

THE ART OF SUSTAINABILITY



Sustainability Coordinator Training Manual

Offices and Departments

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Cover Image: El Anatsui, *Hovor* (detail), 2003, aluminum and copper wire, 609.6 x 548.6 cm, Hood Museum of Art, Purchased through gifts from the Lathrop Fellows. Photography by Noel Brown.

1. Introduction

Welcome to Dartmouth College's first-ever Sustainability Coordinator Training Retreat: The Art of Sustainability. You are making history. The intention of this retreat is to begin the first round of identifying and training Sustainability Coordinators. The goal is to eventually identify and train a coordinator for every office, dorm and Greek house. Once you are trained, you will be empowered and supported in leading your office in establishing action steps specific to your situation. If we were to give you a list of 100 things to do to 'Save the Earth,' you might yawn and simply deposit the list in the 'round file'. However, by inviting your office into a creative brainstorming and visioning session that leads to identifying hot action items and first-steps, those who participate are more likely to get excited and follow-through (having been intimately involved in the process). If a sustainable culture is to become daily practice at Dartmouth College, it will take wide-spread participation, intelligence, caring and motivation. This retreat begins the process.

Briefly, for a person, office, institution or nation to be sustainable, they must use the Earth's green life (known as biomass or net primary productivity) at a rate slower than natural production. As ethical creatures we can be inspired to share Earth's biomass with other species, people and future generations. Further, common sense and science informs us that we must phase out the use of all non-renewable resources and not emit anything toxic into the biosphere. I know this is a mouthful, but it helps to understand exactly what we mean by sustainability.

The issues facing humanity and planetary ecosystems are profound and arguably the defining challenges of our time.

The disparity between the richest and poorest billion people is now 250:1. Species extinction is 1000 times faster than natural rates. Wars over resources are flaring as is desertification, deforestation and the collapse of fisheries. The clearest identified trend is exponential growth of human population and consumerism on a finite planet. If we call 1-800-NASA and ask how many livable planets exist, they will say 'one.' If we then ask, is this planet growing in size, they will say, 'hold on, let me check.' When they return to the phone, they will say, 'No, it is not growing.'

Dr. James Hansen, the director of the NASA Goddard Institute for Space Studies and Adjunct Professor of Earth and Environmental Sciences at Columbia University's Earth Institute stated "I think we have a very brief window of opportunity to deal with climate change ... no longer than a decade, at the most." With nineteen of the hottest 20 years on record having occurred since 1980, his models indicate that with status-quo burning of fossil fuels global temperatures will rise 3.6 to 7.2 degrees F. Current warming has resulted in species of plants, animals and insects migrating toward the North and South Poles at about four miles per decade in the second half of the twentieth century. Meanwhile, isotherms, or temperature zones have been moving pole-ward at a rate of about thirty-five miles per decade. In Greenland, annual icequakes doubled in the late 1990s and doubled again by 2005. The present atmospheric concentration of carbon dioxide (CO₂) has not been exceeded during the past 420,000 years. When considering the future of earth and human systems, option 'status quo' seems to contain the most risk.

A cartoon shows a man standing on Earth throwing a beer can over his head. It circles the globe and bonks him in the fore-head.

These planetary trends have local corollaries. For example, CO₂ emissions at Dartmouth College from heating fuel and purchased electricity have increased by 66 percent from 109.3 (10⁶ lbs) per year in 1990 to 164.8 (10⁶ lbs) in 2005. Meanwhile, the Kyoto protocol set reduction targets at seven percent below 1990 levels by 2012, or 101.6 (10⁶ lbs) for Dartmouth. Despite efforts to conserve energy at Dartmouth, this increase slightly outpaced total USA GDP growth between 1990 and 2005 (61 percent). Other trends at Dartmouth include increased use of energy and generation of garbage.

The Dartmouth Sustainability Initiative understands that facing these issues squarely can be overwhelming. However, we also know that applying ourselves to identifying solutions will be ultimately rewarding and will take our best capacities. Further, by changing ourselves first, and having fun with it, others will take us seriously. Actions do speak louder than words, and it is our personal and collective daily habits that are often at the source of global issues.

Dartmouth is in the business of educating individuals who will take leadership in making the world more sustainable regardless of their chosen fields. After this retreat we invite you to contemplate your unique contribution to a sustainable planet.

2. Retreat Agenda

- 2:00: Arrival of Participants at the Hood Museum of Art
- 2:00 – 3:00: Exhibition
 - o Welcome
 - o Tour *El Anatsui: GAWU* Exhibition
- 3:00 – 3:10: Refreshments catered by Taste of Africa – Faculty Lounge

Sustainability Coordinator Training

- 3:10 – 3:30: Sustainability at Dartmouth
- 3:30 – 3:40: Tel-a-vision – Envisioning a Sustainable Future
- 3:40 – 3:50: Develop Five Categories
- 3:50 – 4:10: Break into Groups
 - Goal: To develop an action plan of tangible projects accomplishable in one year.
 - Instructions:
 - o Brainstorm as many ideas as possible – write down ALL ideas: 5 Min.
 - o Pick the best/most feasible 3 ideas: 5 minutes
 - o Develop a plan: 10 minutes
- 4:10 – 4:25: Group reports
 - Brief on 3 items (2 minutes per group)
- 4:25 – 4:40: Four Levels of Action
- 4:40: Wrap-up, Questions, and Evaluation
- 4:50: Closing – Culture Shift

3. *El Anatsui: GAWU* Exhibition

On View at the Hood Museum of Art

January 6–March 4, 2007

This exhibition features works by El Anatsui, an artist who was born in Ghana but has lived in Nigeria for the past twenty-eight years, making his art and teaching at the University of Nigeria, Nsukka. Through his teaching and his art he has influenced a generation of artists there, as well as further afield as he exhibits internationally.

