

Report of the Grenadines Green Schools Planning Workshop

May 27th, 2005,
Carriacou, Grenada

Centre for Resource Management and Environmental Studies (CERMES)
University of the West Indies, Cave Hill Campus, Barbados



May, 2005

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Grenadines Green Schools Planning Workshop

Carriacou, Grenada, Friday, May 27th, 2005

1 Opening

Mr. Casper Smith, Project Manager for the Sustainable Grenadines Project, welcomed the workshop participants and then asked everyone to introduce themselves (Appendix 1). Mr. Smith then introduced Dr. Robin Mahon from the Centre for Resource Management and Environmental Studies (CERMES) at the University of West Indies (UWI).

Dr. Mahon, gave a brief background on events leading up to the meeting. The Sustainable Grenadines Project is a transboundary initiative looking to strengthen and empower local communities in protecting their environment and livelihoods. In his comments, Dr. Mahon underscored the important underpinning that education must play in the broader goal of making the Grenadines sustainable.

Dr. Mahon explained how the meeting would proceed throughout the day and described what he hoped would be the outcome of the day's efforts (Appendix 2). He introduced Mr. Doug Blakey, Principal Emeritus of Upper Canada College (UCC) in Toronto indicating that if one believed that education was a fundamental aspect of bringing sustainability to the Grenadines, then examples like the Green School initiative at UCC should help stimulate thought and reflection about what the key elements of a successful green schools program in the Grenadines would be.

2 Workshop sessions

2.1 Current "Green" activities at Grenadine Schools

Individuals from several of the schools represented at the workshop, spoke about some of the environmental initiatives they have underway or have undertaken at their school in the past. Their comments are summarized below. After each presentation, there was an opportunity for questions and discussion.

2.1.1 Bequia

Bequia Community High School, presented by Mr. Herman Belmar, Teacher

The Sandwatch/Small Island Voice (SIV) Project – is very successful UNESCO SIV student initiative that took place at the Bequia Community High School. It involved beach monitoring and coastal rehabilitation. There has also been a major initiative in developing 'REUSING' techniques for waste glass bottles that are broken down into small pieces and then mixed with concrete to make useful products such as benches. Techniques have been developed for reusing other garbage materials to make other products.

The Jeff Gregg Drain Rehabilitation Project, Paget Farm (September 2004 – April 2005) is another BCHS project reclaiming a "garbage site" at Paget Farm and converting it into park/recreational space. The group of students involved were from an extracurricular program at BCHS. Some scientific monitoring (auditing) of the site was done by the students.

Teacher and student training has also been conducted on Bequia as well as other islands.

Bequia SDA Secondary School, presented by Mr. Gabriel Bowman, Principal

Students have been involved in the maintenance and cleanup of the school buildings and grounds. Each class has adopted a section of the school as its responsibility to keep clean as well as their own classroom.

They also have initiated the “Ace of Spade” program – Alliance for Clean Environment. This is a student volunteer group that works on environmental initiatives at the school and within the local community.

A student competition was established this year where individual students were encouraged to submit an idea for an environmental initiative at the school. If the winning proposal gets accepted by the school’s management team, the winner will receive \$50 and a computer. Submissions were due May 27th.

2.1.2 Union Island

Union Island Secondary School, presented by Mr. Anthony Stewart, Deputy Principal

Cleanup of the school buildings and grounds has been a major focus for student “green” activities at the school.

Student environmental competitions have been conducted in the past but have not continued.

There is a community tree-planting initiative undertaken annually.

Building Design has been a major issue for the school. Their present building is too hot, because the upper windows are fixed, air flow is poor. They hope to move to the Learning Centre Building next door perhaps next year. Also, a new building is being designed and students from the school have submitted design solutions/suggestions but these have not been well received by the planners.

Fencing around the school grounds has been put in place using discarded materials. This has been another successful “REUSE” initiative.

There used to be a composting program but this has not continued. Some consideration is being given to re-introducing a composting program. There are a number of stray animals that have created problems for the school and community but as yet no solution has been worked out to solve this problem.

2.1.3 Carriacou

Bishop’s College, presented by Vernilia Noel, Teacher

Student cleanup and decoration of their classrooms has been successful with student competitions for the best results. There have been some cleanup initiatives undertaken within the community as well. Students do not use the garbage bins that are provided to collect garbage. This leads to the accumulation of substantial amounts of litter around the grounds.

