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In signing the American College and University Presidents’ Climate Commitment in 2008, Temple University affirmed its commitment to demonstrate how a large urban university can act as a model institution and a resource to address growing concerns among citizens and government at all levels and design permanent, affordable, practical and forward-looking programs for sustainability. Keeping these latter principles in mind, Temple University developed its Climate Action Plan in 2010 and has made good progress in implementing the goals it set forth.

Temple University published its first Annual Report on Sustainability in July 2011. This report is an update to the first annual report and reflects the status of Temple’s sustainability initiatives as of the end of Fiscal Year 2012. The report is divided into the three categories of the Climate Action Plan: greenhouse gas reduction, curriculum and research/community outreach.

Our Goals Include:

1. Reducing greenhouse gas emissions by 30% in 2030
2. Integrating sustainability into the curriculum
3. Expanding research and community outreach in climate change

[Left to Right] The green roof at the Architecture Building; Temple’s first Green Star, Eda Manrodt-Fry; School of Communication and Theater’s production of “Urinetown the Musical”, a satirical comedy about limited resources and water conservation.
REDUCE GREENHOUSE GAS EMISSIONS

Temple’s long range Climate Action Plan recommends reducing greenhouse gas emissions by 30% in 2030, with interim reduction goals of 5% by 2015, 15% by 2020 and 22% by 2025. Greenhouse gas emissions are attributed to stationary sources (fuels that are burned on campus), purchased electricity, transportation, solid waste and other small contributors (refrigerants, fertilizers, purchased steam and transmission and distribution losses).

Temple measures its greenhouse gas emissions annually, with FY 2006 as the base year from which the university will reduce its emissions. Between FY 2006 and FY 2011, greenhouse gas gross emissions have decreased by 3% from 226,219 metric tons carbon dioxide equivalent (MTCO2E) to 218,783 MTCO2E. This decrease occurred while the gross square footage (GSF) increased by 10% or 789,357 GSF and the student full-time equivalent (FTE) has increased by 19% or 5,196 FTE students. The FY 2011 greenhouse gas inventory showed that the majority of Temple’s greenhouse gas emissions were derived from buildings (stationary sources and electricity). While building emissions decreased slightly from FY 2010 to FY 2011, implementing energy conservation measures and improving building energy efficiency continue to be critical steps in reaching the university’s reduction goals for greenhouse gas emissions. Other greenhouse gas reduction goals include transportation, waste minimization and recycling and behavior change initiatives.

Normalized GHG emissions data by square footage and student population

Between FY 2006 and FY 2011, Temple’s total gross GHG emissions decreased by 3% while its building square footage increased by 10% and FTE student enrollment increased by 19%.
Buildings account for 71% of Temple’s greenhouse gas emissions. Initiatives undertaken in FY 2012 to reduce emissions from Temple’s buildings include the following:

- Upgrades to the underground steam distribution piping system;
- Conversion of #2 and #6 fuel oil in campus boilers to natural gas, saving 6,000 MTCO₂E in greenhouse gases annually;
- Installation of nine Building Automation Systems (BAS) to control heating and ventilating systems (Beury, Dental (old and new), Engineering, HSC Student Faculty Center, Medical Office Building, Pharmacy, Podiatry, Ritter Annex and Tech Center;
- Emphasis on building energy conservation, including temperature setbacks, system shutdowns when possible and implementation of temperature standards;
- Installation of multiple green roofs on the new Architecture Building and a new reflective roof on the Tech Center; and,
- Submission of LEED (Leadership in Energy and Environmental Design) certification for Architecture, Pearson McGonigle and MERB 8th and 9th floors.

The Architecture Building opened in January 2012. The building was constructed with many sustainable features, including a green roof, efficient window glazing and the use of reclaimed furniture. An application has been submitted for LEED certification.
Transportation accounts for 21% of Temple’s greenhouse gas emissions. FY 2012 initiatives aimed at decreasing the greenhouse gas emissions associated with transportation include:

- Promotion of Bike Temple events which included 27 Urban Riding Basics classes, 4 Basic Bike Repair classes, 2 Bike to Breakfast events, hosting of the Criterium (short course collegiate race) and participation in the Greater Philadelphia Bicycling Coalition summer commuter challenge;

- Hosting of the Philly Think Bike workshop during which members of the Dutch Cycling Embassy worked with interested stakeholders on strategies to improve the biking experience at Temple;

- Marketing of the Wage Works program which permits full time employees to purchase public transit with pre-tax dollars. Participation increased from 829 in FY 2011 to 871 in FY 2012;

- Promotion of Zimride, a ridesharing web based system, which had 652 registered participants by the end of FY 2012; and,

- Addition of 3 compressed natural vehicles in FY 2012 to the university’s fleet, for a total of 24 compressed natural gas vehicles.

