



LOOKING AT GREENDAY FROM ABOVE

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ANDERSON URGES 'NEW INDUSTRIAL REVOLUTION'

The regional drawl, the neat grey pinstripe, the courtly manner all suggest a dapper southern businessman in the traditional mold. And yet Ray Anderson is anything but traditional—he's a self-described "Radical Industrialist" who wants to reinvent the American corporation following a model of environmental sustainability. Delivering the keynote address to Sasaki's GreenDAY 2007 on May 23, Anderson combined a preacher's passion with a CEO's practicality and vision.

"We want to be the prototypical company of the 21st Century, leaders of a new Industrial Revolution modeled after nature," said Anderson, founder and CEO of Atlanta-based Interface Inc., one of the world's largest carpet manufacturers.

For a man who heads a billion-dollar corporation, and who the day before had been profiled in the *New York Times*, Anderson was remarkably low-key and approachable. His warm demeanor clearly charmed his hosts at the event, which consisted of virtually every employee of Sasaki in Watertown, several Sasaki employees from San Francisco, and numerous clients and consultants.

Anderson dates his self-described conversion "from predator to protector" to 1994, when he was suddenly confronted by a group of designers and asked to express his company's environmental policy.

"I could not come up with anything except, 'We obey the law,'" Anderson recounted. He then stumbled upon Paul Hawken's book *The Ecology of Commerce*, and it changed his life. More than a

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Congratulations and thanks to Meredith Elbaum, Chair of GreenDAY 2007, Mark Reaves, Chair of the Content Committee, Erin Bray, Chair of the Keynote Speaker Committee, and the multitude of others who contributed their time and efforts to an amazing GreenDAY 2007 event.

Once again, this year's GreenDAY format built upon the successes of last year and reworked the program to support GreenDAY's mission: to highlight sustainable design and foster its integration into our work. The Keynote Speaker, Ray Anderson, inspired us on Wednesday evening with his commitment to the future of sustainable products and collaboration with designers.

Thursday, GreenDAY 2007, featured interactive workshops providing the opportunity for Sasaki staff to further their understanding of a specific sustainable design topic. Consulting advisors facilitated the day-long workshops. The advisors introduced their topics in detail and then assisted us in applying this knowledge with design exercises that focused on our ongoing work at the University of Pennsylvania.

The event culminated in presentations and discussions highlighting the results of the day.

We hope everyone enjoyed their experience. If you have any suggestions for GreenDAY 2008, please feel free to contact the Steering Committee. As always, volunteers will be in high demand as planning for GreenDAY 2008 begins.

STACEY BEUTTELL



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WEDNESDAY, MAY 23 GreenDAY KEYNOTE

- 3:45–5:00 GreenDAY Keynote by Ray Anderson, Founder and Chairman of Interface, Inc.
- 5:00–6:00 Reception



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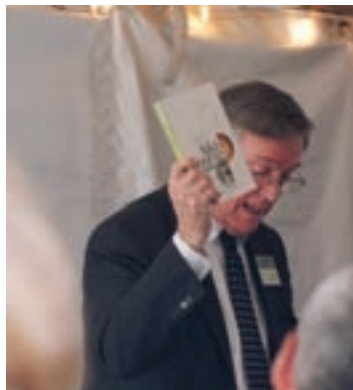
THURSDAY, MAY 24 GreenDAY 2007

- 8:00–8:30 Breakfast at Sasaki
- 8:30–9:00 GreenDAY Introduction and Project Briefing
- 9:00–3:45 Workshop With Working Lunch
- 4:00–5:00 Presentations
- 5:00–5:20 Panel Discussion
- 5:20–5:30 Closing Remarks

WORKSHOP

ADVISOR

Microclimate Analysis	Duncan Phillips, <i>RWDI</i> Bill Waechter, <i>RWDI</i>
Renewable Energy Master Plan	Mark Crowdis, <i>Think Energy</i>
Sustainable Campus Planning	Cindy Pollock Shea, <i>UNC-CH</i> Tony Cortese, <i>2nd Nature</i>
Building Siting and Orientation	Chris Schaffner, <i>The Green Engineer</i>
Sustainable Lighting	Mark Loeffler, <i>Atelier Ten</i> Samantha LaFleur, <i>Atelier Ten</i>
The Sustainability vs. Design Debate	Lindsay James, <i>InterfaceFLOR</i>
Permaculture Techniques	Jono Neiger, <i>Regenerative Design</i>
Innovative Wastewater Alternatives	Pio Lombardo, <i>Lombardo Associates</i>



RAY ANDERSON DELIVERS THE KEYNOTE

CONTINUED FROM PAGE 1

decade later, he established one of the most ambitious environmental agendas in the corporate world:

“Mission Zero,” which by 2020 specifically commits Interface to “zero negative impact on the environment.” They’re already well on the way—according to *Business Week*, Interface has already reduced greenhouse gases by 46%.