El Anatsui has said that “Art grows out of each particular situation and I believe that artists are better off working with whatever their environment throws up.” Over the years he has worked with paint, wood, clay, and metal to make his art, but most recently he has used trash—large quantities of discarded metal objects—to create his art.

The seven large sculptures in the exhibition are all made out of trash or reused materials that the artist has transformed into art. As well as being visually compelling, Anatsui’s sculptures comment upon broader concerns, particularly the adverse effects of globalization, consumerism, and waste in Africa today, and sustainability issues. Many of his works also refer to and celebrate Africa’s rich artistic and cultural heritage through visual and other references.

Free Tours of the *El Anatsui: GAWU* exhibition are available by appointment for any group of five or more. Contact Adrienne Kermond, the Tour Coordinator at the Hood, with questions or to schedule a tour.

The Hood Museum of Art is also offering a series of free lectures and gallery talks in conjunction with the exhibition. For a complete listing of these events, visit the Hood’s Web site at <http://hoodmuseum.dartmouth.edu> and click on the CALENDAR.

4. Sustainability at Dartmouth College

The Dartmouth Sustainability Initiative (DSI) is sponsored by the office of the Provost and is operated by Jim Merkel and several Sustainability Interns. DSI’s task is to advance Dartmouth’s efforts to become a sustainability leader in higher education by working with administration, staff, faculty and students to provide the knowledge, skills and motivation that will integrate sustainability values and practices into the College.

Achievements in Sustainability at Dartmouth College:

- Energy Reduction and Diversification
 - Each year the Facilities Operations and Maintenance Department (FOM) in cooperation with the student group ECO and DSI focus attention on campus-wide conservation awareness.

- Recent steps include lowering building temperatures, doing the annual student dorm energy challenges and diligently turning back temperatures when buildings are not occupied.
- DSI designed and printed 5,000 new light-switch stickers branding the new logo and advertising the website.
 - DSI developed an Energy Feedback poster that reports electricity, heat and water in 50 buildings as compared to last year and to the average building use on campus.
 - DSI is evaluating the feasibility of solar panels on several existing and new buildings.
 - Sustainable Dining
 - In the fall of 2006, Home Plate opened its doors as the campus's most sustainable dining establishment. The changes include a waste-free condiment bar, expanded fountain including a milk machine, bulk snacks, 100% recycled bleach-free napkins and elimination of many packaged items. Diners are encouraged to use washable china and silverware and must request a takeout container for "to go" orders. Recycling and composting have been expanded both behind the scenes and in the dining hall and trash weights have dropped significantly.
 - Food Court has begun to make similar changes.
 - The Sustainable Dining Club (SDC) signed up 140 members in the Fall of 2006 which allowed them to eat in Collis Café and Homeplate without creating any waste. Each member was issued a sustainable dining kit which included use of washable take-out containers with lids, a Nalgene bottle, an eco-mug with a carabineer, a cloth napkin and silverware.
 - Indicators
 - The Dartmouth Sustainability Initiative interns produce an annual Sustainability Report which includes electricity, steam, and water use by building. It also includes amounts of trash, emissions, consumption of fossil fuels including #6 fuel oil, #2 diesel, kerosene, gasoline and propane and Dartmouth's ecological footprint (impact on environment.)
 - New Buildings
 - The Office of Planning Design and Construction (PDC) at Dartmouth has developed an integrated design approach to its new buildings which include performance-based design standards and commissioning.

Sustainable Dartmouth is a student moderated forum where environmental groups on campus communicate and collaborate with each other on sustainability initiatives. Groups represented include: The Progressives, Field and Farm (the Dartmouth Organic Farm), the Big Green Bus, ECO, the Dartmouth Local Food Project, The Dartmouth Sustainability Initiative and the Green Magazine.

5. Getting Started

As the new Sustainability Coordinator for your office, we would like to first say that you don't have to be an expert on sustainability! What we are encouraging you to do is engage the collective skills, knowledge and experiences of your friends and acquaintances in your department. This manual does include a section titled "Sustainability Facts and Tips" and abundant resources for you to learn more, which we do encourage you to do.

During this retreat, we will model the entire process of leading a retreat in your office. This is the fundamental tool we are offering – a democratic and inspirational session that begins with vision and leads to action. The process we will work through has been well tested over the years. It works with large and small groups, with people of all political persuasions and results in definitive and unique actions and draft plans.

Over the course of your time as Sustainability Coordinator, you will learn practical skills of saving energy and reducing waste as well as group leadership techniques. Regardless of your chosen occupation, we encourage you to grapple with how to shift practices in your field of work toward sustainable ones.

