

# Harvard Green Campus Initiative: Green Campus Loan Fund



*Dedicated, Revolving Loan Fund for Campus Environmental Projects*

## Summary

Got a good idea and looking for funding? To finance environmentally and economically beneficial projects, Harvard University created the Green Campus Loan Fund, a \$12,000,000 revolving loan fund designed as a financial incentive for green projects. Funds became available in January 2002. Since then, more than \$8.9 million has been committed to 126 projects.

The idea for the fund originated with the Vice President of Facilities who knew of the prior success of a similar fund (from 1993 – 1998) and saw the need for additional financial incentives for building managers. Professional management under the Harvard Green Campus Initiative (HGCI) has brought the concept to full fruition. Starting as a \$3 million fund in 2002, the success of the Harvard Green Campus Initiative led to it being doubled in 2004 to \$6 million and doubled again in 2006 to \$12 million by President Lawrence Summers.

## Money Plus Service Equals Action

Money is not the only barrier to high performance campus operations. Time is an equal impediment. To address this, the Harvard Green Campus Initiative developed a range of building services to assist in identifying, evaluating and project managing both building upgrades and green building design. To date the Harvard Green Campus Initiative has directly assisted with 60% of loan funded projects.

## Project Goals

- Provide finance access to individual across Harvard to encourage good ideas.
- Transcend the limitations of capital and operating budget disconnections.
- Foster innovation and continuous improvement in building operations.
- Facilitate communication among, and between, empowered individuals concerned with reducing the University's environmental impacts
- Support efforts in both existing buildings and new construction.

## Description

The loan fund was designed to (1) motivate staff to engage in actions to minimize the environmental impacts of the University; (2) remove an excuse or impediment (e.g., lack of funding) for beneficial projects with longer-term paybacks; and (3) facilitate the peer-to-peer education opportunities that compliment many of the innovative projects financed through the fund.

## Campus Profile

Harvard University  
Cambridge, MA  
FT Undergrads: 6,700  
FT Grad Students: 11,900  
FT Faculty/Staff: 10,000+  
GSF of Buildings: ~20 million  
Annual Operating Budget: ~1.8 Billion

## Green Activities

The Harvard Green Campus Initiative (HGCI) is a university-wide collaborative effort between faculty, administrators, staff and students with the goal of reducing the environmental impacts of campus operations and promoting environmental sustainability. HGCI is one of many campus organizations, departments and groups contributing to the greening of Harvard University. The Environmental Business Council of New England has recognized the University and its Environmental, Health and Safety Department for its leadership.

Projects are approved through a peer review process. Savings and repayment schedules are determined via engineering calculations, using agreed assumptions and methodologies.

## Steps Taken

1. In 1999, an interfaculty advisory committee was established by the Harvard University Committee on the Environment to address the challenge of environmental sustainability in campus operations. It was chaired by faculty at the School of Public Health and the vice-president for Facilities and Environmental Services.
2. In 2000, Leith Sharp founded the Harvard Green Campus Initiative (HGCI) and became its director with direct responsibility for implementing the Green Campus Loan Fund.
3. In 2002, the offices of the President and the Provost established the Green Campus Loan Fund (GCLF) to finance environmentally and economically beneficial projects throughout the University based on the recommendation of the HGCI and the Harvard Green Campus Interfaculty Advisory Committee. The first \$3 million was allocated.
4. HGCI hired a Loan Fund Coordinator, and began to partner with various University Departments and faculties.
5. Policies, procedures and guidance for the administration of the fund were developed.
6. Project eligibility requirements were developed.
7. Tools were developed to assist project teams, such as submittal forms and a clear project evaluation methodology.
8. The GCLF was promoted and opportunities were sought for investments in sustainability projects with ROIs of less than five years (e.g., one of the initial evaluation criteria).
9. The Loan Fund Advisory Group was established and expanded as a peer to peer approvals entity. Members included all key facility directors from across Harvard University. The Advisory Group has evolved into a shared learning exchange as well as an approval body.
10. The HGCI developed new high performance building services to assist in the identification and implementation of Loan Funded projects across the University. Currently The HGCI employs 5 full time staff to provide staff support in identifying and managing high performance building design and operations at Harvard University. These staff are supported on a fee for service basis as all projects produce significant savings.
11. Modifications to the program and policies have continued to be made, as appropriate. For example, the policy on energy efficiency projects was modified to allow any rebate money to be used to pay down a loan, and on-site renewable projects qualify for funding, regardless of their ROI.
12. In 2005, Harvard President Lawrence Summers allocated an additional \$3million to the HGCI. These new funds were made available to new construction projects. New criteria were agreed upon including a new maximum payback period of 10 years. Also the New Construction fund is available to fund the cost different between a conventional technology/design and a high performing technology/design. In this way the fund can be stretched to support a large number of high performance technologies/designs that would otherwise be lost during the value engineering stage of the design process. In 2006, due to the enormous success of the Harvard Green

Campus Initiative's work in identifying, project managing and financing projects across Harvard University, the Loan Fund was once again doubled to \$12 million.