Furthermore, they have reduced energy use by 31% and have 28% fewer petroleum products, all generating savings of \$231 million.

“It’s up to business and industry,” Anderson said. “We’re the only institution on earth that’s large enough, powerful enough and wealthy enough to lead humankind out of this mess.”

JAMES MCCOWN

Several programs were held Prior to GreenDay to generate momentum for the big event.

The first of these was the Charles River Cleanup. Sasaki employees and other Chase Mills tenants took time from their lunch break to volunteer in the effort to clean up trash and debris from the stretch of the Charles River that runs through our back yard.

The GreenLAB Alternative Transportation Committee hosted a fair and invited a variety of vendors related to alternative transportation, such as Planettran, ZipCar, MassBike, TerraPass and BlueCross BlueShield—to name a few. The fair provided Sasaki employees with an easy way to sign up for alternative transportation programs, learn more about proper bike maintenance, and link carpools.

A two part series on “the state of green” in the design profession discussed current green initiatives sponsored by the design industry’s professional organizations, analyzed green marketing identities put forward by other design firms, and took a hard look at Sasaki projects that we consider green.

The first presentation examined the state of green by looking at green activities external to Sasaki to characterize the status of green efforts in the design industry. The second presentation focused on the state of green here at Sasaki. In addition to praising the green efforts of Sasaki employees, the presentation compiled projects that Sasaki promotes as green and distilled the sustainable strategies used in each project. The analysis revealed that the firm discusses energy savings techniques, storm water management strategies, and sustainable materials selection most often in its project descriptions.

The recipients of GreenRED grants, our in-house sustainable design grant program, presented the

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FRIDAY, APRIL 20

11:00–2:00 Charles River Clean-Up



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FRIDAY, APRIL 27

12:00–1:30 GreenLAB Transportation Fair • Great Space



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TUESDAY, MAY 1

12:00-1:30 State of Green in the Design Profession
Great Space



10

THURSDAY, MAY 10

12:00–1:30 State of Green in Sasaki’s Projects • Great Space



14

THURSDAY, MAY 17

12:00–1:30 GreenRED Presentation • Great Space



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TUESDAY, MAY 22

12:00–1:30 GreenLAB LEED EB Lunch • Building 6



31

TUESDAY, JULY 31

5:00–6:00 Communicating Sustainability Happy Hour
Crit Room

DID YOU KNOW?

The utensils used on GreenDAY were made from a compostable—potato starch. Called Jaya high-heat potato starch cutlery, these forks, knives, and spoons are an inexpensive, bio-degradable alternative to conventional plastic utensils. This product is available at www.ecoproducts.com



UTENSILS AT WORK

MICROCLIMATE ANALYSIS

This workshop discussed whether the planned future growth at the University of Pennsylvania maximized the interactions of temperature, wind, sun, and humidity to create a comfortable setting on campus. Bill Waechter and Duncan Phillips of RWDI discussed microclimate analysis and its contribution to the design community, and presented case studies at a range of scales that illustrated the benefits of



RWDI DISPLAY THEIR WIND MODELING AT UPENN

incorporating a comprehensive microclimate analysis into Sasaki projects. RWDI also demonstrated analysis techniques such as the use of wind tunnels and computational fluid dynamics (CFD). The RWDI experts then led a design exercise utilizing meteorological data and site relationships and made microclimate predictions for the campus expansion at the University of Pennsylvania.

services. He has over 25 years of expertise with studies of projects in harsh climates and has conducted site visits and field investigations in 35 Arctic locations in Alaska, Yukon, Northwest Territories and Nunavut.