6. Leading a Retreat

To take a group from vision to action requires creating a mood of open mindedness and safety. To accomplish this, you should start by explaining very simple ground-rules up front and stick to them. As the facilitator, you will ensure all voices are heard and that the process is not dominated by strong personalities. We will include specific suggestions that can make the process fun yet productive.

Let's begin by assuming you have been through this training retreat and have returned to your office. At a departmental meeting, you can ask to have five to ten minutes on the agenda to report on the retreat. You might explain briefly why you are personally interested, summarize the issues both globally and locally and with some enthusiasm, share the creative potential and the thrill of challenge in actually making radical changes to ensure we have a livable, desirable, planet for us and future generations. Then you can hand out the cards in the appendix marked "Sustainability Action Options." (Photocopy the number of sheets you need and cut them to size.) While you explain the four options, ask people to check the box that most interests them. Collect the cards when you are done speaking. Section 6.1 is an example of the cards, which can be found in section 9.4 of this packet.

6.1 Sustainability Action Options:

- Strong Interest:** I'd like to attend a Sustainability Retreat for our office to develop a Sustainability Action Plan. (3 hours long)
- Medium Interest:** I'd like to attend a condensed Sustainability Session – Vision to Action. (2 hours long)
- Mild Interest:** I'd like to complete a Sustainability Survey to let you know about the steps I'm willing to take to move our office toward sustainable practices.
- Pressed for Time:** I support this effort but have little time. However, I would like to help in some way. If there is one thing I'd like to see changed around here it is: _____
Blitz me when you need help.

Blitz: _____

6.2 Power Point Presentation

The Dartmouth Sustainability Initiative will provide each Sustainability Coordinator with a Power point Presentation that they can customize to their liking.

6.3 Tel-a-vision – Envisioning a Sustainable Planet (5 min.)

We will assume you have strong interest in your office and will be leading a 3 hour-long retreat in coordination with one of the exhibits at the Hood Museum of Art. If your co-workers would like a shorter event, or the Hood is not available, adjust accordingly. The first hour is spent touring the exhibit with an education intern working with the Hood staff. Through this process, the intention is to widen the view of sustainability to social and ecological issues. Further, by experiencing the Arts as a medium for social change, by extension, other studies such as business, engineering, philosophy, earth sciences or politics all can contribute to a sustainable future.

Feel free to be creative and develop your own one-hour experiential introduction which can include an adventure in the forests, an art project, a game – some activity that engages the mind and intuition in sustainability.

When the group returns from the exhibit and people have settled, you will explain how Tel-a-vision works. It is a rapid-fire idea session where people are encouraged to think outside the box of North American culture. The guidelines for brainstorming of visions are simple:

- 1. Raise hands and when your turn comes, say your idea in as few words as possible.**
- 2. All ideas will be summarized and written down without comments or discussion.**
- 3. Anything is possible!**

Ask for two assistants with good handwriting to record the ideas quickly. Prepare the flipcharts in advance by sticking medium sized post-its all over the flipchart paper. (The goal is to get as many ideas down in 5 minutes or less without any cross-talk that might inhibit people’s creativity, one idea per post-it.) You will ask the group to imagine that the world has become completely sustainable. Anything is possible. In this sustainable world of your dreams, what would you be seeing? What would people be doing? What would you see on the T.V. or hear on the news? When 5 minutes are up, or when people are slowing down, wrap it up by saying “let’s take down one or two more visions.”

6.4 Envisioning a Sustainable Office (5 min.)

Transition quickly to: Now, let’s imagine that our office has become completely sustainable. In a world where anything is possible, what would you be seeing? What would you be hearing? How about the smells? Now turn to someone sitting next to you and for one minute, tell them about your dream sustainable work environment. I’ll let you know when one minute is up. Then switch such that the one who was listening gets to talk. At the end of this minute, interrupt firmly but gently by saying; Ok... let’s come back together. If there was a lot of loud discussion and ideas, you can say something like, “I could have left you all to solve the world’s problems.”

Request two new note-takers at the easels, again have blank post-its stuck all over the easels. Now ask, “Can you say in a word or two what you heard from your partner?” Take down smells, sights, tastes

and sounds for about 5 minutes or until it slows down. Thank people for their creativity or cooperation or the spirit they brought to thinking outside the box.

6.5 Develop Five Categories (5 min.)

Now you will ask for four volunteers while people take a five minute break. This team will start with the first list and ask;

1. Does the second item belong with the first item? Yes, stick them together but overlapping so you can read them as you group them. No, create a second category. Does the third item belong with any previous categories, forth item and so on until you have worked through all the brainstorm sheets for both your office and the planet. Move quickly and realize that there may be overlap, but that is ok. Just do it the best you can. Once you are done, see if you can combine things down into 5 categories. If there are a few ideas that fall out of these categories, *either* encourage the group to stick to five categories or form extra groups. Make up a sign on one-sided scrap paper for each of the five categories and place one sign in the middle of each table. Take all the visions and ideas for each category and place them on the corresponding tables. Place an equal number of chairs around the tables the total equaling the group size.

6.6 Break-out Groups (5 min.)

When people return from break, ask them to walk about the room looking over the five categories and visions, then select a table that most interests them. Once the chairs are taken, go to your second choice and so on. Each break-out group will quickly select a facilitator, a note taker, a reporter and a time keeper. Facilitators will ensure everyone gets to talk and will help move from a brief discussion, to deciding on three action items, to developing a plan. The note taker will keep notes on the discussion and help the facilitator with moving forward. The time keeper will also gently help move things forward giving periodic updates of how much time is left.