## Participants

The GCLF is administered by the HGCI. The HGCI chairs a Loan Fund Advisory Committee which includes members with expertise in, and responsibility for, engineering and utilities, environmental, health and safety, operations, finance and administration, and maintenance. Projects have taken place, or have been approved, at the following Schools and Departments, as of March, 2007.

Faculty of Arts and Sciences	32
Harvard Medical School	17
Harvard Business School	16
Harvard Real Estate Services	15
University Dining Services	11
Harvard School of Public Health	10
Kennedy School of Government	5
University Operations Services	5
Radcliffe	4
Harvard Athletics	3
Graduate School of Education	2
University Art Museums	2
Harvard Forest	1
Divinity School	1
Division of Continuing Education	1
University Libraries	1

Projects rely on a mix of faculty, student, interns, staff, consultants and vendors. Building managers are key allies.

## Current Performance and Benefits (as of March, 2007)

- o \$2,852,226 from saved energy costs and 27,417 metric tons of eCO<sub>2</sub> reduced.
- o \$160,841 from saved water costs
- o \$114,488 from avoided operations and maintenance (O & M) costs
- o \$25,296 from avoided waste management and disposal costs.

## Project Examples

- o The Harvard Business School upgraded its irrigation controls and management to the Rainbird Maxicom II system, a computerized irrigation management system, that uses on-site weather and soil condition monitoring stations to determine watering needs.
- o The Faculty of Arts and Sciences upgraded three Air Handler unit return fans with new premium efficiency motors, variable frequency drives, carbon dioxide sensors, humidity sensors and enthalpy economizer controls.
- o The Faculty of Arts and Sciences, the Medical School, the School of Public Health, the Business School, and Harvard Real Estate Services each invested in behavioral change programs that educate building occupants on resource conservation and energy efficiency.

- Renovations to a large kitchen and service area in Dining Services included a shift from electric kettles to steam kettles, including a new TroughVeyor dishwashing system with water capture and recovery.
- Harvard Real Estate Services upgraded inefficient “T12” linear fluorescent lighting with “super T8” linear fluorescents.

## Lessons Learned

- Work with department financial managers to understand how and if they can use utility savings as a mechanism for loan repayment from an administrative/accounting perspective.
- Address the time barrier. Make available competent staff to address the excuse “We don’t know what opportunities exist and we don’t have time to do anything more.”
- Manage the projects with professional staff.
- Facilitate peer-to-peer interaction and education between all users of the Loan Fund in order to catalyze ongoing learning and continued use.
- Make sure the program is administratively easy to use, and ensure that the program is well known at the faculty, staff and student levels.
- Early engagement and pre-screening is a critical component of success. Initiate conversations with interested parties early in the process because it takes time to lead a good project idea to a complete and successful submittal.
- Document the projects so that past performance and lessons learned can be used by others around the campus and beyond.
- Fund a mix of projects. One of the larger projects—computer energy management – is completely a behavioral change project and is not tied to building or physical infrastructure issues.

## For Further Information and Resources

See <http://www.greencampus.harvard.edu/gclf/>

### Commentary

A dedicated revolving loan fund can be a mechanism for simultaneously promoting economic and environmental sustainability. Sometimes what is good for the environmental is also good for the bottom line. For many institutions, \$12 million is a significant amount of money to contribute to any fund – but, in this case, such a designation of financing promotes multiple agendas – facility and campus infrastructure improvements, environmental accountability and wise financial investment. Investing in projects with relatively fast paybacks (i.e., less than five years) that generate ongoing utility savings is not only a great way to ensure a 35+% plus Return on Investment – but also a wise way to hedge against anticipated increases in future utilities.

It is essential to recognize that money is not the only barrier operating on our campuses. Time is also an equal limiting factor. When you institute a Loan Fund you need to also fund human resources to assist in overcoming time barriers in relation to project identification and implementation. The HGCI has

establishes a business model that allows for campus staff to pay the HGCI to find, assess and implement projects on a fee for services basis.

Consider starting a fund with an amount that makes sense for your institution. Try to make the fund large enough to support projects that will result in meaningful financial savings. If the program advances all the agendas described above, you will be in a strong position to argue for additional funding from the administration or from potential donors.

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