

Sustainability Assessment of Vassar College: **Detailed Findings**

Final Report Document 2 of 2

based on Good Company's
Sustainable Pathways Toolkit

Report prepared by:



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sustainable: community | economy | environment

Contents

I. DOCUMENT ANATOMY	3
II. ABOUT THE ASSESSMENT	4
III. INDICATOR-BY-INDICATOR ASSESSMENT RESULTS	6
Road map to reading the indicator results	6
Indicators 1-12 (Environment)	7
Indicators 13-15 (Human Resources)	19
Indicators 17-20 (Community and Core Function)	22
Supplementary Indicators	26
IV. ADDITIONAL DOCUMENT INFORMATION	36
Normalization Guide for Energy and Water Usage	36
Glossary	37
References (Vassar College documents)	39
V. CAMPUS SUSTAINABILITY PERFORMANCE: METHODOLOGY	40

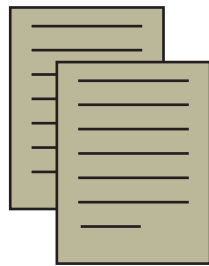
Note: This document, *Sustainability Assessment of Vassar College: Detailed Findings*, is the second of two documents that together comprise Good Company's final report. The Document Anatomy on the next page summarizes the elements of both documents.

I. Document Anatomy

Good Company's full report consists of two main documents: Analysis and Detailed Findings. Use this page and the table of contents to find specific items.

Analysis

Provides the core insights from the sustainability assessment. (The document stands alone, so readers need not read the Technical Appendix in order to benefit from the Overview of Findings.) (28 pages)



Purpose and Executive Summary

Description of what "sustainability" means and why Vassar should care. Snapshot of Good Company's recommendations for Vassar College.

Observations

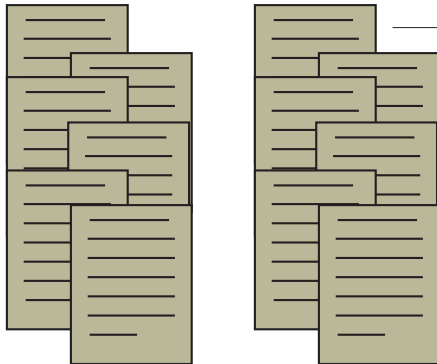
The Observations are a few key features of Vassar that readers should have in mind from the outset while reading the report.

Strengths

The Strengths describe several prominent positive features of the College that are not described elsewhere (such as in the Indicators or in the Recommendations).

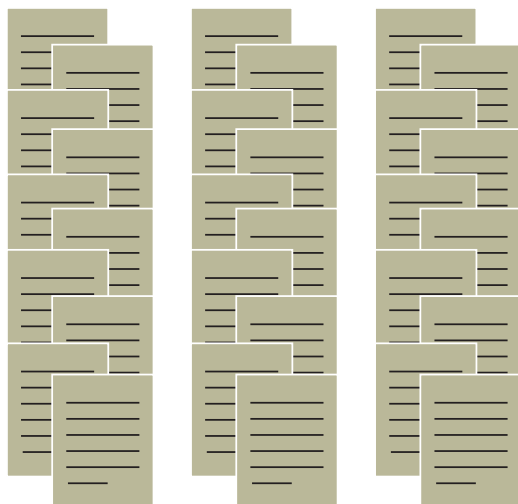
Recommendations

The ten Recommendations are Good Company's concrete advice for action.



Detailed Findings

Describes each of Good Company's 30 indicators in detail, reporting wherever possible Vassar's performance in relation to two other institutions that Good Company has assessed. (41 pages)



Indicator-by-Indicator Results

The section includes a one-page diagram that aids readers in taking on all of the detail in the indicators. It describes each of the 20 Core Indicators and 10 Supplemental Indicators in detail.

Our Methodology

Briefly explains how we approach campus sustainability, how we perceive of "sustainability" as a concept, and how our indicators have been selected.

Glossary

A short guide to terms used in the report.



II. About the Assessment

Boundary of Study

For the purposes of the assessment, we considered “Vassar College” to be the nearly one thousand acres covered by the campus proper, the athletic fields, and the Vassar farm (including its forested areas). This does not include the golf course. We considered all campus operations — academics, landscape, buildings, and other functions such as those housed in the Alumnae House. We also considered all faculty, students and staff as members of the campus community.

Benchmarking

A central goal of the *Toolkit*-based assessment is benchmarking. However, Vassar College is only our third client (the University of Oregon and Reed College were the first two). Vassar has gone where few schools have gone before, so the current report has only some of the benchmarking elements that will be present in the future. As our work continues and we amass comparison data, we will provide benchmarking reports to Vassar (via the Sustainability Committee).

We also aim to include Vassar in future waves of our assessment; it is our expectation and goal that our evaluation will become a regular benchmarking exercise for many universities and colleges. This regular participation will provide valuable comparison data for all institutions.

Accuracy

Good Company gathered the information contained herein from almost 30 hours of interviews with numerous individuals (thanked below) between September 2002 and January 2003; in the case of aggregate annual data, we used the 2001-2002 academic year, unless otherwise noted. We take responsibility for all errors in understanding the data provided to us, and all errors in transcription or calculation. We do not, however, certify the authenticity of the data provided to us in its raw form. This assessment was voluntary on the part of Vassar College, so any inaccurate information, provided to us deliberately or in error, simply compromises the usefulness of the report. We ask all readers to contact us with corrections or perspectives. Any errors in judgment or misunderstanding of information provided in interviews are the responsibility of Good Company.

Acknowledgements

Good Company would like to extend its gratitude to the Vassar College Sustainability Committee, who initiated this report, and specifically to Jeff Walker who was our primary contact, and who provided the ambition and motivation to make the assessment happen. We also thank President Fergusson for providing approval and funding for this project.

Also, we offer thanks to the many individuals at Vassar who cooperated with us as we conducted the assessment: Len Angelli, Alex Averin, Stuart Belli, Michael Blakes, George Brengel, Dennis Cody, John Collier, Steve Dahnert, Susan DeKrey, Karen Ehlers, Betsy Eismeier, Harvey Flad, Nancy Garrison, Carl Gottschalk, Christina Hammond, Judith Hanna, Bruce Harms, Jeff Horst, Maureen King, Rachel Kitzinger, Melissa Lape, George Laws, Don Marsala, Patrick Miller, Karen Minturn, Danielle Knabjian Molina, Ken Oldehoff, Tanhena Pacheco, H. Daniel Peck, Edward Pittman, Leslie Power, Art Punsoni, Registrar’s Office, Sonya Reindhardt, Barbara Roe, Harry Roseman, Michael Spath, Tracy Smith, Peter Stillman, Cynthia VanTassell, and Joe Zeppetelli.

Our apologies to anyone we have failed to mention.

Complete List of Indicators

Core Indicators	
Environment	
1.	Campus energy intensity
2.	Campus water intensity
3.	Energy and water use monitoring and feedback
4.	Recycling infrastructure
5.	Recycling rate (share of total waste stream)
6.	Hazardous materials
7.	Computer hardware purchasing and disposal
8.	True-cost print charging
9.	Paper use and purchasing
10.	Custodial chemical use
11.	Low-impact grounds maintenance (chemical and water use)
12.	Transportation infrastructure and incentives
Health and safety	
13.	Ergonomic safety
14.	Indoor air quality (IAQ)
15.	Core benefits for employees
Campus community and beyond	
17.	Curriculum for environmental and/or sustainability studies
18.	Governance and leadership for sustainability or environmental performance
19.	Purchasing tools and strategies
20.	Planning and policy for campus construction and development

Good Company has eliminated Indicator 16 from the Vassar College assessment and this report.

Supplementary Indicators	
S-1.	Purchasing policy for wood products
S-2.	Renewable energy purchasing
S-3.	Green house gas (GHG) inventory
S-4.	Low VOC paints and finishes
S-5.	Extended benefits and employee assistance programs (EAPs)
S-6.	"Green chemistry" curriculum
S-7.	Stakeholder involvement in new construction
S-8.	Labor policy for campus licensing
S-9.	Investment policy for endowment funds
S-10.	Food procurement and disposal by campus units

The detailed results for the Supplementary Indicators begins on page 26.

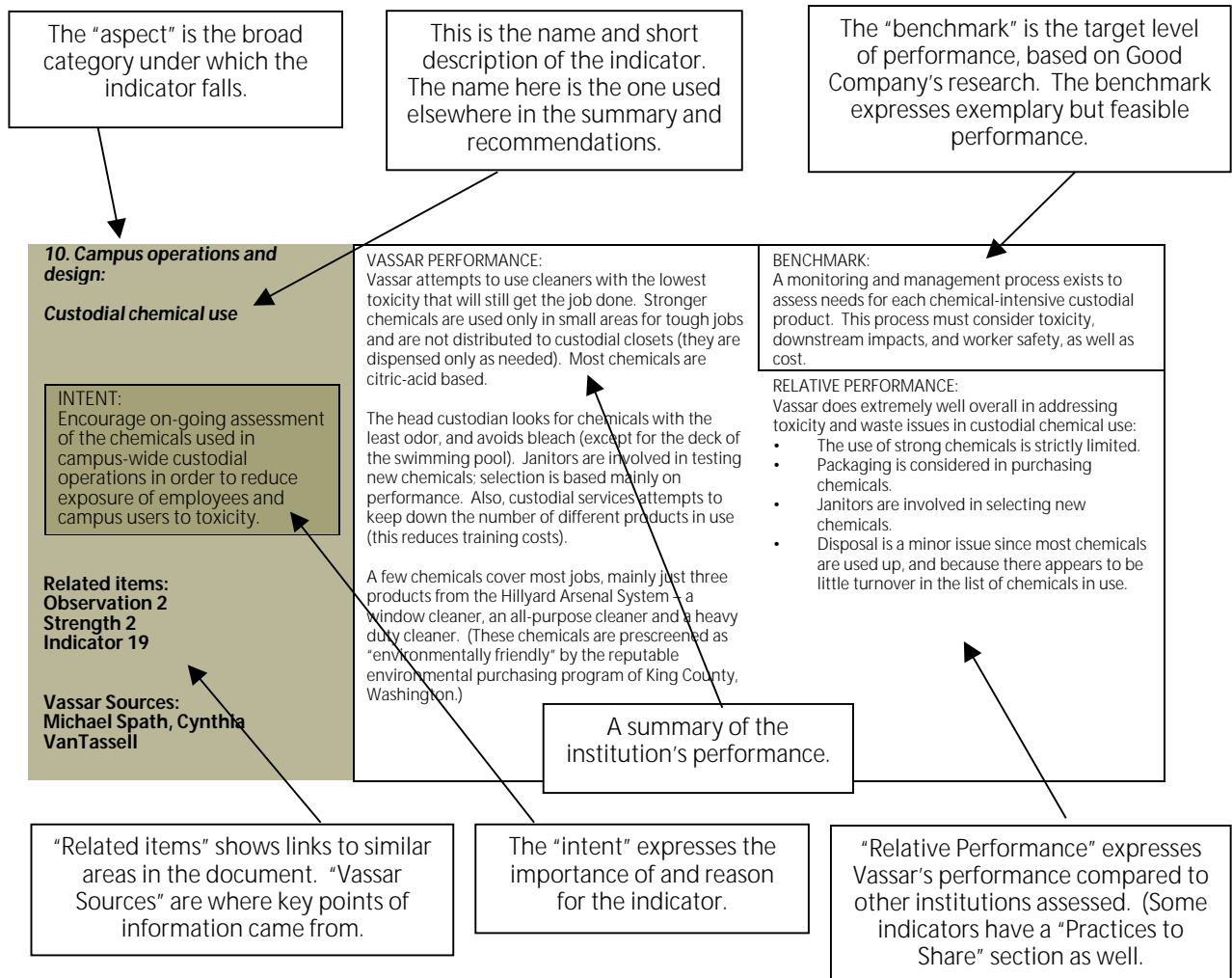
III. Indicator-by-Indicator Assessment Results

The following pages provide an indicator-by-indicator description of the results of the assessment of Vassar College, including the Core Indicators and the Supplementary Indicators.