6.7 Decide on Three Action Items (10 min.)

Once the groups have formed, you can begin by saying something like; your task, should you choose to accept, is to come up with three action items. To do this, the facilitator will ask the group to go around the table as each person gets to offer one idea of a project in their office that combines as many of the visions of both a sustainable planet and office as possible. The guidelines are:

1. You can skip your turn if you have not thought of an idea yet.
2. Each person says his/her idea for a project in as few words as possible. Place each idea for an action item on a Post-it.
3. The ideas can be visionary, but should be possible to accomplish in one year. Also, they should be something the author is authentically excited about.

After going around the table two or three times or after people have run low on ideas, see if any of the ideas can be combined into one. When two minutes are left, the facilitator asks the group to narrow the ideas down to one or two doable projects either by voting or tallying how many would be willing to

offer some energy to each project. During a one minute stretch break, each person initials the one idea they want to work on first.

6.8 Develop a Plan (10 min.)

After the stretch break, the group returns to draft a mini-plan for the most popular idea. The facilitator will ask the group one question at a time. The note taker will take detailed notes.

1. What is our major goal?
2. What are the steps to making it happen?
3. Who do we need to talk with to get more information, support, resources, approval etc?
4. How would we know if we are successful? Can we establish a measurable goal?
5. How can we make this project fun and exciting?

This plan is really only a start. The team should set a time in the next week to meet for a hour to further develop the plan. The facilitator can request that people sign-up to take on small task that move toward the goal.

6.9 Group reports (2 min. each, 15 min. total)

The note taker will provide brief highlights of the projects ideas and outline the plan for the most popular project.

6.10 Wrap-up and Questions

Thank people for sticking with the process and taking the time to participate in this retreat. Ask if people have any questions about leading the retreat. Fill out evaluations.

6.11 Closing – Culture Shift Happens

This is where you will want to have a positive story or quote that is meaningful to you and inspires people to work together toward a sustainable planet. Thank people for coming.

7. How to Schedule a Retreat

You can lead a retreat for your office on your own if you feel comfortable doing so. If your office would like support in leading a Sustainability Retreat contact Jim Merkel (Dartmouth's Sustainability Coordinator) at james.s.merkel@dartmouth.edu. If your office would like to have a shorter retreat, decide on a location and develop an outline of the components of the longer retreat that you found most effective. Then blitz the Dartmouth Sustainability Coordinator for any support you may need.

7.1 Logistics Checklist

This is a checklist designed to guide you through the process of planning a retreat.

1. Decide on a date and reserve a location.
2. If you'd like help running the Sustainability portion of the retreat, blitz Jim Merkel.
2. Encourage co-workers to come. Bring the retreat up at meetings. Secure commitments to the retreat in an uplifting, challenging and positive way.
3. Decide on the proper content for your retreat.
 - a) You may want to use a survey (found in section 9.3 of this packet) to find out what your co-workers are most interested in.
4. Arrange to have the proper materials.
 - a). Tables and chairs
 - b) A large space to write ideas on, such as a dry-erase board
 - c) Markers, pens and pencils
5. If you're catering food, make the proper arrangements to have it there on-time and ready to go.
 - a) Are tables and serve-ware provided by the catering service?
 - b) What is the packaging like? Will you have to have appropriate recycling, composting, and waste bins at the retreat?
6. If you're cooking your own food, have it prepared in advance and stored safely.
7. Print out in advance the appropriate materials for your co-workers.
 - a) Evaluation form
 - b) Sustainability tips or brochure
 - c) Sign-up sheet for particular activities
8. Make your retreat sustainable!
 - a) Re-use paper
 - b) Use washable china and silverware

8. Sustainability Facts and Tips

8.1 Recycling

(Regular and Hazardous Waste)

Facts:

- The ecological footprint for Dartmouth's trash is 5.3 acres while only 4.6 acres is available for each person's entire lifestyle. (An ecological footprint is the Earth area needed to source materials, manufacture, transport and dispose of each disposable item including forest area to sequester CO₂ emitted in all processes.)
- Using recycled materials reduces the need to cut, extract, process, refine and transport natural resources such as timber, crude petroleum and mineral ores.
- According to the U.S. EPA, over 20 million personal computers became obsolete in 1998 and only 13% were reused or recycled.
- Electronic circuit boards, batteries, and color cathode ray tubes (CRTs) can contain hazardous materials such as lead, mercury and hexavalent chromium. If improperly handled or disposed, these toxins can be released into the environment through landfill leachate or incinerator ash.
- Toxic pollution from landfills -- including cyanide, dioxins, mercury, methane, hydrochloric acid, sulfuric acid and lead -- escape into the air and leaches into groundwater.