There has been some interest in re-building a local building that requires a lot of work to fix up. There has also been some consideration given to re-using discarded building materials for this project. There was a tree-planting initiative undertaken on Sandy Island but this has not continued, and a conch shell removal program has been started as well.

There are several unsolved problems since hurricane Ivan. The school lost a lot of trees that were needed to provide shade for “outside” classrooms. There is still a lot of debris on the grounds from the hurricane

2.2 The Green School Programme at Upper Canada College

Mr. Doug Blakey, Principal Emeritus at Upper Canada College (UCC) gave a PowerPoint presentation entitled 'Upper Canada College's Green School for the 21st Century' (see appendix 3). In the presentation, Mr. Blakey covered the following topics:

- Origins of UCC's Green School
- Getting Started, Vision, Guiding Principles, Goals, Overall Concept & Master Plan
- Facilities & Operations
 - Energy
 - Water
 - Waste
 - Grounds
 - Transportation
- Curriculum & PD
 - The need for a Curriculum Coordinator
- Organizational Behaviour
- Conclusions

Within each section of the presentation, Mr. Blakey also discussed opportunities, Challenges, Objectives & Achievements.

Mr. Blakey also noted that in Canada, there is a strong focus on environmental topics within the Primary and Secondary School curriculum. In starting the Green School initiative at UCC, the goal was to ensure that every student graduated understanding the basic processes by which nature sustains life -- **Ecological literacy**, having experienced how ecological concepts are applied each day at school -- **Learning it by Living it**; having been instilled with an ethic of environmental stewardship -- **Environmental ethic**; and a commitment to contribute this knowledge, experience and ethic to the betterment of society -- **Community service**.

The following main points were raised in the discussion following the presentation:

- Tell us more about waterless urinals?
- What about bulk dispensing of drinks, as the method of reducing the accumulation of soft drink cans and bottles?
- How do we get integration into the curriculum or accessing the opportunities that actually already exist within the different subject areas within the curriculum.
- Need to make environmental sustainability more a part of the curriculum from primary up through secondary schooling.
- In Grenada there is now a requirement for each school to develop an Environmental Plan, and this has worked successfully in at least one school. Development of plans has been "grass-roots" involving all teachers and management so there has been "buy-in";
- On the down-side, when the Principals in SVG recently got together to discuss educational priorities and needs, environment was not even mentioned.
- What about parental support?. Often it is the parents that set a bad example for their children. We need to get the parents more on side
- Our schools are small and very community related, likely more so than at UCC. In our small communities, everyone knows everyone else. This can be a problem sometimes because

the community can “invade” the school property and treat it badly. However, close linkage with the community could also mean a bigger impact for a ‘Green Schools’ project.

- If a community meeting is called, often the turnout is small – there is not usually a big commitment to making improvements.

2.3 Green Schools and CXC

Dr. Mahon informed participants that he had been in contact with officials at the CXC in Barbados, and that they had indicated strong interest in the project and a willingness to be involved in it. They had indicated that environmental topics were included in several subjects at in both General Certificate and CAPE levels; these are primarily the sciences, and geography. There was a broad, general discussion about the primary and secondary school curricula and in particular that offered by CXC. There is a course entitled Integrated Science that has as one of its aims to produce a student who appreciates the necessity to preserve the natural environment. Within the syllabus, there are many environmental topics – e.g. population growth, environmental pollution, water and the water cycle, etc.

There did not seem to be general agreement on the degree to which environmental topics are contained within all these curricula, especially at the primary level. Some felt that within some of the syllabuses there were specific topics or opportunities to cover these matters. Others felt that environmental topics were not present within the curriculum. There does not appear to be any courses devoted specifically to environmental science or environmental studies. One participant noted that ‘if it’s not in the curriculum it won’t get any attention’.

2.4 Group Workshop to address the focus question

Participants engaged in a facilitated workshop around the focus question **“What are the key elements of a successful green school program in the Grenadines?”**. The methodology for the session included the Technology of Participation Consensus Workshop Method where ideas from participants are clustered on a “sticky wall” so they can reflect on them and come to consensus.