Indicators 1-12 address environmental concerns; indicators 13-15 address human resources; and indicators 17-20 address community and core function. There are also ten (10) miscellaneous Supplementary Indicators.

Road map to reading the indicator results

The chart below describes the format of the indicator-by-indicator assessment results. Those readers who are unfamiliar with the *Sustainable Pathways Toolkit* will want to take a moment to familiarize themselves with the flow of information in the presentation of each indicator.





Indicators 1-12 (Environment)

1. Resource use:

Campus energy intensity (scaled)

INTENT:
Encourage energy efficiency.

Related items:
Recommendations 2 and 9
Indicators 3 and 18

Vassar Sources:
Central Hudson Gas and Electric,
Karen Ehlers, Judith Hanna,
Melissa Lape, Patrick Miller, Karen
Minturn, Danielle Knabjian
Molina, Tanhena Pacheco,
Registrar's Office, Barbara Roe,
Vassar College Briefing Book
(Aramark), Vassar College Energy
Management Reports, FRM
Facilities Report 1993

VASSAR PERFORMANCE:

The numbers below capture Vassar's energy use per Scaled Campus User (SCU), Good Company's normalization technique for benchmarking purposes. See the Normalization Guide on p. 36 for a detailed description of the methodology.

Since Vassar is one of the first institutions to undergo Good Company's assessment, there are few data points with which to compare the College. We offer the comparisons below with Reed College because it is comparable in size and scope.

A few important points to note with respect to energy use:

- There is one main meter for electricity for the bulk of campus. This proves a problem for close monitoring of individual buildings.
- There have been several energy projects and practices on campus over the years that have brought Vassar's energy use in line with conventional expectations:
 - In 1973 and again in 1983 the antiquated steam system was reworked. This reaped significant financial and environmental savings.
 - A comprehensive energy management program, conducted with Aramark and its predecessor, has reduced energy use at the College by 40% per square foot since 1977.
 - Energy efficient relamping has been done throughout most of the campus, and continues as buildings are renovated and updated.
 - Several improvements to the campus' central energy monitoring system, which now allows for centralized control of heating and cooling.
 - Dormitory temperatures are set at 50° over breaks.
 - A central chilled water plant was constructed to improve energy efficiency
 - A switch to low sulfur oil reduced emissions
 - A co-generation system that captures waste heat from the central boiler and turns it into electricity accounted for 3.4% of total electricity used in 2001-2002 (and almost 1% of total energy used).
 - Geothermal system in the THs uses the ground/air temperature differential to save on heating costs.

BENCHMARK:

Total energy use for heating, cooling, and electricity does not exceed 110-150 MMBtu per Scaled Campus User (SCU) per year.

RELATIVE PERFORMANCE:

Using two sets of weights we found a range of Scaled Campus Users (SCU) with data from the 2001-2002 academic year (see the Normalization Guide on p. 36 for a description of the weighting methodology):

Campus user group	Calculation A weights	Calculation B weights
Residents	1.0	1.0
Enrolled students	0.15	0.25
Employees	0.25	0.35
Number of Scaled Campus Users (SCU) 2001-2002	2,050.1	2,339.2

Calculation B assumes more energy use by daytime campus users, especially employees, relative to resident students. These two sets of weights produce a range of energy use per SCU:

	Vassar College	Reed College
Total MMBtus used in academic year	282,634	96,461
	MMBtus per SCU (Benchmark: 110-150)	
Calculation A	137.9	131.6
Calculation B	120.8	112.1

These two numbers put Vassar in the neighborhood of the estimate based on Good Company's research of other campuses. As Good Company conducts our assessment on more campuses we will have more precise comparison data.



2. Resource use:

Campus water intensity (scaled)

INTENT:
Encourage efficient water use.

Related items:
Recommendations 2 and 9
Indicators 3, 11 and 18

Vassar Sources:
George Brengel, Jeff Horst,
Patrick Miller, Guidelines for
Designs at Vassar College, Vassar
College Briefing Book (Aramark),
Vassar College Water
Management Reports, FRM
Facilities Report 1993

VASSAR PERFORMANCE:

The numbers below capture Vassar's water use per scaled campus user (SCU), Good Company's normalization technique for benchmarking purposes. See the Normalization Guide on p. 36 for a detailed description of the methodology.

Since Vassar is one of the first institutions to undergo Good Company's assessment, there are few data points with which to compare the College. We again offer the comparisons below with Reed College because it is comparable in size and scope.

There are a few important points to note with respect to water use.

- There have been some attempts by Buildings and Grounds to install high-efficiency fixtures. Six or seven years ago, a wave of installations of low-flow showerheads (a common water-saving fixture in most of the country) received significant backlash by resident students, and it has not been tried on a large scale since.
- There has been some experimentation with different kinds of 1.8 gpf toilets (another standard water-saving fixture around the country).
- There has been no similar work done with sink faucets.
- Good Company uncovered no water-use guidelines for the washers and dryers purchased by Residential Life for the dorms.
- Good Company found no source for overview information of the anticipated water-use performance of the Jewett remodel.
- There is no systematic monitoring for leaks in underground pipes, in part because of a lack of extensive metering for individual buildings and/or areas of campus.
- The College has no large-scale on-campus systems for water recovery (e.g., graywater) or water treatment.

Note: The town of Poughkeepsie, the municipal water supplier, bills for sewer charges for water used for irrigation. B&G is pursuing a change in this policy which could result in a significant cost savings.

BENCHMARK:

Water use does not exceed 90-120 gallons per Scaled Campus User (SCU) per day for residential and non-athletic campus facilities.

Ensure the implementation of water-saving devices and techniques throughout campus, especially where easiest and most cost-effective.

RELATIVE PERFORMANCE:

The following calculations use the same set of weights as in the previous indicator (the time period for the Vassar water data is the 2001-2002 academic year):

	Vassar College	Reed College
Total gallons used in academic year	70,356,955	29,667,872
	Gallons per day per SCU (Benchmark: 90-120)	
Calculation A	94.0	110.9
Calculation B	82.4	94.4

The weights for Calculation B assume more water use by daytime campus users, especially employees, relative to resident students. See Normalization Guide for details (p. 52).

These results pose the same issues as in the previous indicator – more benchmarking data are required before we can draw specific conclusions about the campus' overall performance.

For information on water used for irrigation, see Indicator 11.

3. Resource use:

Energy and water use monitoring and feedback

INTENT:

Ensure that the institution collects and reports information on its own energy and water use practices in ways that facilitate action.

Related items:

**Observation 4
Recommendations 2 and 9
Indicators 1, 2 and 18**

Vassar Sources:

George Brengel, Jeff Horst, Patrick Miller, Barbara Roe, Vassar College Briefing Book (Aramark), FRM Facilities Report 1993

VASSAR PERFORMANCE:

Buildings and Grounds regularly collects energy and water use information, which is processed into reports with considerable data and analysis. These reports provide such information as month-to-month comparisons of energy and water use and costs for each. Most of the campus is metered, but not to a level of aggregation that would provide all of the potentially useful data.

It is unclear how much the available information is used, beyond spotting serious anomalies (such as energy use spikes in a given metered area). Specifically, there is no structure for summarizing this wealth of information and bringing it to campus users who might thereby become more aware of their impacts and thus more likely to make behavioral changes, when it is appropriate.

The campus needs more separately metered areas. Currently only 11% of the buildings are separately metered for electricity and 19% for gas.

Campus energy management efforts have recently become more systematized. A seven-year project with Johnson Controls tested a system that monitors energy use on campus through a central control unit at the Physical Plant office. The system resulted in dramatic savings and paid for itself over the period of the study.

In some cases, specifically water and natural gas, Physical Plant has data for relatively aggregated units (small groups of buildings, or separately managed areas of campus), which can make monitoring more difficult.

BENCHMARK:

This process indicator has two main components:

- The campus has complete and clear records of its energy and water use, and there exists a reporting process that collects all energy and water use data and costs on a regular and on-going basis.
- The large majority (80%) of campus building space is metered for electricity use and water use.

Additional components:

- Water use for irrigation (for maintained grounds and athletic facilities) is tracked separately from other water use.
- The campus facilities department provides information to campus users about energy and water use in ways that raise awareness and facilitate action.

RELATIVE PERFORMANCE:

Vassar's mechanisms for collecting information on energy and water use appear somewhat less comprehensive and effective than at the two other institutions that Good Company has studied. However, no other institution has done a good job of systematically using and communicating such information to campus decision makers and users.

PRACTICES TO SHARE:

It is possible to get the word out about energy and water use in a variety of ways:

- Competitions between dormitories (with real stakes)
- Information and displays posted in high-traffic areas of buildings
- Real-time meters or kiosks that display usage and provide basic interpretive information on associated impacts

4. Solid waste and hazardous materials:

Recycling infrastructure

INTENT:
Provide the physical and organizational infrastructure to make recycling convenient for campus users.

Related items:
Observations 3 and 4
Strength 3
Recommendations 1, 2, 3 and 8
Indicator 5

Vassar Sources:
Len Angelli, Dennis Cody, Art Punsoni, Michael Spath, Cynthia VanTassell

VASSAR PERFORMANCE:
Vassar has widespread recycling infrastructure for most recyclables. However, the infrastructure is not consistent in appearance and placement. Fortunately, the infrastructure is growing in extent, improving in quality, and rising in cross-campus uniformity. Still there is no systematic approach to the placement of bins or to the joint placement of bins for recycling and trash. There is also no map of campus recycling infrastructure.

Custodial staff are beginning to use the new recycling bins throughout campus. Custodial has received some bins, and placement is complete at four dorms and continuing. Staff hope to have all the dorms done by the beginning of the new year. In addition to the dorms, a few academic buildings have scattered new bins for now.

Despite the widespread infrastructure, contamination of recycling bins with trash (and vice versa) remains a problem. Custodial staff estimate that this behavior has led to a loss of up to half of the total volume of potential recyclables. New, uniform and widespread bins will improve recycling performance, but this still remains an important area for education of campus users.

There is a "Surplus Sale" coordinated 1-2 times per year that allows for the resale of computers. The operation has lost money in past years, but with input from the Summer Swapper crew, those losses shouldn't be as significant. They have also put computers into a senior citizens' home. The Purchasing Office is creating a surplus property management website for Vassar people to exchange office furniture. Awareness-raising could be a project for Tech Tuesdays. The website is not yet running (see <http://maccgi.vassar.edu/surplus/surplusshop.taf>).

Similarly, there is a "Summer Swapper" at which graduating seniors can sell or donate dorm furnishings. Many items are donated to community organizations or stored and then sold to next year's incoming students. Proceeds from sales partially cover costs (mostly on tents and trucks, but also a barbeque and associated waste removal by Buildings & Grounds). Additional donations from the community offset the costs. It is expected that soon revenues will totally offset the costs.

Note: For information on composting see Indicator S-10.

BENCHMARK:
(1) *Provide widespread recycling infrastructure* for all major recyclables (metals, glass, plastic, cardboard, newsprint, office paper and mixed paper). Locations that need recycling infrastructure:

- Campus buildings with 5,000+ square feet of floor space
- Computer labs with printing facilities
- Dormitories and residence halls
- Outdoor areas of high use (especially food courts)

(2) *Provide exchange or reuse programs* for such lower-volume products and consumer durables as:

- Office supplies, furniture and equipment, and other surplus property
- Computers and electronic equipment
- Laboratory supplies and chemicals

RELATIVE PERFORMANCE:
In terms of recycling systems and infrastructure, Vassar appears to need a more systematic approach. Shortcomings in this area may be a matter of not having sufficient staff to carry out all of the necessary functions.