What you can recycle at Dartmouth:

- Building custodians manage recycling collection. There are pick-ups at every office.
 - Paper: mix all paper together including white paper, colored paper, window envelopes, post-its, manila folders and envelopes, newspaper, glossy magazines, Xerox drawings, boxboard, telephone books, copy paper wrappers. No plastic wrappers.
 - Glass: all colors.
 - Aluminum cans: no liquid residue.
 - Plastic: PETE #1-7, no food/liquid residue.
 - Tin cans: no food residue.
 - Aluminum, plastic and tin can all be mixed together – ensure there is no food/liquid residue on them.
 - Cardboard: breakdown all boxes. No waxed cardboard or Styrofoam.
 - Styrofoam packing peanuts: place in a clear plastic bag and tie at the top.
 - Clothing: place in a clear plastic bag and tie at the top.

- Have clearly labeled bins in your office so that people know what to separate and what to keep together.
 - If you need recycling bins in your area please contact your custodian or blitz “Dartmouth Recycles.”
 - If you have a large volume of bulk recycling please blitz “Dartmouth Recycles” to arrange for extra bins and pickup.
- Make sure to dispose of hazardous wastes properly.
 - Put laser toner cartridges and florescent light tubes in their original boxes, mark them “recycle” and put them out with regular recycling.
 - Blitz “Dartmouth Recycles” to get free mailers or pick-up for the following items: inkjet cartridges, batteries, transparencies, CDs and diskettes, cell phones, pagers, PDAs, bicycles.
 - Blitz “Procurement Services” for pickup of used computers, electronic equipment and appliances.
- Donate old office material and furniture to charity.
- Have an area where employees can leave and take used office supplies such as binders, scissors, padded envelopes and file folders.

Resources:

- *FO&M Recycling Website*
<http://www.dartmouth.edu/~fom/services/solidwaste/dartmouthrecycles.html>
- *Aluminum Recycling in New Hampshire*
<http://newhampshire.earth911.org/master.asp?s=lib&a=aluminum/facts.asp>
- <http://vtrecyclers.org/>
- *Greater Upper Valley Solid Waste District (GUVSWD)* www.guvswd.org/business
Contact: John Fay at 296-3688 or guvswd@valley.net
- *New American Dream* www.newdream.org/cleanschools/safelist.php
This link is for certified safe cleaning products
- *Vermont Environmental Assistance Program (VEAP)* www.veap.org/prevention.shtml
1-800-464-7232
- *Managing Hazardous Waste in Your Home: A guide to Safe Disposal and Less-Toxic Alternatives.* Produced by the Vt. Department of Environmental Conservation. To obtain a booklet contact Tom Benoit at 802-241-3472 or thomas.benoit@state.vt.us

8.2 Energy

Facts:

- Though accounting for only 5 percent of the world's population, Americans consume 26 percent of the world's energy.
- Between 1998 and 2005 Dartmouth's CO₂ emissions increased by 42 percent.
- Dartmouth's energy footprint per person is 7.35 acres (forest area need to sequester the CO₂ from burned fuels).
- Only 4.5 acres of bioproductive space exists for each person not including the needs of other species.
- Replacing one incandescent light bulb with an energy-saving compact fluorescent bulb means 1,000 pounds less carbon dioxide is emitted to the atmosphere and \$67 dollars is saved on energy costs over the bulb's lifetime.

What you can do:

- Turn-off lights when you leave your office or an empty common space.
- Switch to energy-efficient compact florescent bulbs.
- Turn off you computer when you're not using it – it does save energy!
 - Set a conservative sleep mode on your computer. While running, a laptop uses on average 30 watts/hour. If left on at a night, this totals 360 wasted watts/night, or 131,400 watts/year. When left in sleep mode, computers use on average 3 watts/hour—which totals 36 watts/night (90 percent less than leaving it running) but still wastes 13,140 watts/year.
- Report drafty doors, windows and areas to your office custodian.
- Adjust the thermostat instead of opening the window to regulate the temperature.
- Turn off the A.C. if you can and open the window on nice days in the summertime.
- Use a ceiling fan in the summer: it uses 98% less energy than A.C. and can make you feel up to 6 degrees cooler.
- When buying office equipment such as computers, fax machines, and copiers, look for EPA energy star certifications. (www.energystar.gov)
- Turn off office equipment over night and on the weekends.
- Choose photocopiers, printers and computers that have energy-saving standby features.
- Make conference calls instead of driving to meetings whenever possible.

Resources:

- <http://www.myfootprint.org/> Calculate your ecological footprint and try to reduce it.
- <http://www.awwa.org/waterwiser/> Water conservation.

- <http://www.rmi.org/> *Water and Energy conservation*
- <http://www.encyvermont.com/pages/Common/askrachael/> Direct your questions to Rachael – great site!
- www.greenlivingnow.com *Green Living Now, LLC--The Trusted Online Source of Truly Organic and Natural Products*: Huntington, VT 05462 802-434-3813, 1-888-GREEN-08.
- *Efficiency Vermont* www.encyvermont.com/pages/Business/ Energy saving tips, building efficiently, energy-efficient equipment and services, lighting and HVAC.

8.3 Paper

Facts:

- Using recycled paper uses 60% less energy than manufacturing paper from virgin timber.
- One ton of uncoated virgin (non-recycled) printing and office paper requires the use of 98 tons of various resources and uses 24 trees. If this paper is 100% recycled content, no new trees are used.
- Producing recycled paper causes 74 percent less air pollution, 35 percent less water pollution, and creates 5 times the number of jobs as producing virgin paper does.

