INTRODUCTION AND OVERVIEW

Academics, Campus Sustainability, Collaboration and Culture Change

Harvard University believes universities have a special role and special responsibility in confronting the challenges of climate change and environmental stewardship. Harvard is dedicated to confronting these challenges both through academic research and by translating research into action on campus.

Harvard’s multi-disciplinary research and teaching programs are dedicated to generating knowledge about how discoveries in science, technology and policy analysis can create a sustainable environment for generations to come. For over two decades, hundreds of faculty have been brought together at Harvard’s Center for the Environment (http://www.environment.harvard.edu) to form a diverse intellectual community, creating a place where faculty, researchers and students can come together to discuss, debate and create new ideas for how we will navigate the challenges ahead. Students and faculty are confronting the energy-climate challenge, with programs in research and education across nearly all of Harvard’s Schools and departments.

In addition to the University’s deep history and leadership in academic scholarship, Harvard has for over a decade strived to create replicable models for how large institutions and organizations can engage their entire community around implementing innovative and economically-viable solutions that build a healthier, more sustainable campus. Staff, students and faculty are dedicated to using the campus as a living laboratory by translating environmental research into action on campus and developing a culture of sustainability focused on teamwork, collaboration and sharing best practices.

As part of Harvard’s commitment to environmental leadership, the University has had a formal sustainability office for a decade initially created by a faculty and staff initiative. In 2008, Harvard announced a greenhouse gas reduction goal to reduce emissions 30% by 2016,
including growth, and established the University-wide Office for Sustainability to oversee and expand sustainability initiatives. For more information about the Office for Sustainability and Harvard’s sustainability initiatives visit http://www.green.harvard.edu.

Harvard’s commitment to sustainability is driven by three flagship University-wide commitments, administered through the Office for Sustainability and in partnership with the Schools and central administration:

- **Greenhouse Gas (GHG) Reduction Goal** to reduce GHG emissions 30% below a 2006 baseline by 2016, including growth (adopted in 2008). University-wide GHG emissions have declined by 10.4% from FY06-FY10, including growth. When 3 million square feet of growth is excluded, emissions declined by 20.3% in the same time period. For the first time, every School at Harvard achieved energy reductions in the FY06-FY10 period.

- **Comprehensive Green Building Standards** for capital projects, renovations and building system upgrades that require a smart design process incorporating life cycle costing, integrated design, energy modeling when applicable and other elements that ensure all sustainable design and operations opportunities are vetted and that performance requirements are achieved in a cost-effective manner (adopted 2009, building on the 2007 Green Building Guidelines).

- **Campus-wide Sustainability Principles** that provide a broad vision to guide University operations and planning (adopted in 2004).

Every member of the Harvard community has a role to play in contributing to the University’s sustainability commitment. Harvard’s occupant engagement and behavior change programs encourage collaborative problem solving and provide tools, trainings and resources to hundreds of students and staff at all levels of the University. Employee Green Teams, the Green Office program, student environmental leaders in dorms, and a Student Sustainability Grants program engage the entire Harvard community around taking action to reduce the University’s environmental impact through individual action. Recognition programs, such as the Annual Green Carpet Awards, reward achievements and celebrate milestones reached by individuals and groups across campus.

**On Harvard University**

Founded in 1636, Harvard University is a private research institution with 12 degree-granting Schools in addition to the Radcliffe Institute for Advanced Study. Approximately 2,100 faculty teach a student body made up of 6,700 undergraduates and more than 14,500 graduate and professional students. The University has more than 323,000 alumni living in more than 200 countries around the globe.
Drew Gilpin Faust is the 28th President of Harvard University and the Lincoln Professor of History in Harvard’s Faculty of Arts and Sciences. As president of Harvard, Drew Gilpin Faust has expanded financial aid to improve access to Harvard College for students of all economic backgrounds and advocated for increased federal funding for scientific research. She has broadened the University’s international reach, raised the profile of the arts on campus, embraced sustainability, and promoted collaboration across academic disciplines and administrative units as she guided the University through a period of significant financial challenges.

The oldest corporation in the Western Hemisphere, the Harvard Corporation - known formally as the President and Fellows of Harvard College - is the University's executive board. It is the smaller of Harvard’s two governing boards; the other is the Board of Overseers. Significant matters of educational and institutional policy are also brought before the President and Fellows by the President and Deans. The Board of Overseers is elected by graduates of Harvard and Radcliffe. Through its Standing and Visiting Committees, the Board is informed about educational policies and practices of the University and provides advice to, and approves important actions of, the Corporation. Both the Corporation and Overseers must approve major teaching and administrative appointments. Formed in 1974, Harvard Management Company manages Harvard University’s endowment and related financial assets.