In terms of surplus property, Vassar is acting aggressively and effectively on several fronts. In these areas, it is a model.

PRACTICES TO SHARE:
Educate incoming students, faculty and staff to recycling practices at Vassar through orientations. Ongoing education such as information on the campus web site, brochures and other materials can serve as refreshers for current campus constituents. The Computing and Information Services Department's Tech Tuesday provides a replicable, on-going learning experience. In addition, high-profile recycling at a campus event (that is not explicitly related to recycling or the environment) can create a teachable recycling moment. Such measures can send message that "this is the way we do things at Vassar."

Consistent recycling bins and areas are other key elements in making recycling easy and in inducing simple behavior changes. Another effective technique is the use of simple but informative signs or prompts at the point of consumption and/or disposal.



5. Solid waste and hazardous materials:

Recycling rate

INTENT:
Provide a concrete benchmark (and over time, a rising bar) for campus recycling and waste management efforts.

Related items:
Observations 3 and 4
Strength 3
Recommendations 1, 2, 3 and 8
Indicator 4

Vassar Sources:
Cynthia VanTassell and her report titled "Vassar College Waste and Recycling Disposal Report For 2002"

VASSAR PERFORMANCE:
Vassar recycled approximately 14% of its waste stream in 2001-2002. This rate is based on 1,910 tons of waste and 312 tons of recycling. The rate increases to 16.3% if construction and demolition (C&D) waste (302 tons in 2001-2002) is removed. The average annual recycling rate over the past three years (ending in July 2002) is in the range of 7.0-9.4% (again, depending on whether C&D waste is included).

Note: Construction and renovation contractors are responsible for the disposal of wastes related to their projects, so wastes generated by the renovation of Jewett House or the construction of the Center for Drama and Film are not included in any of the recycling rate calculations.

Inside of this aggregate picture, there are several important points to make:

- However you slice it, Vassar's recycling rate is low. (The national recycling rate is around 28%, and New York State's rate is above 40%.)
- In 2001-2002, the recycling rate jumped significantly. This was apparently due to a more than doubling of two segments of the waste stream: mixed paper and co-mingled (glass, cans and plastic).
- There is a general upward trend in the amount of trash in the waste stream as a whole. This is important to highlight, since waste *reduction* should be considered as important as recycling.
- Construction waste has risen in the past year (75-80% above the two years before), but little is known about what Royal Carting (the waste hauler) does with it, aside from some wood chipping for use as mulch.
- The waste stream from cleanouts and breaks, though small, also fell significantly in 2001-2002 – likely due to the surplus strategies mentioned in Indicator 4 above. This change alone took around 1% off Vassar's waste stream going to landfills.

BENCHMARK:
The total recycling rate equals 40% (as a share of the total campus solid waste stream, as measured by weight or volume).

Note: Good Company calculates recycling rates based on available data, which differ widely from campus to campus. When possible, we use the Campus Refuse Profile of the Campus and University Recycling Council (CURC). This methodology is available at http://www.uos.harvard.edu/information/dep_fac_sol_cur.shtml.

RELATIVE PERFORMANCE:
This aggregate recycling rate is the lowest in Good Company's small pool of data. The table below shows a comparison of Vassar's performance with another similar institution that Good Company has assessed.

	Vassar College	Reed College
Recycling rate	14.0%	46.1%
Waste per SCU		
• Garbage (tons)	0.932	0.969
• Recycling (tons)	0.152	0.828

Note that Vassar differs significantly in its recycling rate, but not in its total waste generation. This is encouraging in that it suggests the potential for significant improvements.

PRACTICES TO SHARE:
To deal with its waste and recycling issues, Vassar needs to address the behavior of campus users. This will include providing education, building awareness, and facilitating better choices.

6. Solid waste and hazardous materials:

Hazardous materials

INTENT:
Encourage campuses to meet often-neglected federal guidelines for the handling and disposal of hazardous wastes generated by campus operations.

Related items:
Observation 5
Recommendation 6
Indicator 7

Vassar Sources:
Betsy Eismeier, Harry Roseman,
Michael Spath

VASSAR PERFORMANCE:

The College has made major changes in this area by creating an Environmental Health and Safety position a year and a half ago and addressing a series of important issues. There are now procedures in place to deal with a wide range of regularly generated hazardous materials, including:

- Universal waste (batteries, fluorescent lamps and mercury devices such as thermostats)
- Laboratory chemicals
- Art supplies (see below)
- Paints and finishes
- Pesticides

Vassar has put in place several systems or processes for reducing or dealing more effectively with the stream of hazardous or universal wastes:

- Chemical Inventory Management System (full inventory of campus chemicals; the system promotes the sharing of chemicals among the College's various labs and departments)
- Just-in-time purchasing of chemicals (to reduce inventory costs and risks)
- Pre-purchase screening (to reduce unnecessary demand)

In addition to these on-going systems, EH&S has conducted two chemical culls in the past year (sweeps through the College's inventories to harvest and dispose of unnecessary stores).

As a significant source of hazardous materials, the Art Department and its classroom studios, has been a major place for change recently. In contrast to a few years ago, there are now separate receptacles for solvents, water waste (e.g., containing acrylic paint), and solid waste (e.g., rags and jars). Eventually, EH&S hopes to have complete trainings and signage to reinforce safe practices.

BENCHMARK:

The university has an official policy for hazardous materials handling and disposal, as well as comprehensive records of disposal (that are routinely provided by companies that provide such disposal services). Institutions should also address Universal Waste (UW) (see note below) through education and with accessible recycling programs.

RELATIVE PERFORMANCE:

Vassar has made quick strides in this area since the recent inception of its EH&S Department. The new staff member is already addressing all of the main areas of EH&S responsibility. In particular the Art Department and Science Departments have undergone rapid change to rectify long-standing shortcomings.

PRACTICES TO SHARE:

For an institution of Vassar's size, a single EH&S staff person appears insufficient (see Recommendation 6).



7. Solid waste and hazardous materials:

Computer hardware purchasing and disposal

INTENT:
Promote an ethic of – and create the infrastructure for – addressing the life-cycle impacts of computer hardware, an important segment of durable purchases and major source of hazardous waste.

Related items:
Observation 3
Strength 3
Recommendation 3
Indicators 6 and 19

Vassar Sources:
Art Punsoni

VASSAR PERFORMANCE:
Sustainability concerns do not figure prominently in the Purchasing Office's criteria for computer purchasing, although energy efficiency is on the list (see below). Purchasing criteria do not address ultimate disposal concerns, but there is a strong and growing program for diverting obsolete computer hardware from the waste stream.

Given the growth of computer and electronics as a source of hazardous materials, this represents an important impact. To address this issue, the Purchasing Office has overseen two waves of a "recovery program" to organize disposal of obsolete or broken (i.e., not reusable, as in the Surplus Sale) with both the current and previous waste haulers. In 2001, this program diverted 18,984 pounds (9,492 tons) of monitors and broken equipment from landfills. The 2002 program sent 250-300 computers and monitors, numerous printers, and additional electronic equipment such as scanners and copiers to be recycled or recovered.

The College has purchased 400-500 new computers per year over the past two years. Using a weighted average of desktops and laptops (assuming around 45 pounds each), Vassar bought about 20,000 pounds of hardware in both 2000 and 2001. Thus, the disposal program is nearly keeping up with the computers accumulated by Vassar as a college, but it is probably not in balance with the additional hardware disposal needs of students.

Purchasing criteria for computers are (in order): technology; support; response; value; energy efficiency; asset recovery; and minimizing modifications from previous model. There are two possible improvements in the list. First, "value" and "energy efficiency" should be considered in tandem, since a full, life-cycle view of value includes both initial costs and costs incurred throughout the product's useful life. A solid definition of life-cycle value can influence decisions and save money. Second, disposal issues are not considered at the time of purchase, even though this is when the buyer is implicitly assuming responsibility for future disposal.

BENCHMARK:
The university has policies and processes for (1) purchasing energy-efficient information technology hardware and (2) providing disposal and salvage options for campus users and members of the immediate community.

RELATIVE PERFORMANCE:
In its attempts to address the environmental and health impacts of its purchasing and disposal of computers, Vassar is comparable to the other two institutions that Good Company has examined. Compared to large purchasing institutions in general, our sense is that Vassar is doing very well, i.e., much better than the large majority of big buyers of computer hardware.

A program for computer and electronics waste disposal significantly reduces the College's long-term risk associated with improper hazardous waste disposal. As EPA enforcement in higher education continues to tighten, pro-active institutions will be ahead of the curve.

PRACTICES TO SHARE:
As a computer system purchaser, Vassar has the opportunity to take advantage of growing hardware take-back programs. As a large buyer, the institution has potential influence over manufacturers, and should wield this influence to push its suppliers to make progress on the take-back issue.



8. Paper:

True-cost print charging

INTENT:
Encourage efficiency by communicating the true costs of paper use to the end user.

Related items:
Observation 3
Strength 3
Recommendation 5
Indicator 9

Vassar Sources:
Art Punsoni

VASSAR PERFORMANCE:

Vassar's printing facilities do not charge students for printing. There are few informal measures discouraging over-printing by faculty or staff, such as an emphasis on doubled-sided printing or copying, or the use of electronic communication. Not all (and apparently not very many) printers have the capability to print "duplex" (double-sided), but some high-volume areas have printers that do.

The College provides printing facilities for students in numerous locations: in Main Library; in each dormitory (nine in all); in the Computer Center; and in College Center. Last year, in Main Library alone, printers printed around one million copies.

The purchasing office is still collecting information on campus-wide print charging system, which can be complicated and expensive to install. Purchasing staff aim to present options to administrators during this academic year and are shooting for next year to implement the system.

BENCHMARK:

Campus printing facilities charge for printing from computers.

RELATIVE PERFORMANCE:

Vassar lags the other two institutions at which Good Company has examined this issue, though one institution has a mix of facilities, some with free printing and others that charge.

PRACTICES TO SHARE:

Many campuses have instituted print charging systems. A charge of just a few cents virtually always results in at least a 50% drop, compared to a free-printing scenario. Although such programs can be somewhat difficult and costly to put in place, they pay for themselves through immediate savings in several areas: paper, wear-and-tear on printers, and labor costs for purchasing and restocking paper.

When implementing a print charging system, it is important to implement it campus-wide, especially when cost recovery is an issue and where students have open access to most or all facilities. Campuses that institute print charging with only partial coverage find a predictable shift in where printing happens. This can combine the worst of both worlds: paying for an expensive print charging system, but still experiencing heavy loads where printing is free.



9. Paper:

Paper use and purchasing

INTENT:

Use campus leadership – and the power of large buying units – in basic purchasing policies to encourage markets to provide recycled paper products.

**Related items:
Observation 3
Strength 3
Recommendation 10
Indicators 8 and 19**

**Vassar Sources:
Susan DeKrey, George Laws, Art Punsoni**

VASSAR PERFORMANCE:

Campus computing facilities and offices use only acid-free, recycled paper with 30% post-consumer recycled content (PCRC). The Purchasing Office has plans to test the use of 100% PCRC paper.

This is an important part of Vassar's waste stream and, more generally, its resource use. The College used 1,600-1,700 cartons of paper last year, that's 8-8.5 million sheets of paper, or about 2,400 sheets per person per year!

Vassar contracts with a variety of off-campus printing businesses for its outsourced printing needs. Catalogs, newsletters, brochures, and directories are all printed off-campus. Two of the largest printers use soy-based inks and pursue other environmentally friendly techniques for employee health reasons. In general, Vassar lets its vendors know that it prefers the use of recycled paper. Although there are no clear or strict specifications, the Publications Office estimates that 85-90% of printing is on papers with recycled content and soy-based inks. High-quality printing is usually on paper with 25% or less recycled content.