What you can do:

- Buy used books.
- Print double-sided.
- Use bleach-free 100 % post consumer waste recycled paper – Procurement Services carries it.
- Reuse paper that has been used on one side. Possibilities include notes, drafts, and sketches.
- Put one-sided paper back into your personal or office printer. There are also one-sided paper drop boxes by most of the greenprint stations around campus.
- Buy a fax machine that uses bond paper instead of thermal, rolled paper because thermal paper cannot be recycled.
- Edit documents on your computer instead of printing them.
- Adjust page margins, line spacing and font-size to reduce page-length for documents that must be printed.
- Use a dry-erase board instead of sticky notes to write reminders to yourself.
- Buy supplies with the maximum post-consumer recycled content available. All of the local bookstores sell recycled notebooks, flashcards, and bond paper.
- Use undated, erasable wall calendars.
- Reduce fax-related paper waste by using reusable cover sheets, cover sheets with space for a short message, or cover sheets that are half-size.

- E-mail memos instead of printing and distributing them.
- Use presentation software or a dry-erase board instead of a flip chart for presentations.

Resources:

www.wheelockbooks.com
<http://dartmouthbooks.bkstore.com/>
www.amazon.com *Find all sorts of used books and texts!*
<http://eetd.lbl.gov/Paper/>
http://www.foe.co.uk/living/tips/reuse_paper.html
<http://www.udel.edu/topics/printless/how.html>

8.4 Breaks and Lunches

Facts:

- The total solid waste per capita in 2005 at Dartmouth was 867 pounds.
- The total trash footprint per capita in 2005 at Dartmouth is 5.3 acres. This is greater than the total lifestyle footprint for people from 95 nations including Venezuela.
- Eating local, organic and in-season food can halve its footprint.
- The footprint to supply one pound of vegetables per month equals 33 square yards. For chicken; 335. For beef; 1,180. For fish; 2,798.
- Almost 60 percent of the municipal solid waste produced in the United States (including paper) is compostable material.
- Food is the #1 least recycled item of all waste materials.
- Landfills contain more food and paper waste than diapers, Styrofoam, and tires combined.

What you can do:

- Choose foods without excess packaging.
- When possible, compost your leftover food, milk cartons and cardboard take-out containers. If you don't have a compost bin in your office, buy one. Compost can be picked up by Dartmouth. Contact FOM (<http://www.dartmouth.edu/~fom/services/>) for more information.
- Bring a Nalgene or reused water bottle to work instead of buying a new water-bottle every day. Fill it up at one of the numerous water fountains or taps around campus.
 - Hanover town just installed a high-end water filtration system, so tap water is safe to drink.
- Keep reusable cups, plates, bowls and silverware in your office kitchen. Ask office staff to donate unused items from home. Keep kitchen attractive and hygienic to encourage its use.

- At meetings and when catering events, use washable china and cloth napkins and have labeled compost and recycling bins. Ask caterers to deliver food in reusable containers. Show that your office takes sustainability seriously.
- Use a waste-free coffee system (with stainless steel coffee filter).
- Use personal mugs for coffee and have additional ones available for visitors.
- Pack your lunch in reusable containers.
- Buy items such as coffee, cream and sugar in bulk, instead of individual packets.

Resources:

- <http://www.dartmouth.edu/~sustain/dining.html> Read about Dartmouth’s Sustainable Dining
- www.compostguide.com
- www.mastercomposter.com

8.5 Getting Around

Facts:

- The average American spends 72 minutes a day driving.
- The United States consumes about 17 million barrels of oil per day, of which nearly two-thirds is used for transportation.
- A car that gets 20 miles per gallon (mpg) emits approximately 50 tons of global-warming-inducing carbon dioxide over its lifetime.
- Car driving is typically an American’s largest footprint item. Using 40 gallons of fuel per month equates to a 4 acre footprint.

What you can do:

- Find an alternate way of getting around campus.
 - Walk. It is said that you can reach any area of campus in seven minutes from the center of the green.
 - Bike.
- Find an alternate way of getting to campus. This can be free, or even lucrative:
 - Dartmouth offers incentives for faculty to abstain from parking on campus: “Eligible faculty and staff enrolled in the buyout program will receive a parking buyout of \$180 per year if they live within approximately 3/4 of a mile of the Green (the

[Village Zone](#)); or \$360 if they live beyond the 3/4 mile limit.” Visit <http://www.dartmouth.edu/~fom/services/parking/> for more information.

- All Dartmouth Employees and Students may take the Advance Transit, the Stage Coach, and the Town and Country bus systems traveling throughout the Upper Valley FREE.
- If you have to drive, purchase a hybrid or fuel efficient car. (You also get tax credits!)
- Take a train (www.amtrak.com) or bus (www.greyhound.com) instead of flying.