In summer 2011, Temple won first place in the Greater Philadelphia Bicycling Coalition contest for most miles posted by an organization.
TEMPLE UNIVERSITY

WASTE MINIMIZATION

Temple published its first Waste Minimization and Recycling Report in July 2011. It identifies strategies for achieving tangible reductions in waste and increasing Temple’s recycling rate to 40% by 2015. Even though solid waste contributes only 2% of Temple’s greenhouse gas emissions, waste minimization and recycling initiatives are important components in mobilizing the Temple community to a more sustainable lifestyle. FY 2012 waste minimization activities included:

- Implementation of the collection of food waste for composting in the Howard Gittis Student Center;
- Introduction of the Swap and Reuse Room, which redistributes surplus office supplies among university departments;
- Installation of water bottle refilling stations to reduce the number of single use bottles. Through the end of May 2012, there were total of 103 water bottle refilling stations installed throughout the University, 59 of which have counters that track the number of single use bottles diverted from the waste stream. Since the program began in FY 2011, Temple has avoided sending 1.2 million single use bottles to the landfill;
- Implementation of the 2012 Give + Go Green initiative in the residence halls, which was responsible for collecting over 13,000 pounds of clothes, food, household items, electronics and carpets donated by students to local charities;
- Cataloging of charitable contributions which consisted of 103,560 pounds of donated items from July 2011 through April 2012;
- Diversion of 85% of Main Campus trash to an Energy for Waste Facility; and,
- Installation of a dedicated organic waste compactor by the Office of Facilities Management to compost organic waste from campus horticultural operations.

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[Left to Right] The Women’s Rowing Team hosts Trayless Tuesday to help reduce waste in the J&H Cafeteria; The Temple community takes advantage of free surplus office supplies.
Temple University had a recycling rate of 32% in FY2011. With a goal of increasing the university’s recycling rate to 40% by 2015, recycling initiatives in FY 2012 included the following:

- Participation in the 2012 RecycleMania contest, in which Temple placed first in the Atlantic 10 Athletic Division for the Grand Champion Category (recycling rate), Gorilla Prize (most recyclables) and Waste Minimization (lowest waste per person);
- Recycling 95% of all construction waste materials in FY 2012;
- Continuation of the recycling program for used computers and electronics. Temple’s Computer Recycling Center (CRC) recycled and rehabbed 4,600 computers, monitors, printers and scanners in FY 2012 offsetting 3,107 MTCO2E greenhouse gas emissions; and,
- Continuation of the graduation gown donation program at the May 2012 graduation, giving graduates the opportunity to donate their regalia (made from 100% post consumer plastic) to future graduates.

Temple recycled 95% of waste materials generated from new construction activities.

[Left to Right] Hooter can’t get enough of his reusable water bottle; A student emptying her dorm room recycling container; Salvaged copier paper boxes were used to create a “box fort”, providing residence hall students with moving boxes.
BEHAVIOR CHANGE

Programs implemented in FY 2012 to promote a green culture and environmental literacy include:

• Green Office consultations, a program that tailors custom recommendations to make an office more sustainable;
• Green Room Rating Systems in residence halls, in which students voluntarily participate to have their room assessed and certified for meeting a sustainable standard;
• Green Stars recognition program which highlights offices and people who serve as exemplary models of sustainability; and,
• Caught “green handed” campaign which rewards students for their sustainable actions on campus.

The installation of water bottle filling stations have saved over 1.2 million single use bottles from the landfill.
INTEGRATE SUSTAINABILITY INTO THE CURRICULUM

An important element in Temple’s Climate Action Plan is to promote broad sustainability efforts through academic programs that prepare students for leadership in this area. In the fall semester of 2011, Temple launched its undergraduate Certificate in Sustainability. The certificate will provide an opportunity for students to further their knowledge and skills to contribute to sustainable systems from the viewpoint of different disciplines, to help them become effective leaders and agents of change for sustainability, and to make them more competitive in the changing job market as some sectors move to a green collar economy.

Other advances in integrating sustainability into the curriculum during FY 2012 include:

- Offering a total of 172 courses identified as “sustainable”, which span 28 departments;
- Launch of the Living and Learning Community in Sustainability in Fall 2011 in the 1940 Residence Hall;
- Integration of sustainability into non-traditional disciplines, such as utilizing climate science data as problem sets for business statistics courses, the Graphic and Interactive Design (GAID) class project to create decorative window film to prevent bird collisions and the installation of a temporary solar charging station by the Film and Media Arts Department to highlight sustainable strategies for remote film production;
- Introduction of community-based learning and service projects into academic courses, including the School of Environmental Design’s Green vs. Grey Urban Ecology and Fox School of Business Marketing for the Sustainable Enterprise;
- Launch of the Department of Community and Regional Planning’s Beijing Forestry University Exchange Program which will focus on China’s stormwater and other sustainability issues; and,
- Hosting of an annual Green by Design Week by the Fox School of Business which emphasizes corporate social responsibility and sustainability.