**On this Report**

The Charter Report will be the first of its kind for Harvard University. This Draft Charter Report provides an overview of Harvard’s commitment to sustainability and management approach. The Office for Sustainability is in the process of developing the first University-wide Harvard sustainability report which will be used to determine the more detailed goals, objectives and metrics for the Charter Report. Unless otherwise noted, performance information will be provided in the future for the reporting period of Harvard’s fiscal years (July - June), and for the entire University and its campus infrastructure.

**For questions on this report, please contact:**

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Principle 1 – Sustainability Performance of Buildings on Campus

Principle 1: To demonstrate respect for nature and society, sustainability considerations should be an integral part of planning, construction, renovation, and operation of buildings on campus.

A sustainable campus infrastructure is governed by respect for natural resources and social responsibility, and embraces the principle of a low carbon economy. Concrete goals embodied in individual buildings can include minimizing environmental impacts (such as energy and water consumption or waste), furthering equal access (such as nondiscrimination of the disabled), and optimizing the integration of the built and natural environments. To ensure buildings on campus can meet these goals in the long term, and in a flexible manner, useful processes include participatory planning (integrating end-users such as faculty, staff, and students) and life-cycle costing (taking into account future cost-savings from sustainable construction).

Management Approach to Principle 1 Topics

In 2009, Harvard University adopted Green Building Standards that apply to all capital projects over $100,000, and require LEED Gold for new construction and major renovation projects. These standards build upon the previous Green Building Guidelines, which applied to projects over $5 million and required LEED Silver for new construction and major renovation projects. The new Standards require varying levels of Integrated Design, Life Cycle Costing, Energy Modeling and Greenhouse Gas Estimation, Metering and Sub-Metering, Project Close-Out and Operations & Maintenance Readiness, Water Conservation, Occupant Education and specific environmental performance targets based on the project scope. For greater detail please see http://www.green.harvard.edu/theresource/guidelines/.

Currently, the on-campus Green Building Services team offers 10 hours of free consulting services to explain which standards apply and to help with identifying requirements and available resources. The Office for Sustainability also manages the Green Building Resource, a website for documenting and sharing best practices including Harvard’s Life Cycle Costing tool and LEED case studies for all of Harvard’s LEED projects.

The Office for Sustainability formed a Building Efficiency and Demand Management (BEDM) working group as part of its greenhouse gas reduction implementation planning efforts. This group has recently become permanent and reformed as the Sustainability and Energy Management Council (SEMC), made up of senior representatives of the operations and facilities groups at all of the Schools and units, as well as key personnel in Central Administration. The BEDM and SEMC worked through the Administrative Deans Council and Greenhouse Gas Reduction Executive Committee to successfully issue several standards, including: the Green Building Standards, a policy on energy auditing of existing space (more than 60% has been
completed since FY06); an energy demand response policy; a University-wide temperature policy; draft University-wide Green IT Guidelines; and numerous best practice sharing and lessons learned collection policies. These are combined with School-specific green building operations and maintenance policies at the individual Schools such as green cleaning, organic landscaping and preventative maintenance.

As of May 2011, Harvard has 90 buildings registered with the United States Green Building Council (USGBC), 47 of which are certified, the highest number of certified projects of any higher education institution according to the USGBC. Over 700 energy conservation measures (ECMs) have been implemented or are underway, realizing an estimated FY11 savings of $9.3 million. An additional 1,200 cost-effective ECMs have been identified as part of the capital planning process.

Main initiatives

- Greenhouse Gas Reduction Executive Committee and Sustainability and Energy Management Council.
- Energy Audits will be performed on approximately 100% of the campus.
- Central Energy Plant Upgrades and Co-Generation. Efficiencies include fuel switching and a back pressure turbine that cogenerates 5 MW of electricity.
- Energy Conservation Measures are required in GHG Reduction Plans and Annual Capital Planning submissions.
- University-wide Temperature Policy.
- Small scale renewable energy projects, including solar thermal and photovoltaics. For example, a cutting-edge renewable solar energy and steam heat tunnel recovery system on the freshman dormitory Canaday Hall will provide 60% of the domestic hot water needs of all buildings in Harvard Yard with an excellent return on investment.
- Single-stream recycling, post-consumer composting and waste reduction including freecycle events and donation of unwanted goods to charities. 55% recycling rate in 2010. Per capita trash dropped 22% from 2006 to 2010.
- Green Cleaning used on majority of campus.
Principle 2 – Campus wide Master Planning and Target Setting

Principle 2: To ensure long-term sustainable campus development, campus-wide master planning and target-setting should include environmental and social goals.