Resources:

www.advancetransit.com *Bus schedules for routes around the Upper Valley*

Transfer Services from local cities:

Dartmouth Coach (Service to Boston).....800-637-0123 or 603-448-2800 www.concordtrailways.com

Vermont Transit (Service to Manchester airport and more)..... 800-552-8737 www.vermonttransit.com

Dartmouth Regional Airport Service..... 800-395-3479 or 603-641-4777

Upper Valley Sedan Service..... 866-632-7570 www.uppervalleysedan.com

George’s Shuttle.....802-263-5627 or 800-208-3933 www.georgesshuttle.com

North Country Auto Rental.....603-448-0538 (rental cars for students 18-21, airport shuttles)

Lebanon Taxi..... 603-448-7027 (long distance available)

Big Yellow Taxi..... 603-643-8294 (airport and long distance)

9.2 Eco-Audit (V.E.I.)

CARBON LITE CHECKLIST

Instructions: Please fill out this work sheet. We will use it as a basis for a conversation on ways to reduce, reuse, recycle and use fewer toxics and less energy at work and home. **Put a check in the space if the answer to the question is yes.** This checklist is for your use only.

RECYCLING

1. ___ Does your office recycle:
 paper? newspapers? magazines? box board? cardboard?
2. ___ Does your office recycle non-deposit plastic bottles (water, juice and other small-mouthed bottles?)
3. ___ Does your office recycle non-deposit glass bottles and jars?
4. ___ Does your office recycle non-deposit aluminum and metal cans?
5. ___ Does your office redeem deposit containers?
6. ___ Does your office use unbleached (chlorine free), post-consumer recycled content:
 Facial tissue? Copy Paper? Paper towels? Toilet paper?
7. ___ Does your office compost food scraps?
8. ___ Does your office compost yard, garden and other organic waste?

REUSING

1. ___ Is most of the paper in your office used on both sides?
2. ___ Are copiers and printers set up to print on both sides?
3. ___ Does your office use 2nd hand scrap paper?
4. ___ Is any of your office furniture 2nd hand?
5. ___ Do you reuse containers to bring your lunch?
6. ___ Does your office use reusable dishes? mugs? utensils? hand towels?

REDUCING

1. What percentage of office communication is your office paperless? ___%
 Most records are paperless Most e-mails are not printed
 Most memos sent via e-mail
2. ___ How much trash does your office discard each week? Size of container _____
 one container/day one container/week one container bi-weekly
3. ___ How much material does your office recycle each week? Size of container _____
 one container/day one container/week one container bi-weekly
4. ___ Can you control the temperature of your office?
5. The winter temperature is _____. The summer temperature is _____.
6. ___ Does your office have a programmable thermostat(s)?
7. ___ What percentage of the office lighting is fluorescent? ___%
8. ___ Do the office lights turn off automatically?
9. ___ Do you turn off the lights if you'll be away for more than 5 minutes?
10. ___ Do you turn off your computer if you're away more than 30 minutes?
11. ___ Do your office computers remain on sleep mode 24/7?
— a) Are office computers shut off after hours?
12. ___ Does the office copy machine go on sleep mode?
— a) Are office copy machines shut off after hours?
13. ___ Has your workplace had an energy audit?
14. ___ Has the workplace taken steps to improve its energy efficiency?

TRANSPORTATION & ENERGY SAVINGS

1. ___ Do you walk or bike to work?
2. ___ Do you take the bus to work?
3. ___ Do you carpool to work?
4. ___ How far do you live from work?
5. How many miles/gallon does your vehicle get?

10-20 mpg 20-30 mpg 30-40 mpg more than 40 mpg

6. ___ Does the workplace offer transportation incentives?

Cleaning

1. ___ If your office has a kitchen, are there cleaning supplies with labels marked

caution warning danger?

2. ___ In the office bathroom are there items with labels marked

caution warning danger?

Other

1. ___ Are there native plants (rather than a lawn) surrounding your building?

2. ___ Are pesticides applied to the area around your building?

3. ___ How many days per week do you wear clothes that must be dry-cleaned?

4. — Does your home have a programmable thermostat that lowers the heat while you're at work?

5. ___ Can you work from home once or twice a week?

6. ___ Would you work a four-day week if your office permitted you to?

7. ___ Does your office discuss reducing the workplace's ecological footprint?

8. ___ Have any members of your office participated in a program that educates or encourages reducing your ecological footprint?

This checklist was developed by the **Vermont Earth Institute** (c) 2006
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9.3 Sustainability Survey

Directions: Hand/Blitz out the following survey to your co-workers. This will help you find support for instituting sustainable practices.

1. Put in order the sustainable practices that you think are most important to our department (1 as the most important, 9 as the least):

- ___ Encouraging energy awareness (turn off equipment and lights not in use)
- ___ Establishing comprehensive recycling and composting
- ___ Encouraging car pooling and use of ADVANCE transit
- ___ Discussing sustainability at meetings
- ___ Buying energy star and environmentally friendly appliances (and duplex printers)
- ___ Establishing a system for proper disposal of hazardous waste
- ___ Increasing communication via computers instead of written memos
- ___ Reducing waste by encouraging care of current china, furniture, and appliances
- ___ Reducing waste by discouraging use of disposable plates, cups, mugs, and silverware

2. Please list at least one of the above activities that you would like to see instituted in our office

3. Please list one of the above activities that you would like to help institute in our office.

4. If we hosted sustainability retreat for our office, where we generated ideas for environmentally-friendly living, how likely would you be to attend?

_____ Very Likely _____ Likely _____ Somewhat Likely _____ Not Likely

5. What ideas do you have? If you have suggestions, please list them here, or contact the sustainability coordinator for your office.