Duncan Phillips, Ph.D., P.Eng. joined RWDI in 2000 as a Project Director/Senior Specialist for Ventilation for Comfort, CFD and Energy Efficient Design and an Associate of the firm. As a senior member of the CFD/Ventilation team, he technically oversees projects that include assisting in the design of buildings to implement high performance ventilation systems for applications ranging from contaminant control and thermal comfort to thermal load management and sustainable building design.

“Microclimate...it’s all about microclimate.”

The Microclimate Analysis workshop was an extremely engaging and truly interdisciplinary workshop. The presenters from RWDI were extremely knowledgeable about a wide range of microclimate issues, from macro-scale master planning to site and landscape to building design and materials. Duncan and Bill presented an amazing quantity of material—including some very impressive animated simulations—which generated significant discussion amongst the workshop participants, who included representatives from all of Sasaki’s

disciplines. While we learned a wide range of microclimate design and analysis strategies, the importance of understanding the microclimate implications of a project at the very earliest stages of design emerged as a critical recurring theme.

RENEWABLE ENERGY

Principles of renewable energy master planning were examined with the goal of teaching participants the process behind developing a customized energy strategy for clients. The day’s activities provided an understanding of the technologies behind several renewable energy options, their feasibilities and constraints, and strategies for implementation. Using various case studies, the group reviewed renewable energy options such as solar photovoltaic and solar thermal technologies, large and small wind, geothermal, fuel cells, microturbines, landfill gas and methane recovery, and biodiesel peak shaving. These case studies were used to highlight the decisions made based on physical and budgetary information that influences a renewable energy master plan. Think Energy shared some of the web-based tools and resources that can provide helpful information about renewable energy resources and system sizing.

Mark Crowdis, the founder and President of Think Energy, has lobbied on Capitol Hill for sustainable transportation, worked for the U.S. Environmental Protection Agency on water pollution, wetland and biological diversity management programs, and worked as an environmental consultant while attending graduate school at Johns Hopkins University. After receiving his M.S. in Environmental Science, Mark worked with the U.S. EPA’s Green Lights and Energy Star Buildings program, where he managed a national sales team

in an effort to engage commercial and industrial end-users in energy efficiency projects.

Since forming Think Energy in July, 2000, some of his key successes include: enabling the World Resources Institute’s Green Power Market Development Group to purchase green pricing products; supporting Toyota Motor Sales efforts to create the world’s largest “green” building; helping the Tower Company buy cost competitive renewable energy credits; and forming the Rhode Island Renewable Energy Customer Aggregation Program, and the New England Renewable Energy Purchasers program, of which Sasaki Associates is a member.

How much does renewable energy cost?

Mark Crowdis and Helen Tocco from Think Energy led an informative lecture about the various types of renewable energy technologies available—from wind and solar power to biodiesel and pyrolysis—then provided participants with a sheet enumerating costs and charged them with the task of creating a master plan for UPenn. The latter task was extremely valuable, as it illustrated the varying degrees of up front cost involved with each technology. While the workshop did not take a longer-term perspective on the value of different technologies, workshop participants came away feeling better informed to talk with clients about renewable energy possibilities and to push for these technologies to be incorporated into a project from its inception.

ELIZABETH SARGENT

Participants explored the impacts of wind, sun, snow, acoustics, ventilation, and air quality on human comfort and building performance.

Bill Waechter, C.E.T. joined RWDI in 1977, and is now a Project Director and Associate of the firm. His projects focus on snow control, pedestrian wind and sun/shade studies, and also the supervision / management of large-scale projects that include a broad base of RWDI’s engineering



KELLY HOUSTON

INTRODUCTION TO THE GREEN DAY WORKSHOP FORMAT

SUSTAINABLE CAMPUS PLANNING

Sustainability on college and university campuses is developed on a foundation of research, education, design, and action. The fully engaged institution pursues sustainability in many realms: energy use and sources; landscape design and management; construction of healthy, design and construction of high performance buildings and building renovations; mobility; purchasing; shareholder engagement and/or investment transparency; and respect for and engagement with the host community. A number of standards exist for measuring the baseline performance and progress toward sustainability. In addition, a number of coalitions and other forms of organizations challenge colleges and universities to “stand up and be counted.”