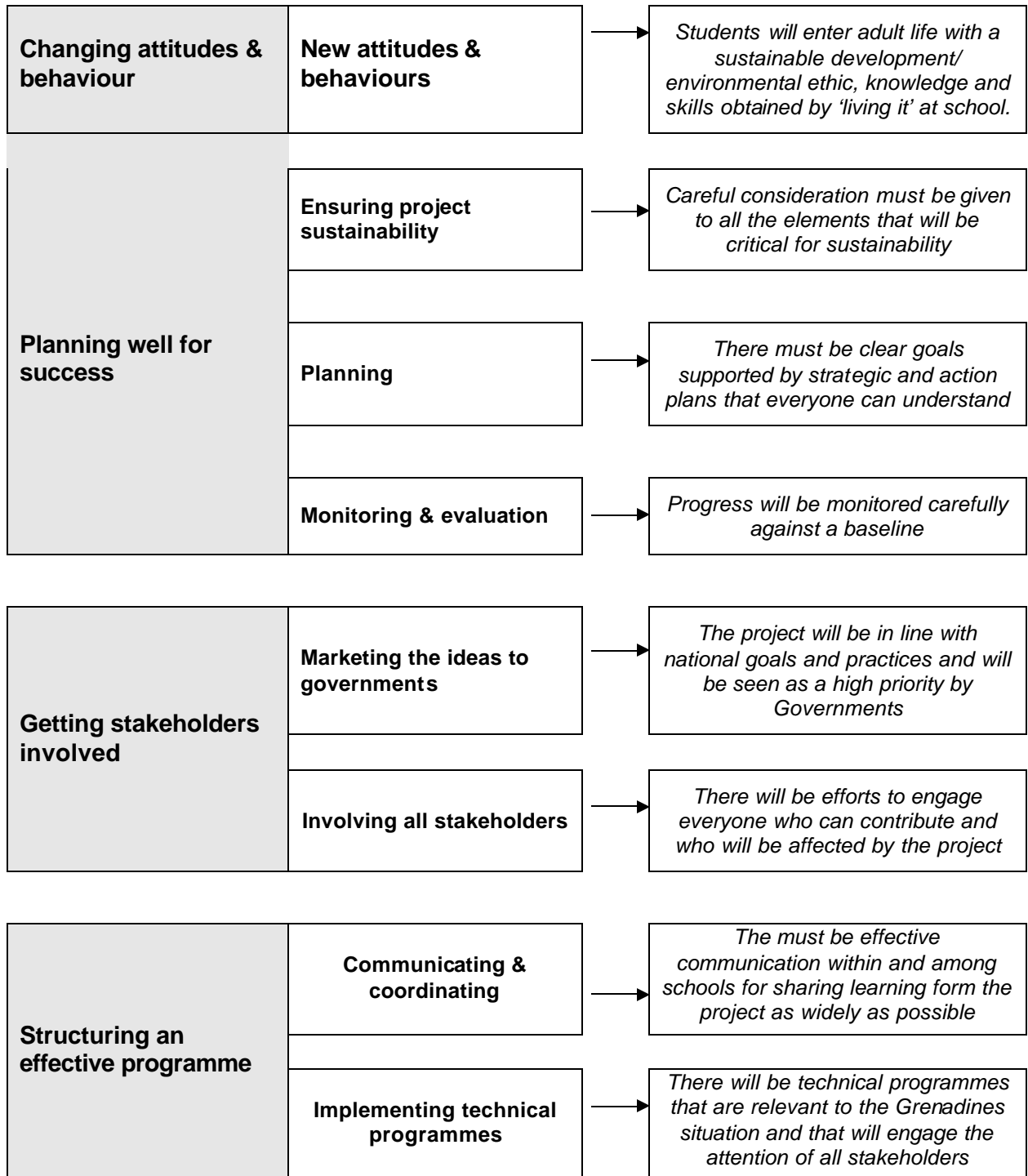
The ideas from participants are summarised in the chart below. The detailed inputs are shown in the table that follows.

Participants then broke into three groups to further develop the ideas that had been offered in each of the three areas, ‘Planning well for success’, ‘Getting stakeholders involved’ and ‘Structuring an effective programme’. The remit of the groups was to elaborate on the ideas and also to determine if any ideas were missing.