[Left to Right] Molly Denisevicz, winner of the Bird’s Eye View design competition hosted by Tyler’s GAID program; “Our Waste Will Consume Us” sustainable lifestyle campaign hosted by the Communication and Public Life class; Student from the Living and Learning Community participating in a green scavenger hunt.
Temple has expanded its sustainability research through a number of efforts, including examining regional environmental issues, creating labs and centers devoted to sustainability research and promoting sustainability research through scholarships, grants and awards. FY 2012 highlights in the advancement of sustainable research include:

- Thirty-six faculty currently engaged in funded sustainability research;
- Hosting of a Water Resources Research Exchange that brought together faculty currently engaged or interested in water research;
- Hosting of a Marcellus Shale symposium which provided a multidisciplinary view of Marcellus Shale issues from artists, engineers, and scientists;
- Funding of undergraduate student sustainability related projects through the CARAS (Creative Arts, Research and Scholarship). One FY 2012 project partially funded by the Office of Sustainability included developing an enhanced stormwater drainage system using rain water harvesting; and,
- Continuation of Paley’s Library Prize for Undergraduate Research on Sustainability and the Environment. The winning projects researched the treatment of drinking water using polymeric sorbents and a sustainable and efficient rope pump.

[Left to Right] A grant from the National Science Foundation (NSF) was awarded to Temple’s Water and Environmental Technology (WET) Center. The grant will allow the center to establish a Water Technology Innovation Ecosystem to bring water treatment innovations from the laboratory to the marketplace; Library Prize for Undergraduate Research on Sustainability and the Environment award winners.
OUTREACH

During FY 2012, the Office of Sustainability expanded the breadth of its partnerships to collaborate on a variety of community outreach efforts aimed at engaging students, faculty, staff and neighbors. Outreach activities in FY 2012 include:

- Partnering with the Pennsylvania Horticultural Society, the Office of Community Relations and the School of Environmental Design to host a Tree Tenders Class for the Temple community and neighbors;
- Expanding the working relationship with the Pan African Studies and Community Education Program (PASCEP), including the training of students and faculty on sustainability;
- Coordinating and participating in service projects, such as Fresh Serve, MLK Day Project, tree plantings and the Bartram’s Garden Urban Farm and Food Resource Center;
- Participating in the SustainNext Conference, Chestnut Hill Conference, Sustainability Symposium at the Franklin Institute, Sustainability Roundtable and the City of Philadelphia Greenworks update panel;
- Hosting Campus Sustainability Week in the fall and spring semesters, which included a green fair, lectures, demonstrations and workshops on sustainability topics in each school or college;
- Arranging field trips to sustainability related facilities in the Philadelphia region for the Temple community, including visiting the Waste Management composting facility in Wilmington, Delaware and the MRF Recycling Center in northeast Philadelphia; and,
- Hosting one of the largest educational celebrations of Earth Day each year at the Ambler campus, with annual attendance in 2012 of 12,000.

[Left to Right] Students, faculty and staff joined forces to work on a service project at the Ambler campus for Sustainable Action Day; Interested members of the Temple community had the opportunity to see recycling in action at Waste Management’s Material Recovery Facility (MRF); Students learned about the Pennsylvania Horticultural Society’s initiatives at the Green Fair during Campus Sustainability Day. PHS was one of 60+ organizations that participated.
Faculty, students and staff have received national awards on their sustainability efforts. Recognition of the Temple community’s efforts on sustainability in FY 2012 include:

- Receipt of two Udall scholarships (Yuan Huang and Anne Preston), one Udall honorable mention (Safya O’Rourke) and a Truman scholarship during FY 2012 for student’s environment-related projects. The projects include: community-based urban farming in Philadelphia and sustainable urban agriculture in underserved communities.

- Award of a Fulbright Scholarship to Mary Wolfe, a Temple Alumni and former CARAS recipient; and,
- Winner of “Best in Show” in the Academic Education Category of the 2012 Philadelphia International Flower Show by School of Environmental Design’s Landscape Architecture and Horticulture students.

Temple Honor student, Anne Preston, captures both Truman and Udall scholarship for her work on community-based urban farming in Philadelphia.

[Left to Right] Anne Preston, winner of both Udall and Truman scholarships; Temple’s exhibit, “Aloha ‘āina: A Return to Life with the Land”, which was awarded “Best in Show” in the Academic Education category at the 2012 Philadelphia International Flower Show.