Cindy Pollock Shea of the University of North Carolina-Chapel Hill directs the UNC sustainability initiative, an impressive and comprehensive program which is fortunate to have the benefit of engaging with the University’s ongoing investment in \$1.5 billion of capital projects. Before UNC, Cindy worked internationally at the Worldwatch Institute in Washington, D.C., and the International Institute for Sustainable Development in Winnipeg, Canada.

campus and building design, transportation management and by changing purchasing and investment practices. Most recently, his organization has sponsored the Presidents’ Climate Commitment, an initiative to enlist American colleges and universities in making the commitment to act as leaders in the elimination of global warming emissions.

Green initiatives rely on coordination and communication

In the Sustainable Campus Planning workshop, we learned that just as sustainability requires a whole systems approach, so too does the structure that governs these initiatives. While support for sustainability needs to be a



TONY CORTESE AND CINDY SHEA LISTEN TO THE DISCUSSIONS OF GREEN CAMPUS ISSUES

bottom-up as well as a top-down approach—support from students and faculty and leadership from

the administration—there must be a coordinated body to administer the institution’s goal. Without this structure, the campus efforts would be a series of isolated initiatives that fail to adequately and comprehensively address a holistic vision for sustainability. In many ways, this process mirrors our own efforts here at Sasaki. Our green initiatives rely on



WORKSHOP PARTICIPATES ANALYZE UPENN BUILDING SITING

coordination and communication, guided by a core group of individuals and supported by various committees.

TYLER PATRICK

BUILDING SITING AND ORIENTATION

The workshop focused on the principles of bioclimatic architecture, and examined how decisions in siting and orientation can increase energy efficiency, human comfort, and overall building performance. These concepts were explored through case studies of indigenous and contemporary architecture that respond to the local climatic conditions. Participants were then introduced to site analysis techniques that relate to sun, wind, and heat transfer and loss calculations. Others topics included simple computer energy modeling, passive solar design, natural cooling, and daylighting.

Chris Schaffner, PE, is principal of The Green Engineer, a sustainable design consulting firm specializing in energy efficiency for the built environment. Chris has 22 years of experience in the design of building systems with a focus on energy efficiency and sustainability. He holds a BS in Mechanical Engineering from MIT. A long time promoter of sustainable design, Chris has been a member of the USGBC Faculty since 2001, training more than 4,000 building industry professionals in the use of the LEED Rating System. He is also an elected

member of the USGBC’s LEED-NC Core Committee, working to produce the next generation of LEED, and sits on the LEED Indoor Environmental Quality Technical Advisory Group (TAG). In addition to his consulting practice, Chris teaches in Sustainable Design and Building Technology at the Boston Architectural College.

Who wants to live in a refrigerator ?

Chris Schaffner, raised this question during the Building Siting and Orientation workshop, suggesting that architects and engineers have lost touch with their fundamental understanding of performance design strategies. Chris began the workshop with a comprehensive summary of why our work on GreenDay really matters. By presenting historic models and time tested traditions, Chris illustrated the critical principles by which all designers should analyze their work. Chris continued with several examples of how our society has repeatedly turned its back on its abiding energy dependency problem and deferred its solution to future generations. “The time to act is now” said Chris showing the group a picture of his front lawn filled with blooming, low maintenance native wildflowers.

Healthy, resource efficient, adaptable, and durable were several of the key terms used to describe what being “green” really means.

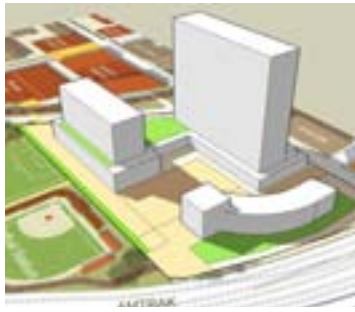
At the end of the day, Chris mentioned that there are many variables to consider

In the Sustainable Campus Planning workshop, we learned that just as sustainability requires a whole systems approach, so too does the structure that governs these initiatives.

Tony Cortese is the President of Second Nature, a group founded in 1993 dedicated to “Education for Sustainability”. This group not only addresses issues of sustainability in the educational setting, but also has engaged other institutions in like-minded strategies to realize cost savings and public respect through programs on energy and resource management,

when testing a building's site and orientation. Chris closed by stating "As responsible designers, we should all probably pursue the fundamental qualities of Vitruvius rather than the "Junk Space" influenced design of Rem Koolhaas".