Other areas of significant paper use:

- Toilet tissue – 20% PCRC and Process Chlorine Free (PCF).
- Paper towels – 40% PCRC and PCF.

Note: Vassar uses many local printing companies for overflow jobs and specialized work. The Publications Office subcontracts locally to support the area businesses (and generally to support the professional community in Poughkeepsie). The Publications Office sees itself as having invested in educating the community.

BENCHMARK:

This benchmark has quantitative and qualitative components:

(1) At least 80% of large-scale paper purchases (such as for routine printer and copier use) consist of at least 30% post-consumer recycled content (PCRC). See end note for details on calculating this percentage.

(2) Campus paper purchasing encourages or is guided by the following:

- Use of post-consumer recycled-content and totally chlorine-free (TCF) or process chlorine-free (PCF) paper wherever technically and financially feasible (especially where inexpensive alternatives are widely available, such as bathroom tissue).
- Specification of recycled-content materials as a criterion for outsourced purchases, such as campus publications or programs for athletic events. (An appropriate target is 30% post-consumer fiber, which has been the Federal Government's standard since 1999.)
- Use of post-consumer recycled-content and TCF or PCF paper wherever possible by on-campus printing services.

RELATIVE PERFORMANCE:

Only 30% PCRC used for printing and copying. They are looking for a comparably priced and effective 100% PCRC option. They use many local printers (keep the professional community alive). Approximately 85-90% of what they have printed off-campus is on some recycled content. Good town relationship. Also use soy-based inks.

PRACTICES TO SHARE:

Vassar could dramatically increase the use of 100% PCRC paper. The College could also seek to use less environmentally-taxing print methods such as high-gloss brochures.

10. Campus operations and design:

Custodial chemical use

INTENT:

Encourage on-going assessment of the chemicals used in campus-wide custodial operations in order to reduce exposure of employees and campus users to toxicity.

**Related items:
Observation 2
Strength 2
Indicator 19**

**Vassar Sources:
Michael Spath, Cynthia VanTassell**

VASSAR PERFORMANCE:

Vassar attempts to use cleaners with the lowest toxicity that will still get the job done. Stronger chemicals are used only in small areas for tough jobs and are not distributed to custodial closets (they are dispensed only as needed). Most chemicals are citric-acid based.

The head custodian looks for chemicals with the least odor, and avoids bleach (except for the deck of the swimming pool). Janitors are involved in testing new chemicals; selection is based mainly on performance. Also, custodial services attempts to keep down the number of different products in use (this reduces training costs).

A few chemicals cover most jobs, mainly just three products from the Hillyard Arsenal System – a window cleaner, an all-purpose cleaner and a heavy duty cleaner. (These chemicals are prescreened as “environmentally friendly” by the reputable environmental purchasing program of King County, Washington.)

Vassar hires subcontractors for exterior window cleaning, TA and TH cleaning, and carpet installation.

Vassar has worked hard to simplify its custodial chemicals use. This simplification is an important strategy, as it undoubtedly reduces direct and indirect costs in areas such as waste from overuse, acute or long-term injury from chemical misuse, and storage of inventory.

Interestingly and sensibly, the head custodian is part of the process for selecting new carpets. This is an important example of involving key parties in early-on decision-making in order to ensure lower life-cycle costs.

BENCHMARK:

A monitoring and management process exists to assess needs for each chemical-intensive custodial product. This process must consider toxicity, downstream impacts, and worker safety, as well as cost.

RELATIVE PERFORMANCE:

Vassar does extremely well overall in addressing toxicity and waste issues in custodial chemical use:

- The use of strong chemicals is strictly limited.
- Packaging is considered in purchasing chemicals.
- Janitors are involved in selecting new chemicals.
- Disposal is a minor issue since most chemicals are used up, and because there appears to be little turnover in the list of chemicals in use.

11. Campus operations and design:

Low-impact grounds maintenance

INTENT:

Promote alternatives to pesticide and herbicide use and minimize water use in the maintenance of the built campus landscape.

Related items:
Observations 1 and 2
Strength 1
Recommendation 4
Indicator 2

Vassar Sources:
Jeff Horst and Ben, Tracy Smith,
Vassar College Landscape Master Plan

VASSAR PERFORMANCE:

The College meticulously maintains its spectacular physical setting, including 80-100 acres of turf, 350 acres of other maintained grounds and adjoining natural spaces and Vassar farm – about a thousand acres in all. However, there seems to be little systematic effort to reduce water use for irrigation or to reduce pesticide use for pest and weed control.

There are some important strong points:

- Chemical use is sensitive to campus residents; grass treatments are done when most people are gone, and there are e-mail alerts.
- Pesticide disposal happens through EH&S.
- The native plant preserve is becoming healthier as groundskeeping continues to fight invasive species. Removal is physical and does not use pesticides.
- Stormwater is diverted to Sunset Lake on campus, so the campus absorbs this potential spillover impact. (Rock salt runoff is a possible problem that has not been well studied.)
- Landscape wastes such as brush and stumps are ground and composted in an eight-acre utility area. (Vassar is currently allowing the City of Poughkeepsie to use a further three-acres area for composting.)

However, maintenance of athletic fields and prime campus turf has a high environmental burden. Turf and fields are watered 2-3 inches per week when the weather is driest: a single week at this rate consumes over four million gallons of water. (Information on total water use is incomplete – see Indicator 3.) Grass is also treated with fungicides and herbicides. This maintenance regime has a financial cost as well. Total annual expenditures on fertilizer and pesticides come to about \$15,000, mainly for Prentiss Athletic Fields.

There was a major Landscape Master Plan completed in 1988, but there has been no follow-up version. This document is an important starting place for understanding the history and needs of the campus landscape. However, it is a noticeably dated document, and deeply flawed by omission: it fails to address concerns over chemical use, water efficiency, spills for the broader ecosystem, and other impacts that are better understood than fifteen years ago.

BENCHMARK:

The campus demonstrates significant improvements over conventional pesticide-, herbicide-, and water-intensive procedures in the maintenance of landscaping.

RELATIVE PERFORMANCE:

Pesticide use: It is virtually impossible to compare groups of pesticides. They differ widely in both toxicity and persistence, and there is no single index for aggregating either of these factors. Complicating matters more, the same chemicals can also be used in different concentrations and in different forms.

However, using cost as a proxy is helpful: The two other institutions in our sample have recently spent approximately \$88 and \$13 per acre of maintained grounds on pesticides per year: Vassar spent at least \$150 per acre in 2001.

Irrigation: Vassar does not have separate records for irrigation water use. However, we were able to estimate that usage based on estimates from B&G. According to those estimates Vassar uses between 37% and 49% of its total water for irrigation. This compares to other campuses in our study that range between 35% and 41%. (Given that 90+% of Vassar's students live on campus, this irrigation water use share is high.)

PRACTICES TO SHARE:

It is possible, over the long run, to integrate some landscape and architectural needs and features. For example, deciduous trees on the south and west sides of buildings can maximize solar efficiency (passive solar heat in cooler months, shade in summer). Additionally, drought tolerant plants can be used in harsher parking areas to reduce water needs.

For irrigation, systems manufactured by Maxicom measure evapotranspiration (EVT) in order to calculate water needs, often decreasing water use by half or more over watering based on rules of thumb or rougher estimates of plant needs.

It may be possible to reduce pesticide use with Integrated Pest Management (IPM). For an example of an implementation of IPM that does not compromise aesthetics, see Longwood Gardens (PA) and their IPM suggestions at <http://www.longwoodgardens.org/> and <http://www.longwoodgardens.org/IPM/home.htm>.

12. Campus operations and design:

Transportation infrastructure and incentives

INTENT:

Create transportation opportunities that reduce environmental impacts (such as air pollution and greenhouse gas (GHG) emissions) and spillover costs to the campus surroundings (such as traffic and parking congestion).

Related items:
Observations 1 and 4
Recommendation 7

Vassar Sources:
Betsy Eismeier, Jeff Horst, Don Marsala, Sonya Reinhardt

VASSAR PERFORMANCE:

The College's performance can be summed up as follows:

- a few strategies are in place;
- there is little self-knowledge; and
- planning is clearly not taking place to bring about fundamental improvements in the campus' transportation impacts.

With 95% of students and many faculty living on campus (and other faculty and staff living nearby), the campus has understandably never really had a "transportation plan" per se.

"We don't have a parking problem, we have a walking problem."
 – unofficially attributed to President Fergusson

Vassar provides shuttles and vehicles for campus users, though there is no coordination with the municipal bus company.

However, some possible areas of improvement stick out.

First and foremost, the use and ownership of automobiles by all types of campus residents is pervasive and (implicitly) heavily subsidized (See Recommendation 7).

In general, the campus collects very little information on its transportation habits and therefore can say little about its impacts. In particular, we could uncover no surveys of campus users' transportation modes.

A notable exception is the Fall 2002 environmental studies course that just completed a study of alternative fuel vehicles for use in applications on campus. This is an important area to examine as the campus owns several maintenance vehicles, as well as four security buses and vans; all of these vehicles are gas powered.

Bicycling as a mode is clearly a minor part of Vassar's overall strategy, despite the flatness of campus and bikeability of the nearby parts of Poughkeepsie. (Note: a student-run bike loan program is just starting.)

BENCHMARK:

The university addresses transportation issues in three ways:

- **Strategies** in place
- **Planning** for the short, medium and long run
- **Self Knowledge**

Strategies: The university is implementing appropriate strategies to reduce transportation impacts.

Planning: The university plans and implements strategies to reduce its transportation-related impact on the environment and its surrounding community.

Self Knowledge: The university gathers data on campus infrastructure, use of various transportation modes, and the spatial distribution of campus users.

RELATIVE PERFORMANCE:

	Vassar College	Reed College	University of Oregon
Car parking spaces	1,409	744	3,328
Bike parking spaces	250	395	4,701
# of car spaces per bike space	5.6	1.9	0.7

Comparative data shows that Vassar lags in bike parking availability. This is in part due to the large proportion of students who live on campus but accommodations should be made to encourage trips to campus via modes other than driving.

SHARED PRACTICES:

Ideas from other campuses:

- Sufficient and pervasive bicycle parking; covered bicycle parking to make biking viable in weather that would otherwise damage exposed bikes
- Designated carpool parking spaces (for staff)
- Flexible parking passes (when parking is a constraint)
- Free or discounted public transportation passes

Indicators 13-15 (Human Resources)

13. Health and safety:

Ergonomic safety

INTENT:
Create safe workspaces.

Pursue this end by informing and empowering employees' evaluation and adaptation of their workspaces to individual needs and constraints.

Related items:
Strength 2
Recommendation 6

Vassar Sources:
Michael Spath and "Computing @ Vassar College" website

VASSAR PERFORMANCE:
Environmental Health and Safety (EH&S) has several informal, formal and/or regular processes for educating employees about ergonomic issues and providing solutions. There is some publicly available or displayed information, but that is mainly aimed at students. There is no separate budget for purchasing more ergonomic equipment. Vassar Computing provides resources for students on ergonomics issues and Repetitive Stress Injuries through Help Desks in the labs.

EH&S piggy-backs on the Computing and Information Services Department's regular "Tech Tuesdays": CIS staff go through a given building, solving problems and answering general computer questions and EH&S staff follows behind with solutions to ergonomic problems. Tech Tuesdays gets to each department twice per year.

There are a few information sources and opportunities for proactive staff to learn about ergonomic equipment options through EH&S and Purchasing. There will eventually be information resources available to employees (posters). Most of the current materials are student oriented (computer labs have ergonomic info). Employees receive some training on ergonomic injuries from the Tech Tuesday group on risks and injury symptoms. Employees can also report an injury or issue to CS or EH&S, who then respond with a visit, an assessment, and recommendations which may include new furniture.