In a general discussion prior to this exercise, the following points were raised for consideration:

- The need for initial auditing/baseline information at the schools, against which to measure change;
- How to integrate the three components: ‘Curriculum’, ‘Green Facilities’ and ‘Behavioural change’;
- How to pursue financial support;
- Whether Disaster Risk Reduction is a valid component of a sustainability initiative.

The key elements for a Green Schools programme in the Grenadines



“What are the key elements of a successful green school program in the Grenadines?”

Changing attitudes & behaviour	Planning well for success			Getting stakeholders involved		Structuring an effective programme	
	Ensuring project sustainability	Planning	Monitoring & evaluation	Marketing the ideas to government	Involving all stakeholders	Communicating & coordinating	Implementing technical programmes
Affect behavioural change Creativity Celebrate success Recognize positive models Alternative Ways School management and discipline Improvement	Sustainability and ownership Education & training Security Strong leadership Effective management	Strategic plans Goals & Objectives An integrated approach Need to be Practical Environmental curriculum	Monitoring and feedback Monitoring process Mobilization, implementation & evaluation Evaluation Progress checks	Should fit into national goals and policies Government support Budget Impact on health – selling the case	Community support Institutional support Parental and community involvement Involve key stakeholders Impact on health Good relationship with tourism board Good relationship with Government Ministries	Networking (among schools and other stakeholders) Awareness	Water conservation programme Waste management system Tree planting Design/Improvement of school buildings

Following the discussions, each group reported back to the full workshop.

Getting stakeholders involved

Community Support – town hall meetings would be helpful to spread the word; also meetings with members of the business community.

Institutional Support – there is a need to channel information to parents through students, PTA meetings. Also involve NGO's.

Parental and Community Involvement – it would be important to have direct involvement of parents/community in the planning and implementation process.

Impact on Health – there should be integrated approach to the impact of health and safety in relation to waste disposal, pollution, proper ventilation, disaster risk etc. etc.

Government Support – there should be dialogue with various government ministries for support in implementing a plan of action with specific emphasis on funding and inclusion in national policies.

Planning well for success

Plan in such a way as to make a sustainable project that will result in a change in the attitude and behaviour of people

The project should be well planned. The goals and objectives clearly defined. We should follow an integrated approach and make the project as practical as possible. The aspect of the environment should be made a part of the regular curriculum.

Consideration must be given to our vulnerability to natural disasters

The Project must be monitored constantly, gathering feedback in order to guide the next steps.

We should aim to make the project sustainable for the benefit of generations to come through education and training, effective management, strong leadership and adequate security.

We hope to achieve positive changes in attitude and behaviour in all stakeholders including an expanded creative mind emulating positive models.

Structuring an effective programme

Schools involved in the program share ideas, data, resources, through website, workshops, newsletters etc. also with the aim of developing a data base.

A Public Awareness Campaign should include public meetings, press relations, newsletters, electronic media, etc.

The project should be a joint/coordinated effort with the involvement of community groups

Networking – helps to:

- Deal with challenges,
- Facilitate the sharing of resources,
- Keep the dream alive.

Technical Programmes that could be implemented include:

- A disaster preparedness plan which incorporates “green” ideas,
- Formation of environmental clubs,
- Organizing environment competitions,
- Energy conservation,
- An environmental handbooks for teachers,

- Environmental management projects e.g. school waste,
- Other activities that reduce costs, water conservation (water-saving devices), recycling, proper maintenance.

3 Commitments and Next Steps

To conclude the workshop, participants discussed the degree to which they wanted to move ahead with this “Green School” initiative and if so, what would be the next steps to consider.

There was general and enthusiastic agreement from all present that this worthwhile start should be used as a basis for continuing to develop a Green Schools Programme for the Grenadines. There was some discussion about whether this should include all five secondary schools, and it was thought that it should. There was also discussion on whether it whether it should include all or some of the primary schools as well. As there are fourteen in the Grenadines, this was seen as a large commitment. However, it was agreed that at least two should be included, one from each participating country. Further consideration needs to be given to this aspect of “next steps”.

The Sustainable Grenadines Project committed to:

- Preparing a workshop report that would be shared with all participants,
- Developing a proposal that would be used to seek funds for implementation of a Green Schools Programme for the Grenadines,
- Continuing to provide support in seeking funding and promoting the project.