Sustainable campus development needs to rely on forward-looking planning processes that consider the campus as a whole, and not just individual buildings. These processes can include comprehensive master planning with goals for impact management (for example, limiting use of land and other natural resources and protecting ecosystems), responsible operation (for example, encouraging environmentally compatible transport modes and efficiently managing urban flows), and social integration (ensuring user diversity, creating indoor and outdoor spaces for social exchange and shared learning, and supporting ease of access to commerce and services). Such integrated planning can profit from including users and neighbors, and can be strengthened by organization-wide target setting (for example greenhouse gas emission goals). Existing low-carbon lifestyles and practices within individual campuses that foster sustainability, such as easy access for pedestrians, grey water recycling and low levels of resource use and waste generation, need to be identified, expanded and disseminated widely.

Management Approach to Principle 2 Topics

Harvard University is committed to developing and maintaining an environment that enhances human health and fosters a sustainable campus. Harvard University has a greenhouse gas reduction goal of 30 percent reduction from Fiscal Year 2006 levels by 2016, including growth. The goal was approved by President Drew Faust and the School Deans based on the recommendations of the Harvard University Task Force on Greenhouse Gas Emissions, comprised of faculty, students, and senior administrators. The Task Force was established by President Faust in the spring of 2008 to recommend a greenhouse gas (GHG) reduction goal for the University.

In 2004, the Harvard Sustainability Principles were adopted University-wide to reflect Harvard’s commitment to integrating sustainability into our operations. We continue to improve our operations with a focus on seamlessly integrating sustainability into our management and financial systems and to learning through advanced research, analysis, and experience gained over time. The Harvard Sustainability Principles are intended to “…guide Harvard’s practices toward sustainability through the management of building design, construction, renovation, procurement, landscape, energy, water, waste, emissions, transportation, human health, and productivity.” The Harvard Sustainability Principles are online here: [http://www.green.harvard.edu/commitments/principles](http://www.green.harvard.edu/commitments/principles).

Comprehensive physical or master planning on Harvard’s Cambridge campus is being undertaken at a district level, recognizing the unique physical and functional attributes of
distinct areas of the campus. Sustainability considerations are incorporated fully into master planning efforts. District level planning exercises implemented after Harvard’s adoption of the Sustainability Principles have utilized a sustainability framework that includes energy and greenhouse gas emissions, water, waste, transportation, landscape and ecology, campus culture and human health, and reuse of existing infrastructure.

Main initiatives

- Greenhouse Gas Reduction Goal, including growth.
- Annual Greenhouse Gas Inventory and Reporting.
- Commuter Choice Transportation Demand Management program, including incentives for public transit and carpooling. 13% of Cambridge/Allston employees drive to work alone (down from 24% in 2000).
- Programs to support bicycle use and expanded pedestrian access.
- Harvard Shuttle Buses run on biodiesel and use recycled rainwater for washing.
- Sourcing of local and seasonal food, and partnerships with local farms and farmers. 25% of Harvard University Hospitality and Dining Services budget dedicated to locally sourced food. 35-70% of produce featured on Harvard University Hospitality and Dining Services menus is grown within 250 miles of dining hall kitchens, depending on season.
- Harvard University Hospitality and Dining Services Food Literacy Project cultivates an understanding of food from the ground up. Education focuses on four integrated areas of food and society: agriculture, nutrition, food preparation and community.
- Harvard Community Garden created by undergraduate students and funded in part by an Office for Sustainability Student Sustainability Grant and support from the Center for Health and the Global Environment at the Harvard Medical School, the Harvard Garden Association, the Food Literacy Project of Harvard University Hospitality and Dining Services, Campus Services, the Graduate School of Design and the Faculty of Arts & Sciences.
- Harvard Divinity School Community Garden also funded in part by an Office for Sustainability Student Sustainability Grant
- 88 acres of campus managed with organic landscaping, reducing water use by 30% and decreasing maintenance costs.
- Common Spaces Initiative.
- Capital Planning and Project Management.
- Office of the Assistant to the President and Chief Diversity Officer.
Principle 3 – Integration of Facilities, Research, and Education

Principle 3: To align the organization’s core mission with sustainable development, facilities, research, and education should be linked to create a “living laboratory” for sustainability.