EH&S tracks ergonomic problems and all non-ergonomic injuries and accidents, and there is a small committee (consisting mainly of EH&S and Purchasing staff) specifically for ergonomic issues, but the lack of EH&S staff time available for this activity is a major constraint.

The Purchasing Department has a variety of equipment for staff to drop by and try out. Furniture is slowly being replaced with more ergonomic solutions. There is no separate budget for ergonomic furniture. EH&S staff has recommended an "ergonomics allotment" to fund new workstation furniture. Apparently, this suggestion was a victim of the recent budget problems.

BENCHMARK:
Demonstrate concrete action in the following areas:

- Information resources available to employees
- Employee training on ergonomic safety
- Proactive and preventive involvement in ergonomic safety

Acknowledge the financial burden of this transformation by implementing over time.

Where feasible, include the following:

- Employee design and implementation of ergonomic solutions
- Employer process to address and control ergonomic problems

RELATIVE PERFORMANCE:
Vassar has many excellent ergonomic safety practices and processes in place. The only shortcoming is in the meager resources allocated to these efforts.

14. Health and safety:

Indoor air quality (IAQ)

INTENT:

Protect indoor environmental quality, which is paramount in workplace quality and employee health.

VASSAR PERFORMANCE:

The College has in place or is developing a wide range of IAQ procedures and systems. These processes and guidelines are already in place:

- Response process – investigation by EH&S staff and appropriate responsible staffperson for resolution.
- Buildings designed and maintained to proper codes.
- Ventilation systems – evaluations and maintenance conducted by B&G regularly. Buildings' air handling examined during building modification.
- Monitoring for indoor air pollutants – to the best standards of science and engineering, these tests are carried out.
- Airflow mixing – as required by code. Vassar uses at least 20% fresh air in all HVAC systems.
- Materials – most work is scheduled when areas are not occupied and will remain unoccupied during the period of maximum off-gassing.

B&G's design guidelines and/or purchasing guidelines should provide some guidance (for construction and renovation) regarding the use of low-VOC or non-off-gassing materials. This selection process takes place with carpet, but apparently only as a result of staff interest (not a policy): custodial staff choose carpet tiles that are recyclable and low VOC/off-gassing. Custodial staff meet with architect and builders on all materials that custodial employees will be responsible to clean.

For paints, the classification as "low VOC" is not a purchasing criterion for the College.

BENCHMARK:

Environmental Health and Safety (EH&S) (or the equivalent campus unit) policies and procedures address each of the following areas:

(1) Monitoring and management:

- Regular evaluations of and maintenance improvements for ventilation systems
- Periodic and regular IAQ monitoring for major indoor air pollutants/contaminants
- Explicit standards for airflow mixing of fresh/outdoor air
- Well-enforced rules governing smoking indoors and near the entrances of buildings
- A process for maintaining low IAQ liability, including capacity for response

(2) Prevention and design:

- Interior and exterior materials for construction and renovation and office furniture that minimize or eliminate off-gassing
- Construction and renovation should include ventilation systems that can be adjusted by users
- Cleaning chemicals with low toxicity and persistence (see indicator 10)

RELATIVE PERFORMANCE:

EH&S has clear processes in place. However, relative to other institutions that Good Company has worked with, Vassar's EH&S Department is seriously understaffed.

There are no IAQ-oriented criteria to direct materials selection in construction, renovation and painting.

PRACTICES TO SHARE:

Low VOC paints are increasingly common but not the default in most retail settings. However, with a minimum of effort and preparation, it is possible to find these less toxic options and/or providing guidelines for architects and other contractors.

Some institutions track sick days per building as a way of identifying subtle, long-term IAQ problems.

Related items:
Strength 3
Recommendation 6
Indicator S-4

Vassar Sources:
Michael Spath, Cynthia VanTassell
Guidelines for Designs at Vassar
College

15. Workplace practices:

Core benefits for employees

INTENT:

Ensure that all employees and their families have health care and other fundamental benefits. Ensure that part-time employees with extended employment at the university enjoy benefits that are commensurate with their work.

**Related items:
Indicator S-5**

**Vassar Sources:
Betsy Eismeier, Leslie Power**

VASSAR PERFORMANCE:
Vassar offers generally high-quality benefits to its employees.

Health benefits: All employees have access to individual coverage, although Vassar does not administer the service employees' plan. Family coverage is available for all with varying levels of support from the College for the different employee groups. There are four different health plans, some covering alternative medicine such as chiropractic and acupuncture. There is, however, no dental coverage. Partners receive the same coverage as families. Flexible spending accounts for medical expenses beyond insurance coverage are available to all but service employees.

Life and disability insurance: Term life insurance is available to clerical, faculty and administrative employees with slightly lower coverage for clerical employees. There is an extremely generous disability coverage plan for faculty. It is more limited for clerical employees, but there is a Sick Bank available to cover the gap.

Tuition benefits: All non-service employees are eligible for free courses for a nominal registration fee of \$25, and are eligible for a Vassar degree. Service employees can be reimbursed for classes that are relevant to their duties.

Child education benefits: A Vassar education for the children of faculty and administrators is free. Vassar will also pay up to half of Vassar's tuition at another institution. For clerical and service employees who have worked at Vassar for three or more years, their children can attend Vassar for free (but there is no grant program).

Pro-rated medical benefits for part-time employees: At least 30 hours per week or 800 hours per year provides eligibility for health benefits. At that point coverage is full (i.e., there is no prorating). Adjunct or visiting faculty also receive benefits if they teach at least three courses.

Retirement benefits: Faculty, administrators, and clerical staff are able to invest in a retirement fund through TIAA CREF. Faculty and administrators receive a retirement contribution to their account on top of their base pay. Service employees have a defined benefit plan that is written into their contract. All groups are eligible for a supplemental retirement account.

BENCHMARK:
There are three components to the required core benefits:

- *Individual benefits*
- *Family/partner benefits*
- *Education benefits*

In addition, provide pro-rated medical benefits for part-time, non-tenured employees whose contracts or employment with the university last longer than three (3) months.

Note: These benchmarks include non-academic employees, such as administrative, janitorial and food service staffs.

RELATIVE PERFORMANCE:
Benefits for employees are substantial: aside from not having dental coverage, the packages are broad. In particular, the College offers excellent education benefits, and it extends benefits to many part-time and temporary staff, as well as families and partners.

Unlike many institutions of higher education, Vassar does not leave large segments of its workforce with low-quality benefits or no benefits at all. In general, there are only modest differences between faculty/administrator benefits and service/clerical employee benefits.

Disclaimer: This is not an official review or analysis of Vassar's benefits by Human Resource professionals. Rather this is a summary to allow a comparison of benefits with other institutions of higher education, as the issue of benefits for employees is an important one.

Indicators 17-20 (Community and Core Function)

<p>17. Curriculum content:</p> <p>Curriculum for environmental and/or sustainability studies</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>INTENT: Provide courses that educate students on many aspects of sustainability.</p> </div> <p>Related items: Strengths 1 and 2 Recommendation 3</p> <p>Vassar Sources: Harvey Flad, H. Daniel Peck, Peter Stillman, Jeff Walker, web site of the Environmental Studies program</p>	<p>VASSAR PERFORMANCE: Vassar's environmental studies program provides a formidable academic experience. The upper-division courses and independent study options offer opportunities to study the campus, work in the community, and even pursue field work away from Vassar for credit. The "discipline-centered, multidisciplinary major" balances the benefits of breadth and depth: students choose both a main concentration and sub-concentration, but must also reach upper-division courses in both areas.</p> <p>Several aspects of the program's structure and requirements prepare students in ways that are vital for solving the great social and ecological challenges facing humankind. The use of team teaching for all 200-level courses exposes students to interdisciplinary dialogue. As a way of not simply churning out generalists, the requirement of two concentrations ensures that students reach a certain level of mastery in both scientific and non-scientific disciplines.</p> <p>Also, it is encouraging that there is a strong bond between the Environmental Studies program and the Sustainability Committee. This connection is important for Vassar efforts to use the campus as a learning space and for academic projects that support on-the-ground sustainability efforts. Similarly, environmental studies courses and courses by affiliated faculty in their respective departments have done significant studies of the campus and the surrounding community.</p> <p>The program's courses are taught by faculty from many departments in the natural and physical sciences, social sciences, and humanities. Just as important, the leadership of the program is also multidisciplinary: the faculty just on the steering committee come from Anthropology, Biology, Chemistry, English, Geography and Geology, History, Political Science, Psychology and Sociology. A noticeable gap in related course offerings is in Economics, an important department from which there has been little contribution to the Environmental Studies curriculum.</p> <p>Note: Good Company's assessment does not cover all coursework and research relevant to sustainability issues. Our focus is on measuring the opportunities for focused study in a few core disciplines, such as those mentioned above.</p>	<p>BENCHMARK:</p> <ul style="list-style-type: none"> • The university has an Environmental Studies program or its equivalent, receiving general funding that establishes its on-going presence and independence (i.e., not simply external grant funding). • It is possible to meet certain distributional requirements for undergraduates by taking Environmental Studies courses or their equivalents. <p>RELATIVE PERFORMANCE: Many if not most institutions now have some sort of Environmental Studies program. However, few institutions offer programs that rival Vassar's in terms of breadth, depth, and the balance between the two. The program also seeks balance between disciplines inside and outside of the natural sciences, an unusual and valuable approach.</p>
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18. Campus community and beyond:

Governance and leadership for sustainability or environmental performance

INTENT:

Encourage whole-organization thinking about goals and performance relating to sustainability and/or environmental issues. Encourage colleges and universities to invest resources in – and vest authority with – a campus body devoted to sustainability or environmental issues in order to create policy and provide leadership.

**Related items:
Indicators 1,2 and 3**

**Vassar Sources:
Betsy Eismeier, Carl Gottschalk, Jeff Horst, Patrick Miller, Ken Oldehoff, Cynthia VanTassell, Jeff Walker, the Sustainability Committee, The Governance of Vassar College 2001-02, Classroom Master Plan, Utility Systems Master Plan and Landscape Master Plan**

VASSAR PERFORMANCE:

The College has a strong, active and effective Sustainability Committee that is having an important impact. However, the campus lacks both high-level policies for leadership and specific policies or guidelines for high-leverage action areas (such as capital construction or purchasing).

The Sustainability Committee does not have official powers, but it brings together a diverse group of campus staff and students, and thus acts as a *coordinating* body (although it is not an official governance committee). Considering that it is relatively new, the Committee has performed well, involving people from all over campus, beginning to tackle a range of issues, and attempting a broad sustainability assessment by bringing in Good Company.

However, recognizing the scope of activities in its purview, the Committee must balance breadth with depth in what it addresses substantively. This is especially true in areas where it stands to have the most on-going impact: raising awareness, educating the campus community, guiding the activities of student interns, and providing information for decision-makers.

Vassar has few official, campus-wide policies to articulate institutional goals on sustainability. Outside of EH&S, the College has few policies and procedures to improve its sustainability performance. A lack of policies is not necessarily a shortcoming, but sustainability concerns do not surface naturally as part of key action areas: building, renovation and construction; landscape and facilities planning; purchasing; and landscape maintenance. In short, there is no formal part of the governance structure for broad sustainability issues. This suggests that there is room for policies to encourage campus-wide thinking on how sustainability issues relate to most routine activities. (See practices at right.)

The campus might also need more person-power to coordinate efforts. The Sustainability Committee and its interns are already busy. This suggests the opportunity for additional staff time to serve a coordinating role that makes existing and new efforts more effective.