Appendix 1. Participants

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Appendix 2. Workshop agenda

8:30 – 8:45 a.m.	Introductions and anticipations
8:45- 9:30	Current “Green” activities at Grenadines Schools
9:30 – 10:20	The Green School Programme at Upper Canada College
10:20 – 10:30	Green Schools and CXC
10:30 – 10:45	Break
10:45 – 12:30 p.m.	Group Workshop to address the focus question “What are the key elements of a successful green schools program in the Grenadines?”
12:30 – 1:30	LUNCH
1:30 – 2:30	Critical environmental issues to take up in a Green Schools project
2:30 – 3:00	Commitments and next steps

Appendix 3: Upper Canada College Green School PowerPoint presentation



Upper Canada College's Green School for the 21st Century

Presented by
Doug Blakey, Principal Emeritus, Upper Canada College
Ablly assisted by

Stephanie Foster, Executive Director, UCC Centre for Environment & Sustainability



To:
Sustainable Grenadines Project Green Schools Planning Workshop
May 27, 2005

Upper Canada College

UCC and Toronto:

- Toronto is located in eastern Canada, on the shores of Lake Ontario
- It is one of the world's most diverse and multicultural cities, with a population of over 3,000,000
- One third of Canada's population is located within 160 km radius
- Sometime known as "Silicon Valley North"
- UCC is a day and boarding school for boys from SK through Grade 12
- Total school community approx. 1,400
- Offers the International Baccalaureate (IB) diploma
- Situated on a 37-acre campus in the heart of the City + a the 450 acre Norval Outdoor school, 45 minutes from the main campus.
- 455,000 square feet of buildings
- Founded in 1829

Green School for the 21st Century

- **Presentation Overview:**
- Origins of UCC's Green School
- Getting Started, Vision, Guiding Principles,
- Goals, Overall Concept & Master Plan
- Facilities & Operations
 - Energy
 - Water
 - Waste
 - Grounds
 - Transportation
- Curriculum & PD
 - Curriculum Coordinator
- Organizational Behaviour
- Conclusions

The Road to GreenUCC's Green School Origins

Getting started – fall, 2001:

- Initiated & championed by the Principal
- Green School “White Paper” input from Bill MacDonough, Architect (USA) and others in the field
- Following a set of approved Guiding Principles & Goals
- Unanimous support & approval from the Board of Governors

Vision:

Living on this Earth today and everyday as if we are borrowing it from our children

Guiding principles:

“In order to achieve the goal of becoming a Green School, the following principles will infuse environmental awareness and responsibility into College life:”

1. Integrate the UCC community harmoniously with its natural environment.
2. Provide an educational focus on how we conduct ourselves as an organization.
3. Consider all aspects of value and cost, both in the long and short term.
4. Strive for continual improvement in our demonstration of environmental responsibility.
5. Private school, public purpose: demonstrate leadership by being a model for others.

Goals:

- Ecological Literacy: understand the basic processes by which nature sustains life
- Learning It by Living It: experience how ecological concepts are applied each day at school
- Environmental Ethics: instil an ethic of environmental stewardship
- Contribute to Society: share the results of the Green School work with the broader educational community.

*“Imagine a school ...
That is in every way integrated harmoniously into its natural ecosystem .
With facilities and grounds that are sustainable.
Where the school community learns about sustainability by living it day-by-day.
This fascinating, beautiful, magical and enchanting **GREEN SCHOOL** could be your school.
It would be 100% fabulous”*

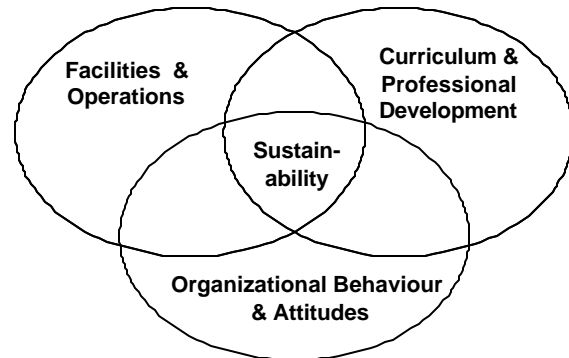
June, 2002 Board of Governors approves “Green School for 21st Century”

The Road to GreenUCC's Green School Origins – Concept

A three-pronged approach to greening the school

Opportunities:

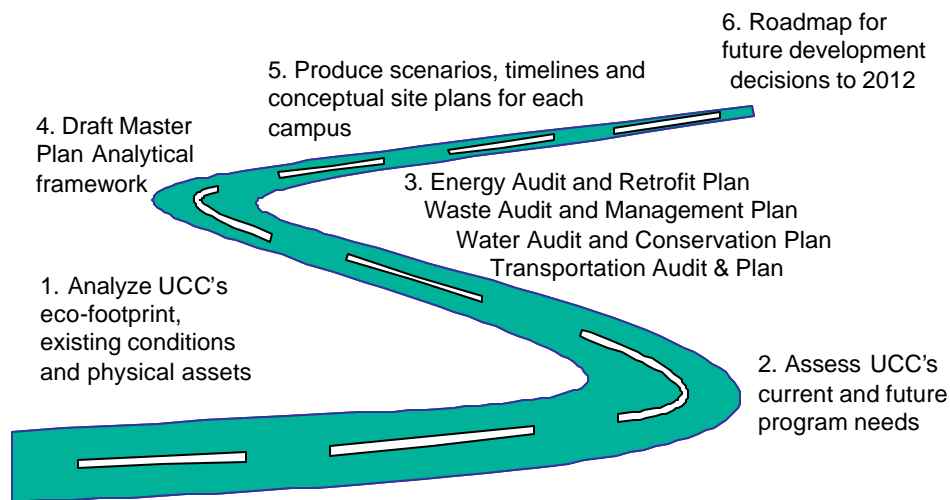
- Executive Director part of Executive Committee (May '03)
- 10 yr plan for new & renovated facilities already considered (Aging facilities as candidates for green retrofits)
- Curriculum Coordinator to support teachers & students in linking curriculum to facilities & organizational behaviour (Sept. '05)
- New learning horizons for facilities staff
- Creating optimum “green learning” environments that are interactive
- Recognize innovation & leadership
- Hire “green” when possible
- Building a committed community



Challenges:

- Building community-wide support - all groups
- Resistance to change (amoeba model)
- Sustaining initial enthusiasm & momentum within all constituencies
- Maintaining senior level commitment to the guiding principles
- Raising the necessary funds for the initiatives
- Collecting data, choosing indicators and defining targets is a lot of work

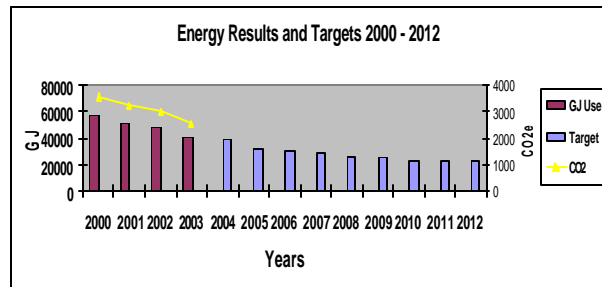
The Road to GreenUCC's Green School Origins – Master Plan



The Road to GreenFacilities & Operations – Energy

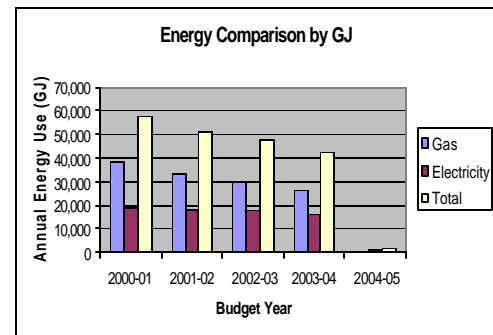
Energy Conservation Objectives:

- Conduct Energy Audit
- Maximize energy efficiency
- Be carbon neutral by 2012:
- Building Retrofits (e.g., windows/doors)
- More Lighting Retrofits & Sensors
- Insulation & Infiltration Reduction
- Heat & Ventilation Recovery
- Metering & Monitoring
- Minimize heat island effect
- Integrate mechanical systems (e.g., geo-thermal, co-generation)



Achievements:

