, as well as replacement and upgrade of the 5KV and 11 KV underground distribution cabling and associated switchgear throughout the campus. This work will improve the reliability and increase the capacity of the University electrical distribution system. It is anticipated work will be segregated into the following packages.

Package	Description
A	J.W. Wilson Generator Removal
B	5kv Replacement Feeder 1
C	J.W. Wilson Rework of 5 & 11kv Gear
D	5kv Replacement Feeder 4
E	Sharpe Refectory Rework of 5 & 11kv Gear
F	5kv Replacement Feeder 2, 3, 6 & 7
G	11kv Replacement Waterman Street
H	11kv Replacement Mid Campus
I	11kv Replacement West Campus
J	11/35kv Feeders from Prince to Wilson & Sharpe
K	J.W. Wilson 11/35kv Primary Switches & Transformers
L	Sharpe 11/35kv Primary Switches & Transformers

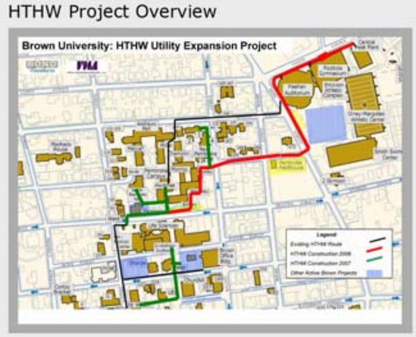


Package D

High Temperature Hot Water Piping

Hot water distribution piping will be replaced from the Central Heat Plant on Lloyd Avenue to the J. Walter Wilson building. The piping consists of two pipes that are 14 inches in diameter, 24 inch diameter with insulation and outer casing, buried underground. The work to be done in 2006 extends from the Central Heat Plant to the front of Emery Hall. From Emery Hall to the J. Walter Wilson building will be completed in 2007. Challenges include protecting or rerouting other utility lines in the ground and maintaining traffic flow for vehicles and pedestrians.

HTHW Project Overview



HTHW Project Schedule

Check Out The Facilities Web Site

www.Brown.edu/Facilities/Facilities_Management

BROWN UNIVERSITY

Name label

Brown Facilities

BUILDING AND MAINTAINING THE CAMPUS

Mission Statement

The mission of Facilities Management is to support the University, by enhancing the quality of physical facilities. We do this through planning, designing, constructing, and maintaining in a responsive, service-oriented, effective, and environmentally conscious manner.

Offices:

- Service Response
- Physical Plant
- Stores
- Events Support
- Planning
- Design & Construction
- Engineering
- Resource Management
- IT
- Business Support
- Administration

EMPLOYEE CORNER

Welcome New Employees

- Jaime Cunha, Custodian II
- Esther Sowah Fahnbulleh, Custodian II
- Melanie Fletcher, Assistant Project Manager
- Robert Massi, Service Response Coordinator
- Arminda Monteiro, Custodian II
- Martha Newbury, Executive Assistant
- Paul Pelletier, Custodian II
- Allen Price, Custodian II
- William Ramuta, Helpdesk Specialist
- Shane Russell, Service Response Coordinator
- Edgar Salazar, Custodian II
- Achim Tah, Custodian II
- Jack Wilcox, HR Manager
- Claudette Xavier, Administrative Assistant

Position Vacancies

We are recruiting for the following positions:

- Building Operator
- Custodian II, AM Shift
- Custodian II, 2nd Shift
- Controls Mechanic
- Energy Manager
- Equipment Mechanic
- Grounds Worker, Ice Rink
- Manager, Mechanical Electrical
- Mechanical Engineer
- Plumber
- Project Manager
- Stationary Eng. Mechanic

Recently Retired

- Sue DeJesus
- Joe McCarthy
- Richard Mello
- Carl Weaver

Reminders

- **Annual Facilities Picnic—August 11th** at Francis Farm in Rehoboth.
- **Summer Hours**—The University will revert to the standard workday of 8:30 AM to 5:00 PM on Monday, August 21st. That Monday is the first day that residence halls open for early arrival of students and, during the course of that week, many students and parents will be returning to campus.
- **Winter Break**—President Simmons has again approved a winter break for 2006—December 22nd to Tuesday January 2nd.
- If you drive a University vehicle 5 or more times a year you are required to complete Insurance & Risk's **"Defensive Driver Training" course.**

Facilities Staff Working Outdoors—Did you know that you should:

- **Drink plenty of fluids** It's extremely important to stay hydrated. Be sure to drink throughout the day. (Try to drink non-caffeinated beverages, preferably water).
- **Eat regularly** Even though the heat can decrease your appetite, try to eat normally.
- **Wear sunscreen**. Not only is sunburn potentially dangerous, it also hinders your body's ability to stay cool.