BENCHMARK:

The institution is taking steps in both of the following areas:

(1) *Clear policies, principles or goals* that provide direction for staff, administrators, and other members of the campus community. Typically, this includes an explicit environmental policy or sustainability policy, with some sort of institutionalized mechanism for the policy's on-going revision and implementation.

(2) *An individual or campus decision-making body* with clear responsibilities to monitor, report on, give advice about, and promote action and awareness around sustainability and/or environmental issues. The committee or team, preferably one involving diverse campus stakeholders, has a clear place in the hierarchy and formal institutional power.

RELATIVE PERFORMANCE:

Vassar is demonstrating leadership by having a sustainability committee that attempts to coordinate and document diverse but related efforts campus-wide.

PRACTICES TO SHARE:

A small number of campuses have hired full-time sustainability coordinators. However, since there are few clear official directions for moving toward sustainability at Vassar, such a person would probably rely on guidance from a body such as the Sustainability Committee, and at worst be entangled in conflicting priorities of different influential campus stakeholders. In short, such a position would be effective inasmuch as its mandate is clear and enjoys buy-in.

Campus sustainability efforts and discussions could gain from such strategies as:

- A clear campus policy and/or statement that explicitly includes sustainability concerns
- Updated master plans (for landscape, residences, and utilities) that either (1) follow in the footsteps of a campus sustainability policy and/or statement, or (2) have sustainability as a guiding principle or organizing concept

19. Campus community and beyond:

Purchasing tools and strategies

INTENT:
Provide structure, guidance and resources for campus-based purchasing in order to maximize the social and environmental benefits of the university's market presence.

Related items:
Observation 4
Strengths 2 and 3
Recommendations 2 and 10
Indicators 7, 9 and 10

Vassar Sources:
Alex Averin, Art Punsoni

VASSAR PERFORMANCE:
For specific major items covered elsewhere in this report (paper and computer hardware), Vassar has some criteria in place that ensure above-average sustainable purchasing. For general office supplies, there are no procedures in place relating to sustainability performance. For other purchasing, there are no resources to streamline the procurement of more sustainable options by campus buyers in different contexts.

There are some important signs of capacity for incorporating sustainability criteria in purchasing. The Purchasing Office staff seek a great deal of information from potential vendors and contractors. They also watch all purchases made by campus buyers. This means that there is an excellent opportunity to adopt additional purchasing criteria, recommendations, or preferred products over time.

For printers and copiers, the purchasing office seeks large contracts. In such cases, it is feasible to calculate yield (i.e., cost per copy), so long-term best value is considered in such situations. In addition, all toner cartridges are returned for refill.

Most major purchases go through Purchasing so contract language is not a big issue. CIS identifies the computer specifications and Purchasing does the actual purchasing. The surplus property web site that is being built will be linked to the current purchasing web site. By providing a resource for linking campus surplus to users' needs the web site will preempt unnecessary purchases.

BENCHMARK:
Campus purchasing addresses the impacts of its purchasing functions in four ways.

- (1) *Best-value decision making*
- (2) *Contract language*
- (3) *Information resources for campus buyers*
- (4) *Major supplier relationships*

(These four strategies are discussed in detail in Good Company's Sustainable Pathways Toolkit Technical Manual.)

RELATIVE PERFORMANCE:
Since few institutions have solid procedures to address the environmental performance of suppliers, Vassar is not behind the curve in this respect.

PRACTICES TO SHARE:
Vassar could look for state or regional buying groups that have the power to influence manufacturers and distributors. This is more common for public institutions that share purchasing procedures with other public agencies, but it is possible to join a group in order to boost its buying power and take advantage of the agreements that it negotiates.

Vassar should borrow stock RFP language and issue RFQs to potential contractors in order to communicate preferences and get information from potential contractors and vendors.

20. Campus community and beyond:

Planning and policy for campus construction and development

INTENT:

Encourage universities to plan over a long time frame in areas such as construction, housing, and transportation.

Related items:

Observation 1

Strength 1

Recommendations 2 and 4

Vassar Sources:

George Brengel, Carl Gottschalk, Jeff Horst, Vassar College Briefing Book, The Governance of Vassar College 2001-02, Classroom Master Plan, Vassar College Utility Systems Master Plan, Vassar College Landscape Master Plan, Vassar College Residential Facilities Master Plan, Guidelines for Designs at Vassar College

VASSAR PERFORMANCE:

Vassar has several extensive planning documents covering landscape, residential facilities, construction and renovation design guidelines and utilities.

Generally, these documents do not integrate sustainability concerns such as energy efficiency, water efficiency, materials use, waste and recycling, or sustainable purchasing.

To be clear: Good Company does not suggest that sustainability concerns such as those listed above be made the centerpiece of any or all of these policy documents. Rather, we are simply observing that, for the most part, such concerns are absent from high-concept policy documents.

In certain ways, this oversight compromises Vassar's mission. For example, the Residential Facilities Master Plan takes as a starting point the College's commitment to a liberal arts education and "the idea of students and faculty scholars coming together to form living and learning communities... in which *the development of values and character* are considered as much a part of the education as the transmission of knowledge" (emphasis added).

Currently, Vassar's policies and plans for the development and stewardship of its physical spaces do not fully meet the mission of the college. Thus, Good Company sees a golden opportunity for Vassar to more fully achieve its *raison d'être* through thoughtful, integrated sustainability efforts.

BENCHMARK:

The institution has:

(1) **A long-term plan** (with a time horizon of at least 20 years, as well as updates at intervals of no more than five years) that incorporates detailed plans, forecasts, and guiding development criteria for areas such as construction and renovation for buildings and open spaces, housing, and various modes of transportation; and

(2) **Clear policies and strategies** that guide and support the implementation of the long-term plan.

PRACTICES TO SHARE:

A campus Master Plan should articulate clear goals and parameters for the development of the campus as a physical space. It should be truly comprehensive, reviewed and amended regularly, and guide the vast bulk of campus development. It should also integrate concerns about the surrounding community, and frame virtually all construction and development as well as seek to minimize long-term maintenance and energy costs, all while having a strong sustainability element.

Additional areas of concern that could be explicit in the Master Plan, or in a campus sustainability policy, include: energy and water use; land use and transportation planning; life-cycle costing in purchasing of durables and in design of campus buildings; and materials and resource use in renovation and new construction.



Supplementary Indicators

S-1. Campus operations and design

Purchasing policy for wood products

INTENT:
Promote the purchasing of certified sustainably harvested wood products in campus construction.

Related items:
Recommendation 2

Vassar Sources:
Jeff Horst, Rachel Kitzinger, Patrick Miller

VASSAR PERFORMANCE:
Vassar has no policy regarding wood products. The College as a whole does not look at the issue. However, one campus body, the Classroom Committee, is becoming more interested in the types of woods used in construction and renovation.

NOTE:
Vassar has recently purchased some wood products of particularly questionable origins (i.e., tropical hardwoods). Since this sort of wood could potentially appear in up-coming purchases related to renovation, this is an opportune time to consider at least a simple purchasing screen, if not a full-blown, elaborate policy.

BENCHMARK:
Wood and wood-products purchasing must prioritize wood from sustainable and/or low-impact sources. Criteria can include:¹

- No wood products from old growth forests
- No wood products from U.S. public lands
- No wood purchases that encourage the conversion of natural forests to plantations
- No purchases of genetically modified wood

RELATIVE PERFORMANCE:
Only a few campuses have acted in the area of sustainable wood purchasing, but momentum appears to be growing as campuses start with policies regarding paper use and then consider wood used in renovation and construction.

PRACTICES TO SHARE:
Several campuses have enacted wood and paper products purchasing policies. For more resources on alternatives options for paper and wood, use resources from Rainforest Action Network (http://www.ran.org/ran_campaigns/old_growth/campus/) and the Certified Forest Products Council (<http://certifiedwood.org>).

S-2. Energy:

Renewable energy purchasing

INTENT:

Encourage institutions to use the marketplace to promote renewable energy.

**Related items:
Recommendation 2**

**Vassar Sources:
Patrick Miller**

VASSAR PERFORMANCE:

The College does not currently make special purchases of electricity from renewable sources. Buildings and Grounds has received a proposal from a wind energy provider, but this is still in its formative stages.

NOTE:

Central Hudson, the utility that supplies Vassar with electricity, does not currently offer any renewable option such as wind power. Since the utility is a monopoly, this situation poses a significant barrier. However, as a major buyer, it would be helpful if Vassar were to bring up the issue with the utility, or perhaps help to organize a group of large local buyers. This sort of coordination can be enough to induce a utility to make investments in renewable energy generation capacity.

BENCHMARK:

- A fixed percentage or amount of electricity purchases from renewable sources (wind, low-impact hydroelectric, geothermal, solar, etc.)
- A target percentage for future years, or a schedule for a transition

A typical starting target percentage is in the range of 5-20%.

RELATIVE PERFORMANCE:

Several institutions have begun purchasing green power, though the market for renewable energy is growing quickly, and many more organizations outside of higher education are beginning to purchase renewable energy.

PRACTICES TO SHARE:

Although Vassar may not have any easy opportunities for renewable energy purchasing directly through its utility, there are other options:

- Renewable Energy Credits – offsets for non-renewable energy purchases – can be purchased from renewable energy marketing companies such as Renewable Choice (<http://www.renewablechoice.com/>) and Green Mountain Energy (<http://www.greenmountain.com/>).
- Students could pay for it through fees by vote to “tax” themselves, as has been done at several colleges and universities. (At these institutions this did not add to the institution’s costs because student fees bore the full cost of the increase.)



S-3. Resource use:

Greenhouse gas (GHG) inventory

INTENT:

Encourage full accounting of GHG emissions in all areas of campus operations.

**Related items:
Recommendation 9**

**Vassar Sources:
Sustainability Committee and its
interns**

VASSAR PERFORMANCE:

There has never been a greenhouse gas (GHG) inventory of Vassar, but the environmental studies senior seminar created a transportation survey that will, when implemented during spring term 2003, provide key data for an inventory.

BENCHMARK:

- Conduct GHG inventory for all campus operations. At a minimum, include campus utilities use. Where feasible, include impacts from commuting, institutional and student travel, and the waste stream.
- Clarify "boundary issues" for inventory (i.e., clearly articulate which aspects of campus life should fall inside and outside of the inventory, and which are included given available data).

RELATIVE PERFORMANCE:

Few campuses have conducted a full GHG inventory, but there are now many guides to make this process relatively easy.



S-4. Campus operations and design:

Low VOC paints and finishes

INTENT:
Encourage the replacement of toxic paints and finishes with non-toxic alternatives.

Related items:
Indicator 14

Vassar Sources:
Joe Zeppetelli

VASSAR PERFORMANCE:
Vassar has no policy for preferential purchasing of paints and finishes that are lower in VOCs (volatile organic compounds) than typical paints on the market. Buildings and Grounds keeps MSDS sheets for every paint and finish. However, staff indicated that non-low-VOC paints are more likely to be used outside, which can at least reduce the IAQ impact from paint.

BENCHMARK:

- Seek low VOC paints and finishes
- Include low VOC paints and finishes as preferred alternatives in requesting materials for construction and renovation projects.

PRACTICES TO SHARE:
When purchasing paints (especially in large amounts), an institution can communicate preferences to sellers. Some organizations (such as King County in Washington State - <http://www.metrokc.gov/procure/green/>) have assembled lists of environmentally preferred products. Also, Green Seal (<http://greenseal.org/>) provides product information and certification for a wide range of products, including paints and finishes.



S-5. Employee benefits:

Extended benefits and employee assistance programs

INTENT:

Promote the quality of life of employees, and assist employees in integrating their work and non-work lives. Leverage the institution's buying power and/or logistical advantages to provide services that employees could not get as individuals.