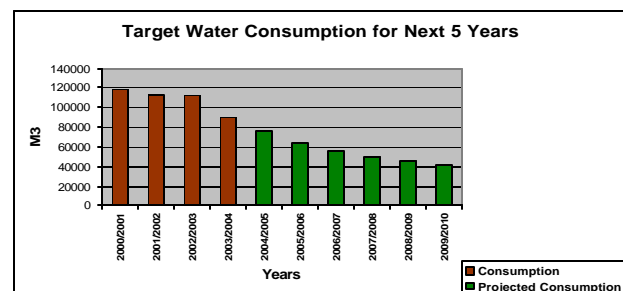
- Energy Audit completed & plan developed
- Conducted equipment inventory & installed control systems
- Boiler Retrofit
- Lighting Retrofits/Sensors
- Installed Meters at Prep & Arena
- Green Renovation of Grant House
- Cut energy use by 30% and reduced greenhouse gas emissions by 900 tonnes
- Reduced electricity and natural gas bills



The Road to Green Facilities & Operations - Water

Water Conservation Objectives:

- Water Audit & Plan
- Maximize water efficiency
- Increase storm-water infiltration and reduce runoff (bioswale, collect rainwater & snow)
- Capture boiler cooling water
- Arena - once-through condensers
- 17 more waterless urinals
- 15 low flush toilets
- Harvest rainwater and re-use
- Improve storm-water quality
- Grey-water re-use



Achievements:

- Water Audit completed & plan developed
- Reduced water consumption by 20% (that's 43,446 cubic metres or over 43 million litres)
- Cut water bills in a time of rising prices
- Swimming pool make-up water
- Once Through cooling freezer and A/C units
- Waterless urinals (6)

The Road to GreenFacilities & Operations – Waste

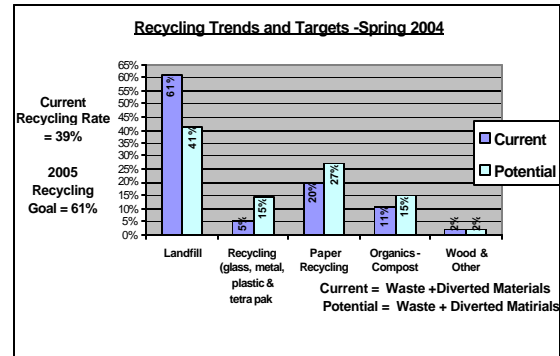
Waste Diversion Objectives:

- Conduct Waste audit & develop a Plan
- On-Site Composting
- Achieve Minimum 60% Diversion by 2007



Achievements:

- Audit completed & Plan developed
- 200 kilograms of waste composted every day -- that's about 1.5 million lbs. a year
- Recycled > 51 tons of metal, glass & plastic, and 135 tons of paper a year
- Bulk pop dispensing reduces 56,000 aluminium cans a year
- Recycled 561 lbs. of batteries
- Recycled fluorescent lamps, cell phones and ink-jet cartridges
- Expanded Compost program
- Green Purchasing Guidelines



The Road to Green Facilities & Operations - Grounds

Landscape Objectives:

- Protect heritage trees & enhance biodiversity
- Expand areas of naturalized vegetation
- Increase tree density + canopy by 35%
- Reduce impermeable surfaces by 25%
- Pesticide Free
- Organic Fertilization
- Butterfly Gardens
- Biodiesel Fuel
- Bird & Bat Houses

Achievements:

- Pesticide free campus
- Organic fertilizer only
- Naturalization/Xeriscaping Plan developed
- Switched to biodiesel
- Tree planting program – 14 mature trees planted
- Plan for reduction of impermeable surfaces by 25%

The Road to Green Facilities & Operations - Mobility

Objectives:

- Conduct Transportation Audit & develop a plan
- Maximize pedestrian & bicycle access
- Encourage alternatives to conventional vehicle use
- Reduce the number of cars on campus (Less idling on campus will lead to improved air quality)
- Improve pedestrian + bicycle facilities
- Better links to TTC

The Road to GreenCurriculum & Professional Development

The Curriculum Co-coordinator for Environment and Sustainability Programs:

Fundraising and hiring for this next key “Green School” position has now been completed. This person will:

- Be a resource to help faculty develop & integrate sustainability topics into the curriculum
- Assist in making curricular linkage to the grounds and facilities as learning tools
- Support action research and PD on educating for sustainability
- Work with student & teacher committees to maintain momentum & enthusiasm
- Inform the UCC community about “green school” developments elsewhere
- Develop partnerships with outside organizations

Opportunities:

- Open new areas for research and professional development, e.g., “Place as pedagogy”
- Empower and strengthen existing environmental programs
- People want to do what they know is the right thing to do if they know how and have the time to do it – they feel good too.
- There has to be a better way rather than an additional way to do it
- Opportunity to connect with interested professionals elsewhere around the world

Challenges:

- Perception that it imposes yet another dimension to the teacher’s workload
- Will some teachers feel threatened or imposed on?
- How to measure success ? e.g., integration across disciplines?
- Are students learning better?