9.4 Sustainability Action Options

<p><u>Sustainability Action Options:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Strong Interest: I'd like to attend a Sustainability Retreat for our office to develop a Sustainability Action Plan. (3 hours long) <input type="checkbox"/> Medium Interest: I'd like to attend a condensed Sustainability Session – Vision to Action. (2 hours long) <input type="checkbox"/> Mild Interest: I'd like to complete a Sustainability Survey to let you know about the steps I'm willing to take to move our office toward sustainable practices. <input type="checkbox"/> Pressed for Time: I support this effort but have little time, however, I would like to help in some way. If there is one thing I'd like to see changed around here it is: _____ <input type="checkbox"/> Contact me when you need help. <p>Blitz: _____</p>	<p><u>Sustainability Action Options:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Strong Interest: I'd like to attend a Sustainability Retreat for our office to develop a Sustainability Action Plan. (3 hours long) <input type="checkbox"/> Medium Interest: I'd like to attend a condensed Sustainability Session – Vision to Action. (2 hours long) <input type="checkbox"/> Mild Interest: I'd like to complete a Sustainability Survey to let you know about the steps I'm willing to take to move our office toward sustainable practices. <input type="checkbox"/> Pressed for Time: I support this effort but have little time, however, I would like to help in some way. If there is one thing I'd like to see changed around here it is: _____ <input type="checkbox"/> Contact me when you need help. <p>Blitz: _____</p>
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9.5 Brochure -- Attached

9.6 Works Cited

http://www.rafb.com/pages/business/Green_chklist.html
<http://www.perc.ca/waste-line/rrr/office/ch11-list.html>
www.dartmouth.edu/~fom
http://www.chicagorecycling.org/index.php?option=com_wrapper&Itemid=108
<http://www.nrdc.org/cities/recycling/ften.asp>
www.mcswmd.org/Miscellaneous/Trivia.html
www.commondreams.org
www.worldwatch.org/brain/features/trivia/quiz.php?quiz=3&
www.worldwatch.org/brain/features/trivia/quiz.php?quiz=1&
www.worldwatch.org/brain/features/trivia/quiz.php?quiz=2&
www.greenpeace.org
www.motherjones.org
www.eatlocalvt.org/homegrown.pdf
<http://www.worldwatch.org/>

9.7 Sustainability Resources:

Dartmouth College

The Dartmouth Sustainability Initiative: <http://www.dartmouth.edu/~sustain/>
The Environmental Studies Program: <http://www.dartmouth.edu/~envs/>
The Dartmouth Organic Farm: <http://www.dartmouth.edu/~doc/organicfarm/>
The Green Magazine: <http://www.dartmouth.edu/~tgm/>
The Resource Working Group: <http://www.dartmouth.edu/~rwg/>
Recycling: <http://www.dartmouth.edu/~fom/services/solidwaste/>
Energy Conservation: <http://www.dartmouth.edu/~sustain/tips.html>
Environmental Groups: <http://www.dartmouth.edu/~rwg/groups.html>
Sustainable Move-out: <http://www.dartmouth.edu/~moveout/>

Upper Valley

Recycling/energy info: <http://newhampshire.earth911.org/master.asp>
Vermont Law School: <http://www.vermontlaw.edu/>
Sterling College <http://www.sterlingcollege.edu/>
The Sustainability Institute: <http://www.sustainabilityinstitute.org>

The New Hampshire Sierra Club: <http://www.nhsierraclub.org>
The Hanover Conservation Council: <http://www.hanoverconservationcouncil.org>
Valley Net Community Organization Pages:
<http://www.valley.net/communityOrganizations/>
The Association of Vermont Recyclers: <http://www.vtrecyclers.org/>
League of Women Voters of New Hampshire: <http://www.lwvnh.org/>
N.H. Department of Environmental Services: <http://www.des.state.nh.us/>
Efficiency Vermont: <http://www.encyvermont.com>
The New Hampshire Office of Energy and Planning: <http://www.nh.gov/oep>
Vital Communities: <http://www.vitalcommunities.org/>
The Upper Valley Land Trust: <http://www.uvlt.org/>
Vermont Feed: <http://www.vtfeed.org/>
D Acres Community: <http://www.dacres.org/>
NOFA Vermont: <http://www.nofavt.org/>
NOFA New Hampshire: <http://www.nofanh.org/>
Center for Sustainable Agriculture: <http://www.uvm.edu/~susagctr/>
Localvores: <http://www.locavores.com/>

National

The Association for the Advancement of Sustainability in Higher Education: <http://www.aashe.org/>
Grist: <http://www.grist.org/>
Environmental News Network: <http://www.enn.com/>
Mother Earth News: <http://www.motherearthnews.com/>
The New American Dream: <http://www.newdream.org/>
Campus Climate Challenge: <http://climatechallenge.org/>
Simple Living Network: <http://www.simpleliving.net/main/>
Global Footprint Network: <http://www.footprintnetwork.org/>
Calculate your Ecological Footprint: <http://www.myfootprint.org/>
Campus Ecology: <http://www.nwf.org/CampusEcology/dspGreeningProjects.cfm?iid=4>
Union of Concerned Scientists: http://www.ucsusa.org/global_warming/
Clean Air Cool Planet: <http://www.cleanair-coolplanet.org/>