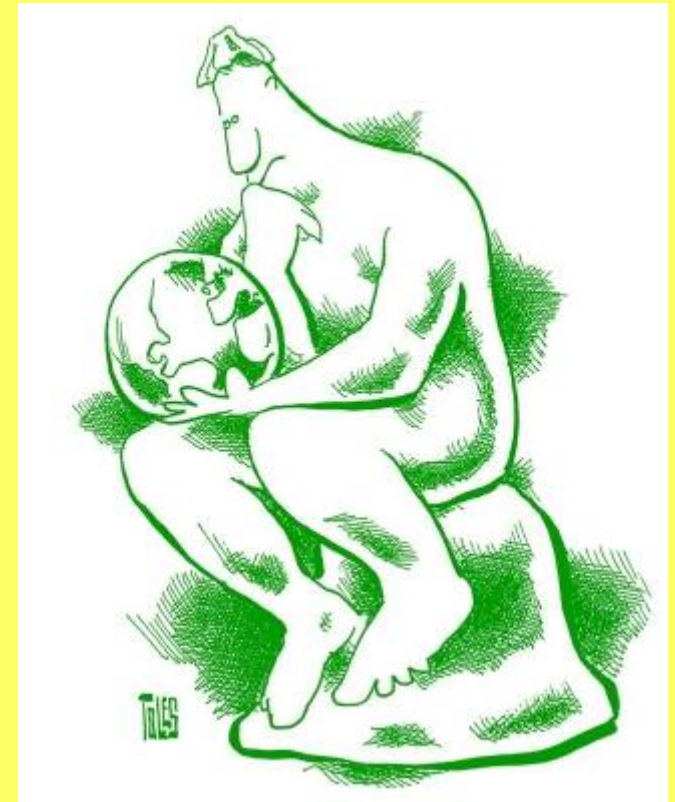
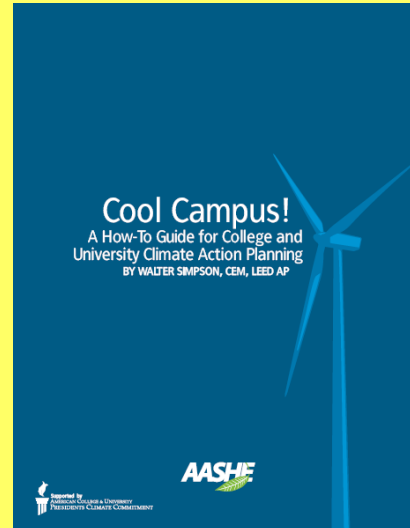
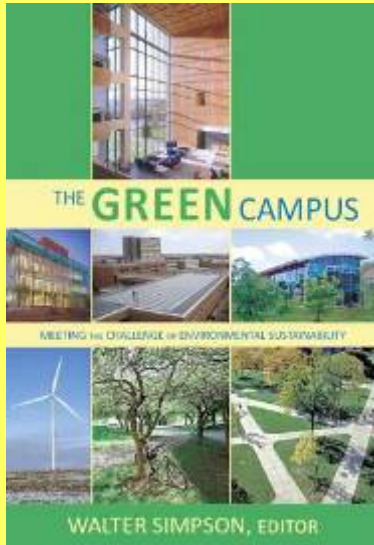


Tools for Climate Action Plans

- Panelists:
 - ❖ Walter Simpson: Energy consultant, U. Buffalo
 - ❖ Parikhit Sinha: O'Brien & Gere
 - ❖ Larry Cummings: Trane
 - ❖ Stephanie Cardwell: 2rw Consultants, Inc.
 - ❖ Jacek Ghosh: Virginia Commonwealth U.
 - ❖ C.J. Broderick Hartman: James Madison U.
 - ❖ Lenna Storm: George Mason U.
- Facilitator
 - ❖ Bob Kerr, Pure Strategies, Inc.
Atlantic Sustainability Consortium

Walter Simpson

- Energy Officer, University at Buffalo, 26 years, retired
- AASHE Senior Fellow
- Energy Consultant & Climate Activist
- enconser@buffalo.edu; (716) 839-0062



O'Brien & Gere - CAP Lessons Learned

Parikhhit Sinha

- Reduce big to small: 80% by 2050 = 2% per year
- Prioritize efforts: top 10 energy-using buildings and processes
- Common demand-side projects: building controls, building envelope, lighting, HVAC, retrocommissioning, green computing
- Have at least one big supply-side project: biomass boilers, long-term renewable power purchase agreement, cogeneration, waste-to-energy
- Make business case: short, medium, and long-term opportunities with implementation costs, energy savings, and financing
- Hands on learning: high visibility demonstration projects

Greening Universities

Larry Cummings - Trane

GHG from Buildings

- Typically 65-75% of GHG from buildings
- Historically looked for energy reduction
- Today, develop conservation and generation strategies

Conservation Strategies

- Lighting, Water
- Demand controlled ventilation (dampers, CO₂)
- Reduce air to ASHRAE 62 and economize
- Set back temperature when unoccupied
- Constant volume to VAV
- Controls, chiller/tower and boiler plant optimization
- Continuous commissioning

Generation

- PV; trees, domestic hot water
- Wind turbines
- Geo-thermal
- Biomass
- Methane from waste water treatment facilities & landfills
- Heat sink

Achieving CAP Goals: Engage the Community

Stephanie Cardwell – 2rw Consultants

- Involve staff, faculty, and students
- Establish two-way communication
 - Report energy and water waste
 - Submit ideas for more efficient operations
 - Receive recognition/rewards
- Create an outreach campaign
 - Green teams
 - Training
 - Contests
 - Events

Achieving CAP Goals: Implementation

- Dedicated on-site staff should be a priority
 - 1-2% of annual utility bill as investment
- 3-10% energy savings potential from behavior change
 - Quick payback possible

Virginia Commonwealth University

Jacek Ghosh

James Madison University

C.J. Broderick Hartman

- Lessons Learned
 - Encourage community input at all levels
 - Address high visibility items
 - Motivate immediate actions using quantitative estimates of environmental and economic impacts; incentives
 - Orient the students, staff and faculty to the effort
 - Emphasize the education and research elements



Mason Climate Lessons

Lenna Storm
Sustainability Coordinator

Greening Virginia Universities and
Colleges Conference

VCU – Richmond, VA

Thursday, October 22nd, 2009

Climate Planning

- Posted GHG inventory in September, was about 103,000 tons in 2007; adjusted to 117,000; being audited and updated by consultant now
- Jan 09 formed Core Planning Committee to manage strategy and sub-groups
- Formed several cross-functional sub-groups to work on recommendations for each space type
- Formulated over 250 “solutions”
- Ended up with 8 “umbrella” categories with multiple sub-categories

Climate Planning

- Interns and CPC working out details of recommendations now
- Developing communications strategy for next 2 years based on climate communications strategy developed by grad students taking a class with Director for Center for Climate Change Communication at Mason
- Consultants have been hired to augment our skills with their experience and engineering expertise – waiting on results of that partnership

Lessons Learned

- Do not engage students until a clear strategic path is seen and understood by planning team
- *Inclusion of stakeholders and community members is critical*
- Seminar class could have been very useful if the above had been known in advance
- Never under-estimate the time it takes to try something brand new!
- If possible, hire dedicated resource(s) to focus on climate initiatives – sustainability is too broad for one person to handle climate and all other aspects of campus sustainability