The Road to GreenChanging Organizational Behaviour

Opportunities:

- Building a sense of community - proud to be part of a “green school”
- Pride in talking about this to friends & acquaintances
- people know this is right & want to do it if they know how
- Opportunities to recognize innovation & good examples
- When progress is made it is quite exciting

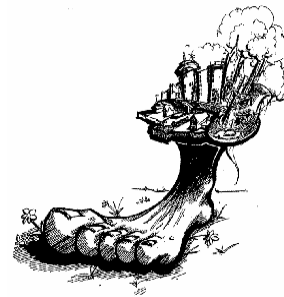
Achievements - “Learning it By Living It”

- Traffic Survey and Anti-Idling Campaign
- On-Line Environmental Monitoring of building performance
- Measuring UCC’s Eco-Footprint
- Energy demonstration cabin @ the Norval Outdoor School
- Learning Garden for school and community
- “Living” the waste, energy use and water use reduction initiatives
- “Living” the greening of the grounds
- Speaker series and site tours

Ecological footprint:

- Use Water, energy, transportation and waste audit data to produce an EF for the school
- Have students calculate the school EF as a part of their independent study project
- Gives us a clear indication of our impact and a motivation to reduce
- Do It Yourself! <http://www.myfootprint.org>

- UCC’s Eco-Footprint = 4.9 hectares (compares favourably to Canadian average of 8.8 because of green space & Norvall!!)
- Energy consumption per square foot = 0.06 GJ
- Energy consumption per capita per year = 30.6 GJ
- Water consumption per square foot = 4.8 m³
- Water consumption per capita per year = 65.3 m³
- Kgs waste per capita per year = 167.63



Achievements - “Learning it By Living It”:

- Golden Broom
- Boarding House KW Challenge
- GreenSaver Energy Audits
- Green Purchasing Checklist
- Paper Save Project: Kyocera Printers
- Paper Purchasing & Use Guidelines
- Waste Management Policy
- Linking Community Service with sustainability
- Celebrate! (e.g. Earth Week, etc.)

Challenges:

- Getting buy-in takes time
- Need for ongoing communication and feedback; what strategies work best?
- Resistance to add-ons & more work rather than same time but better
- How to measure success?
- Getting the environmental ethic has front & centre and permeating the ethos of the community

The Road to Green has resulted in many benefits so far:

- Educational (deeper environmental learning & ethical commitment)
- Environmental (reduced resource consumption)
- Financial (utility savings reinvested in green)
- Fundraising (attracting new donors)
- Community (pride in doing well and doing good)
- Social (acting locally, thinking globally)
- Leadership (being a model for others)

However, there are challenges along the way,...

- How to really achieve paradigm shift, “change the DNA” of an organization ?
- Cross-fertilization of sustainability themes (in facilities, curriculum and organization)
- Students’ anti-establishmentarianism
- Measuring success against “softer” indicators ?
- The “Shadow Curriculum”, really walking the talk

The Road to GreenConclusions

Knowledge...

This is a school where everyone understands the ways that the sites and the people function in balance with the natural environment. The students not only study an environmental curriculum, but actually live the environmental curriculum every school day. Everyone learns how natural cycles flows and ecological relationships work. We can actually demonstrate how it all works and everyone is encouraged to apply his or her knowledge to help the school constantly improve in living harmoniously with the natural world.

Physical...

In terms of its energy use, the school is self-sustaining. Its use of alternative forms of energy actually supplies electricity to the grid. It is self-contained in terms of its own water and, in fact, contributes clean water to its surrounding community: It has no waste. It produces net oxygen by consuming more carbon dioxide than it emits. It is all this, and fiscally responsible at the same time.