On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a “living laboratory” for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues. Campus sustainability programs have concrete goals and can bring together campus residents with external partners, such as industry, government, or organized civil society. Beyond exploring a sustainable future in general, such programs can address issues pertinent to research and higher education (such as environmental impacts of research facilities, participatory teaching, or research that transcends disciplines). Institutional commitments (such as a sustainability policy) and dedicated resources (such as a person or team in the administration focused on this task) contribute to success.

Management Approach to Principle 3 Topics

Harvard University believes universities have a special role and special responsibility in confronting the challenges of climate change and sustainability. Every member of the Harvard community has a role to play in contributing to our progress. The University will carry out research and translate the findings of that research into action. Harvard’s commitment to sustainability is guided by three core commitments: Sustainability Principles, a Greenhouse Gas Reduction Goal, and comprehensive Green Building Standards.

The Office for Sustainability works in partnership with the faculty, students and staff at the Schools and units to achieve the University’s sustainability goals. Together the Harvard community is focused on building a culture of environmental responsibility at Harvard. Occupant engagement programs and initiatives work to educate the community, change behavior and inspire individual action among our community. The programs use community-based social marketing techniques such as competition, incentives, benchmarking and rewarding progress and building social norms to bring about lasting change in behaviors.

Harvard students and faculty are confronting the energy-climate challenge, with programs in research and education across nearly all of Harvard’s Schools and departments. Hundreds of faculty are brought together at Harvard’s Center for the Environment to form a diverse intellectual community, creating a place where faculty, researchers and students can come together to discuss, debate and create new ideas for how we will navigate the challenges ahead:
• Working across the university, Harvard scientists are studying the climate system to better predict effects of climate change. They are also advancing the frontiers of materials science that may lead to new energy systems including fuel cells and photovoltaics.

• At the School of Public Health, faculty are working to understand the consequences of our reliance on fossil fuels as well as the emerging threats to human health from climate change.

• Across the university, faculty members are engaged with various efforts to turn scholarship into practice, advising governments and industries about the public policies that will be required to address our challenges.

For more information about the Center visit [http://www.environment.harvard.edu/](http://www.environment.harvard.edu/).

The Office for Sustainability develops partnerships with Faculty to leverage Faculty and student expertise to improve and enhance our campus sustainability initiatives and programs. Faculty serve on the GHG Reduction Goal Executive Committee, serve as Advisors for specific sustainability efforts, and there are several classes where Faculty challenge their students to use Harvard as a living laboratory by finding solutions to real-world environmental issues on campus.

**Main initiatives**

• Harvard Center for the Environment.
• Undergraduate and graduate multi-disciplinary concentrations and courses in environmental sciences and sustainability.
• University-wide Environmental Course Guide.
• Participatory learning opportunities, including student-led weatherization projects.
• Dedicated university-wide Office for Sustainability.
• Student Sustainability Grant Program.
• Sustainability Principles.
• Green Loan Fund, a $12 million revolving loan fund ([www.green.harvard.edu/loan-fund](http://www.green.harvard.edu/loan-fund)), has funded over 200 projects with an average 27% return on investment.
• Green Office Program. As a result of this program, the number of employee green teams grew within 18 months from 17 to 118, engaging over 2,000 employees.
• Employee Green Teams and Student Green Living Programs facilitate peer-to-peer education and outreach campaigns to reduce our environmental footprint.
• Annual Green Cup competitions challenge students to reduce energy and conserve resources in their dorm communities.
• Annual Green Skillet competitions challenge dining hall staff to reduce energy and conserve resources.
• Annual Harvard Green Carpet Awards supports the achievement of Harvard’s sustainability goals – including the Greenhouse Gas/Energy Reduction Goal – and recognizes the many dedicated and hard-working staff, faculty and students involved in campus sustainability initiatives at Harvard. This event was recommended by the University Greenhouse Gas Emissions Task Force as a key component to attain our goal, communicate our success, and honor our campus sustainability champions. The Office for Sustainability hosted the second annual Green Carpet Awards event on April 11, 2011 recognized 55 individuals, 7 team projects and 2 Spengler-Vautin Special Achievement winners out of hundreds of individual and team project nominations representing each School and unit at Harvard.
• Employee and Student Orientations Incorporate Sustainability and the University’s Environmental Goals.
• Operationalizing Sustainability—Campus Services & Partnerships with the Schools.
• Office for Sustainability, in partnership with the Harvard Public Affairs and Communications group, crafts annual Sustainability Communications Plan and Sustainability Communications Toolkits.