**Related items:
Indicator 15**

**Vassar Sources:
Leslie Power**

VASSAR PERFORMANCE:

Vassar provides or makes available for employees some of the extended employee benefits common at many universities and colleges. For example:

- Flexible work schedules: There is some minor tweaking of the regular work schedule allowed in some departments.
- Child or day care: Although Vassar does not pay for child care, there is a fee-for-service facility on sight.
- Professional development and training: All employees are eligible for the education benefit, especially if it is applicable to their position at Vassar. Professional development programs, such as conferences, are also encouraged.
- Medical plans that cover alternative medicine: Both acupuncture and chiropractic care are covered under one of the medical benefit plans. For the plans without that coverage, flexible spending accounts allow people to save money when using those services.

Areas for improvement at Vassar include:

- Health-promotion and wellness programs: Aside from the Ergonomics program at Vassar, there is very little focus on employee wellness. Most of the Wellness Coordinator's attention is on the student population. There are a few Physical Education classes that fit into the category. Employees enjoy free use of campus fitness facilities, but the lack of lockers for employees is a deterrent.
- Resource and referral services: Benefits such as college-sponsored counseling, legal aid and family programs are not available at Vassar. However, recent changes in department administration will likely bring a focus to making changes in this area.

BENCHMARK:

None

PRACTICES TO SHARE:

(see suggestions at left)

S-6. Core function:

“Green chemistry” curriculum

INTENT:

Build awareness among chemistry students of the health and environmental impacts of modern chemistry, and reduce the health and environmental impacts of learning chemistry.

**Related items:
Indicator 17**

**Vassar Sources:
Stuart Belli, Christina Hammond**

VASSAR PERFORMANCE:

Vassar’s lab and classroom courses in chemistry do not offer explicitly “green chemistry” material, although many courses and independent study options provide the opportunity to study issues of human and environmental health. The lab courses make a strong effort to include micro-scale techniques to the fullest extent without compromising the academic experience, protecting student health and safety but also providing quality experiments.

Chemistry training in particular and science training in general can be integrated with the Environmental Studies program. There have also been other courses (outside of environmental studies) that link science to issues of health, policy and the environment.

The chemistry lab instructor has plans to incorporate green chemistry concepts in the future.

BENCHMARK:

The institution’s Department of Chemistry has policies and curriculum to address the following concerns:

- Chemistry education should be a part of integrated and holistic science training that addresses the human and ecological impacts of hazardous waste generation and exposure to toxic substances.
- Chemistry education typically involves the generation of and exposure to toxic materials, far beyond what is necessary from a pedagogical standpoint.

RELATIVE PERFORMANCE:

Very few institutions have even minor (much less vigorous) pedagogical implementation of green chemistry principles. In this respect Vassar is entirely in the mainstream.

However, the use of micro- and mini-scale experiments, wherever academically feasible, shows an above average concern for student health impacts through chemical exposure.



S-7. Campus community and beyond:

Stakeholder involvement in new construction

INTENT:
Promote the inclusion of user groups in the planning and design of new campus construction.

Related items:
Recommendation 2

Vassar Sources:
Rachel Kitzinger, Vassar College Classroom Master Plan and Vassar College Residential Facilities Master Plan

VASSAR PERFORMANCE:
The Residential Facilities Master Plan, completed in May 2000, is the most recent major planning document of relevance to a broad campus constituency, and its creation involved a wide range of stakeholders.

The Classroom Master Plan is another recently created planning document that relied heavily on the input of stakeholders. Its creation, in addition to assessing campus classroom needs and providing guidelines for designing classrooms, has effectively heightened Faculty's awareness of the type of environment in which they teach and its impact on teaching effectiveness.

However, Vassar has no published process or guidelines to ensure the inclusion of diverse campus stakeholders in decisions about new construction.

BENCHMARK:
The planning processes that guide new construction on the campus include formal steps for involving groups of end users for construction projects.



S-8. Campus community and beyond:

Labor policy for campus licensing

INTENT:

Encourage campus leadership to demonstrate a commitment to a long-term process of addressing labor rights in developing countries.

Related items:

None

Vassar Sources:

Michael Blakes (of Barnes and Noble), Steve Dahnert, Art Punsoni

VASSAR PERFORMANCE:

Vassar has no official, implemented policy regarding the sourcing of Vassar licensed apparel. Largely as a result of student pressure, the College is affiliated with both the Worker Rights Consortium (WRC) and the Fair Labor Association (FLA), two organizations dedicated to improving working conditions worldwide.

In an attempt to address the issue, some campus units have polled uniform vendors to assess their standings on labor issues, but the practice is not widespread throughout campus.

The campus bookstore is run by a contractor, Barnes and Noble, which sources all official Vassar apparel, and the College has no direct control over products offered in the store. Officially, B&N follows a standard "code of conduct" with its apparel subcontractors. The code of conduct is not posted in the store, but it is available if people want the information. Bookstore management reported that they are in the process of posting that information.

According to the respective web sites of Worker Rights Consortium (<http://www.workersrights.org/>) and Fair Labor Association (<http://www.fairlabor.org>), Vassar is an affiliate of both organizations. Still, Good Company uncovered little evidence that these memberships or affiliations have resulted in action on campus. Aside from the uniform vendor polling there has been no other significant action on campus regarding the availability of certified sweatshop-free apparel for campus employees or in the campus bookstore.

NOTE: This issue has symbolic importance, and Good Company encourages campuses to participate in efforts to make campus purchasing a force for eliminating sweatshop labor. However, licensed apparel is a tiny part of a campus' social and environmental footprint.

BENCHMARK:

The campus is a member of or participates in one of the existing groups currently pursuing labor monitoring and labor standards for garment manufacturing.

RELATIVE PERFORMANCE:

Vassar's performance is typical of institutions of higher education: there is no on-going reporting or monitoring; there is no certification process of licensed goods; and there is no information available (on labor conditions of the production of licensed apparel) at point of purchase.

Further progress on this issue will require changes in the industry's practices, motivated by non-industry stakeholders, especially those with bulk purchasing power and a high profile, such as institutions of higher education.

PRACTICES TO SHARE:

In order to ensure results, some committee, administrator or on-going campus body will need to establish a relationship with purchasers at Barnes and Nobles, or with another supplier of licensed apparel.



S-9. Campus community and beyond:

Investment policy for endowment funds

INTENT:
Use campus financial strength to demonstrate a commitment to a long-term process of addressing social and environmental issues in the marketplace.

Related items:
Recommendation 2

Vassar Sources:
Steve Dahnert

VASSAR PERFORMANCE:
Vassar has a small percentage (less than 1%) of its endowment invested in socially and/or environmentally screened investments. (This investment was made in 1999, primarily in response to student pressure.)

Good Company found no lasting decision making policies to entrench or maintain even this small screened investment over time. However, there is an active effort on campus to research, write letters, and vote on proxy issues related to endowment's investments. Three campus groups work in this area:

- The Investments Committee meets regularly to set the college's investment policy, manage Vassar's endowment, and make management decisions.
- The Trustee Investor Responsibility Committee (TIRC) – makes proxy voting decisions on social issues on stocks in the college's portfolio.
- The Campus Investor Responsibility Committee (CIRC), which consists of two students, two faculty, two administrators and two alumni, does research on social proxy issues and makes recommendations to TIRC. CIRC also investigates issues outside of Vassar's portfolio.

To inform their efforts, the committees use an outside research service, the Investor Responsibility Resource Center (IRRC), to examine annual meetings and reports, and provide research on individual companies and issues (such as overseas labor).

Thus, although there is no official investment screening policy, the College has a philosophy of engagement, viewing divestment as counterproductive

Still, this activity still has room to mature. Historically, Vassar has strangely shied away from voting on any tobacco industry proxy issues (much less divesting of tobacco stocks), even though this is an area of consensus in the SRI world. In addition, Vassar's Investments Office informally supports the MacBride Principles – an extremely narrow investment screen (see Glossary) that provides little if any investment guidance.

BENCHMARK:
Articulate values and criteria (in addition to bottom-line concerns) to guide endowment investment policy.

RELATIVE PERFORMANCE:
Although most institutions still have no official SRI policy, more than a dozen elite private institutions have committees (like Vassar's), screens or policies. Thus, Vassar is generally ahead of the mainstream on this issue.

Note: Vassar has one of the largest endowments among comparable institutions – approximately \$554 million as of June 30, 2002. The College's investment decisions represent a major opportunity for leadership.



S-10. Campus community and beyond:

Food procurement and disposal by campus units

INTENT:
Reduce pre- and post-consumer food waste and increase local and organic purchasing by food service units on campus.

Related items:
Observation 4
Strength 3
Recommendation 2

Vassar Sources:
Bruce Harms, Maureen King, Ken Oldehoff

VASSAR PERFORMANCE:

Vassar's dining facilities, which are managed by Aramark, have instituted a variety of practices and events that demonstrate a commitment to serving the campus community's expectations regarding food:

- Campus Dining organizes a "Harvest Meal" once each year in the fall, using all local foods.
- Campus Dining purchases fair trade coffee through Equal Exchange. Vassar is also the first institution to use Starbucks Fair Trade as a house blend.
- People for the Ethical Treatment of Animals (PETA) ranked Vassar in its top 10 institutions for vegetarian- and vegan-friendly food service.
- Waste oil is collected and picked up (i.e., diverted from the waste stream).
- Composting is being implemented at the Town Houses, the TAs and ACDC, though it is still in its infancy. (Some composting material goes to McEnroe Organics, a local farm.)
- Food recovery is not a major goal because there is very little waste (most food is made to order).

There are important activities and initiatives outside of the purview of Campus Dining:

- The campus hosts a farmers market (though not as part of campus dining).
- Vassar is one of three pilot sites in a new Cornell program called "Farm to college". The program is only just underway this academic year.

Overall, campus dining is responsive to student demands and institutional changes. Thus, students could potentially motivate change in a variety of areas, such as food waste disposal, packaging, securing a wider range of organic produce, organic and antibiotic/hormone-free meats and dairy products, and pursuing more consistent local purchasing. In the past, Aramark managers have been receptive to innovations from students who present their case well.

The Hunger Action Committee addresses issues of hunger and homelessness on a local and global scale. They educate the campus regarding the causes, effects and possible solutions of hunger through newsletters and lectures. Sponsoring and maintaining the soup kitchen is their primary activity.

BENCHMARK:

None.

RELATIVE PERFORMANCE:

Although Good Company does not track quantitative benchmarks for this indicator; it appears that Vassar is on the leading edge in several relevant areas.

PRACTICES TO SHARE:

An effective composting program can reduce food and landscape waste by up to 90%. For guidance, an example of a successful food waste composting program is described on the University of North Carolina at Chapel Hill's Facilities Services' web site at www.fac.unc.edu/wastereduction/recyclables/food_waste.asp.



IV. Additional Document Information

Normalization Guide for Indicators 1 and 2 (Energy and Water Intensity):

Normalization Guide for Energy and Water Usage

Indicators 1 and 2 attempt to show energy and water intensity of the campus by transforming gross usage into values that can be compared with other campuses. This brief Normalization Guide describes the process of “normalizing” or transforming the gross numbers into comparable and benchmarkable values.

The relationship that we are measuring can be thought of most simply as:

$$\text{normalized usage} = \frac{\text{total usage}}{\text{total users}}$$

Half of this is easy, since “total usage” is straightforward: thousands of gallons of water, or millions of BTU equivalent. (The energy total requires simple conversions from kilowatt hours and raw totals of natural gas, fuel oil and other fuels to BTU.)

However, accurately describing “total users” is more difficult. First, there are different kinds of users with different demands on campus resources. Second, the utilization of the campus by these users may fluctuate throughout the year.

We capture both by creating a single measure called Scaled Campus Users (SCUs). Mathematically, this looks like:

$$\text{total SCUs} = \sum_i (\text{number of users})_i \cdot (\text{average FTE for given user type})_i$$

summed across i , representing all i types of users. This requires two sets of calculations: (a) types of users and (b) FTE (Full Time Equivalent) averages for each type.

(a) User calculations consider three groups of users: resident students, enrolled students, and employees. We assume that resident students will account for the highest total usage of energy and water, so we assign a weight of 1 to them; other users are a fraction less than 1. (These will undoubtedly be adjusted when we have a sufficient base of benchmarking data.) Currently, we do all calculations with two sets of weights (see indicator summaries above).

(b) The average FTE weights take into account how much of the year a particular type of user is on campus, adjusting for part-time employees, part-time students, and the length of residence for summer and academic-year students. We also account for summer uses of the campus, when information is available.

Note: This system is an important conceptual tool, but it will become most useful once Good Company has conducted enough assessments to create data for benchmarking. For more information on the normalization calculations, contact Good Company.

Glossary

Aramark – A company specializing in outsourcing solutions in food services, cleaning, and office services for educational institutions, healthcare and businesses. Aramark has several employees on the Vassar campus working management positions in Buildings and Grounds and Dining Services.

B&G – Buildings and Grounds Department

Biomimicry – a science that analyzes nature's best ideas and adapts them for human use. See Janine Benyus' book *Biomimicry: Innovation Inspired by Nature* (William Morrow & Co., 1997).

EH&S – Environmental Health and Safety

Equal Exchange – An organization that uses internationally recognized fair trade standards to balance the inequities found in the conventional coffee trade by building honest partnerships between farmers and consumers.

Fair trade – Ensures that farmers receive a fair price for their crop, farming families benefit from education, healthcare and housing, and the crop was grown using sustainable methods that protect the environment. TransFair's certification label on a package indicates that every step in getting the coffee or tea from crop to cup was monitored and certified to ensure the farmers earned a fair price.

Farm to College - organized Community Food Security Coalition (<http://foodsecurity.org/>) this program helps small farmers around the country to sell to colleges and universities in their locales.

Fragmites – An invasive tall reed grass that replaces natives and has harmful effects to fish-spawning grounds and other wetlands species.

IAQ – Indoor air quality

Integrated Pest Management (IPM) – An ecological approach to suppress pest populations in which all necessary techniques are consolidated in a unified program, so that pests are kept at acceptable levels in effective, economical and environmentally safe ways. Because pest problems are often symptomatic of ecological imbalances, the goal is to plan and manage ecosystems to prevent organisms from becoming pests. For more information on a specific topic see the following websites:

- Horticultural oils:
 - <http://www.ext.colostate.edu/PUBS/INSECT/05569.html>
 - http://www.berkeleyhort.com/roses/r_oils.html
- Insecticidal soaps:
 - <http://www.canr.uconn.edu/ces/ipm/homegrnd/htms/31isoap.htm>
 - <http://gardening.wsu.edu/library/lpro002/lpro002.htm>
- Substitutes for persistent toxic synthetic pesticides:
 - http://www.epa.gov/pesticides/biopesticides/regtools/25b_list.htm

MacBride Principles – A code of conduct requiring American companies to disclose operations in Northern Ireland.

MMBtu – Millions of British Thermal Units, a measure of energy

Payback – A method for calculating when the costs of an investment are fully recouped; does not incorporate the concept of the time value of money.

Pesticides – Substances (normally synthetic chemicals) used to kill unwanted plants and plant predators; general term encompasses herbicides which kill plants (most recently, Vassar has used Round Up and Surflan), fungicides which kill fungi, and insecticides which kill insects.

Glossary (continued)

PETA – People for the Ethical Treatment of Animals

Post consumer recycled content (PCRC) – Products, typically paper, made from material that was previously used by consumers, such as, newspaper or office paper.

Purple loosestrife – An herbaceous perennial of Eurasian origin that became established in the estuaries of northeastern North America by the early 1800's. Poses a serious threat to native emergent vegetation in shallow water marshes throughout the northeastern and northcentral regions of the U.S.

Return on Investment (ROI) – A methodology for calculating a return on an investment considering the time value of money

Roundup – Made from a toxic synthetic chemical, glyphosate, Roundup is an herbicide used to kill unwanted plants in both agricultural and non-agricultural landscapes. Acutely toxic to animals, including humans, adverse effects include medium- and long-term toxicity, genetic damage, effects on reproduction, and carcinogenicity. Categorized as 'extremely persistent' by the U.S. Environmental Protection Agency. For more info see <http://www.pesticide.org/gly.pdf>. For information from the EPA on glyphosate see <http://www.epa.gov/safewater/dwh/c-soc/glyphosa.html>.

Scaled Campus User (SCU) – A "normalized" unit of campus occupancy; a unit measure created by Good Company to allow quantitative comparison of campuses with occupancy compositions with differing proportions of resident students, enrolled students, employees and summer users of various types.

Socially Responsible Investing (SRI) – Traditional portfolio management that asks how a company's social performance affects society.

Surflan – Made from a toxic synthetic chemical, oryzalin, Surflan is an herbicide used to prevent the growth of grassy and broadleaf weeds on warm-season turfgrass. Can persist in soil for up to three years after application, is 'moderately mobile' and often contaminates water. The U.S. Geological Survey found oryzalin in almost half of the rivers, streams and wells tested. Classified by the EPA as a 'possible human carcinogen.' For more info see <http://www.pesticide.org/oryzalin.pdf>. For detailed information from the EPA on oryzalin see <http://www.epa.gov/iris/subst/0083.htm>.

Tree of heaven – A prolific seed producer that grows rapidly and can overrun native vegetation. Once established, it can quickly take over a site and form an impenetrable thicket. They also produce toxins that prevent the establishment of other plant species. The root system is aggressive enough to cause damage to sewers and foundations.

Universal waste – A specific category of hazardous waste that includes batteries, pesticides and thermostats.

Volatile Organic Compounds (VOC) – Some organic compounds occur naturally and are found in all living things, but others, such as those found in many paints and finishes, are unstable and produce a vapor or gas at room temperature; these are considered volatile organic compounds. Some VOCs are dangerous to humans and plant processes and many have a more complicated effect – the formation of ozone and smog.

References (Vassar College documents)

1. Vassar College Briefing Book, dated March 19, 2001 by Aramark Facility Services. Provided by Patrick Miller.
2. The Governance of Vassar College 2001-02. Provided by Betsy Eismeier.
3. Classroom Master Plan, Vassar College, dated July 1999 by Ellenzweig Associates, Inc. Provided by Patrick Miller.
4. Vassar College Utility Systems Master Plan – A Comprehensive Plan to Address Current Exposures and Future Needs, dated August 21, 1996 by Vassar College Buildings and Grounds Services and Facilities Resource Management (an Aramark Company). Provided by Patrick Miller.
5. Vassar College Landscape Master Plan, Final Report, dated September 1, 1988 by Sasaki Associates, Inc. Provided by Jeff Horst.
6. Vassar College, Buildings and Grounds Services, Parking Survey, dated January 14, 2002. Provided by Jeff Horst.
7. Vassar College, Residential Facilities Master Plan, dated May 2000, prepared by Herbert S. Newman and Partners AIA, PC. Provided by Betsy Eismeier.
8. Guidelines for Designs at Vassar College, dated August 28, 2001. Provided by George Brengel.
9. Vassar College Arboretum, revision dated July 1999. Provided by Office of Campus Activities.
10. Vassar College Department of Buildings and Grounds Services, Comprehensive Facilities Management Services for the Eight Year Period FY 84/85 to FY 91/92 and 1991/92 Annual Operating Report, dated April 1993, prepared by Facilities Resource Management Co. Provided by Patrick Miller. Referred to in this document as FRM Facilities Report 1993.

Special note to B&G and the Sustainability Committee

Save this list of references. They were of great value in our assessment of Vassar College. However, many people at Vassar are unaware of, unexposed to or underutilizing these resources. They are not available in any one location.

V. Campus Sustainability Performance: Methodology

What does it mean to be sustainable? There is no definitive answer, but we begin this report by explaining how we measure campus progress in the direction of sustainability. In just two pages, this section briefly provides:

- A broad working definition of sustainability
- A description of how Good Company selects its indicators
- A note regarding our focus on vision and priorities

Defining Sustainability

Sustainability is a broad and complex concept with countless definitions. A good starting point is the most acclaimed definition, from the Brundtland Report of 1987, also known as *Our Common Future*:

“Sustainable development is that which meets all the needs of the present without compromising the ability of future generations to meet their own needs.”

So, from a campus perspective, what are our needs? We approach campus sustainability by addressing three areas: environment, human resources, and community and core function. The health of the natural environment is crucial to our own health and survival, and campus management and operations have a large potential footprint on local ecology. In addition, a university or college consists of people, so the health and well being of the campus users and workforce must be addressed. Last, we acknowledge that, beyond its people and natural environment, an institution must achieve its core functions while respecting the community in which it is located.

For some, this scope is a surprise: “sustainability” is more than the “environment”. Instead, the assessment stems from a more integrated view of our relationships to the natural world, to each other, and to the institutions and communities of which we are a part.

The Selection of Indicators

To apply these notions of sustainability and assist campuses in finding a pathway to a sustainable future, Good Company has developed a set of indicators, the *Sustainable Pathways Toolkit*. This is a tricky process: choosing what to measure is a challenge of balancing the needs to look at what matters, to consider diverse factors, and to stay within the time and resource constraints of an assessment. Our work is guided by a few key ideas: meaningful, feasible and measurable.

Meaningful indicators capture major impacts around which there is broad consensus. In short, we target those factors that contribute most to the overall impact or footprint of an institution. Everything “matters” in some sense, but we cannot measure everything. Our focus on *meaningful* indicators is our attempt to select major factors and key proxies.

Ultimately, our assessment should lead to *feasible* action. This means that we target areas where campus stakeholders can realistically make a difference without prohibitive cost or effort. A particular long-run benchmark might not be immediately within reach, but all of our indicators address areas where an institution can potentially improve.

Last, our assessment goes after *measurable* indicators and impacts. To the fullest extent possible, we aim for clearly defined quantitative and qualitative measures. And while almost anything can be measured, our focus is on measurement that leverages the greatest meaning and insight with the least outlay of time and resources.

Clearly, there is tension among these three principles; that is the balancing act of our assessment. For a more in-depth discussion of how Good Company selects indicators, please see the *Sustainable Pathways Toolkit: Technical Manual*, available on request from Good Company.



Vision and Priorities

No one achieves sustainability overnight; our goal, whether as institutions, as individuals or as a society, is to make progress in the right direction at the fastest pace possible, without compromising our other aims. This requires a balancing act between what is ideal and what is feasible, and the challenge of figuring out how to get things done.

But our predicament – that is, starting so far from any true place of sustainability – challenges us to another balancing act: between setting short-run priorities for action and maintaining a coherent long-run vision. The goal of our Toolkit is to provide both short-run stepping-stones and long-run targets, and we describe these to the best of our ability for each of our indicators. The specific paths for many indicators are still to be discovered – How can we achieve a closed-loop or zero-waste college? What kind of environmental policy should a campus have? How much energy is it okay to use, and from what sources? What benefits should a campus offer its employees? – and we do not provide final answers here. But the long-run target – that is, the vision – provides a compass for the journey.

Any document of this length and breadth can be misused, so we lay out a clear caveat here: our recommendations are not a complete pathway to sustainability. Rather, they represent our suggestions for taking action now and preparing for action in the near future. We encourage Vassar College and all institutions of higher education to maintain a realistic focus on what can and should be done immediately, while building a long-run vision and keeping it in focus.

¹ This list of criteria draws from the wood products purchasing policy of the College of the Atlantic, Bar Harbor, Maine (<http://www.coa.edu>).