PAUL A. KEMPTON



3D MODEL OF PROPOSED BUILDINGS AT UPENN

SUSTAINABLE LIGHTING

Efficient lighting design is a crucial part of integrating sustainable building practices in all our projects. This workshop was split into three subtopics: natural daylighting strategies; efficient interior lighting design; and efficient exterior lighting design.

Healthy, resource efficient, adaptable, and durable were several of the key terms used to describe what being "green" really means.

Workshop participants discussed how to incorporate efficient lighting techniques from the start of a project through its completion. Mark Loeffler and Samantha LaFleur of Atelier Ten introduced



ANALYZING BUILDING PERFORMANCE

various lighting strategies and applied them to interior and exterior spaces through design exercises that focused on the University of Pennsylvania project. Participants learned how to minimize the amount of artificial lighting while maximizing its impact in both interior and exterior environments. Participants discussed how daylighting and efficient artificial lighting design can be integrated to create the most energy and cost efficient and effective spaces for their projects.

Mark Loeffler, IALD, LEED is an Atelier Ten Associate Director and leader of its new lighting design practice that integrates daylighting and electric lighting systems design. Atelier Ten is an environmental and building services engineering firm. With multiple offices located nationally and internationally, Mark's branch is based in New Haven, CT. Formerly a project manager for Hayden McKay Lighting Design (1988-1993) in New York, and the lighting and sustainable design director for The RETEC Group (1993-2006) in New Haven, Mark is also an accredited LEED

professional. He is a professional member of the International Association of Lighting Designers, as well as a member of the Illuminating Engineering Society of North America. He holds an MFA (1990) in Architectural Lighting Design from Parsons School of Design in New York, where he is currently visiting lecturer.

Samantha LaFleur, LC is an associate lighting designer for Atelier Ten with extensive experience in energy-conscious integrated lighting design. Formerly with The RETEC Group, she has led her own design practice and served as project manager for Hayden McKay Lighting Design in New



MARK LOEFFLER ILLUSTRATES SUSTAINABLE LIGHTING ISSUES

York, NY. She is a member of the International Association of Lighting Designers, Illuminating Engineering Society of North America and is Lighting Certified (LC) by the National Council on Qualifications for the Lighting Professions. Samantha holds a bachelor's degree from Washington & Lee University.



ELKE SUGGESTS A STRATEGY FOR EXTERIOR LIGHTING

Well planned lighting is crucial to effective design

Led by Atelier Ten's Mark Loeffler and Samantha LaFleur, the Sustainable Lighting workshop explored the many aspects of lighting design including sustainable lighting as well as a variety of other topics. The morning was spent evaluating the Wellness Center addition to UPenn's football stadium. We began by discussing how to get daylight most effectively into this unique space. We then explored efficient and creative ways to enhance the space with artificial

lighting. Two of the challenges in this space were how to light a mirrored wall without creating

Participants discussed how daylighting and efficient artificial lighting design can be integrated to create the most energy and cost efficient and effective spaces for their projects.

glare and how to allow daylight into a space hidden beneath stadium seating. The afternoon was spent exploring the exterior space that bordered the stadium. The challenges in this area were ensuring safety incorporating existing and proposed transit, and creating areas that encouraged egress and/or gathering. This seminar proved how important lighting is in both designing buildings and in master planning.

MELISSA YOUND

THE SUSTAINABILITY VS DESIGN DEBATE

This workshop discussed the influence that designers can have on the development of sustainable materials and worked to dispel the myth that sustainability compromises good design. Participants examined spaces designed by critically acclaimed architects and designers for their use of sustainable materials. Lindsay James led the discussion with a comprehensive look at truly “sustainable” products. She suggested specific questions to ask of manufacturers and standards to use when evaluating products. She also described Eco-Labels and what they represent, and how to understand Environmental Life Cycle Assessment results.

In addition, this workshop introduced a Priority Matrix tool, developed from the Sasaki/InterfaceFlor collaboration, which weighs and ranks product choices across various attributes. With the Penn Connects project as a test case, participants were asked to develop the system further by selecting and evaluating materials in order to create new matrices for a range of products.

Lindsay James is the Manager of Sustainable Strategy for Interface Inc.’s commercial flooring division, InterfaceFLOR Commercial. She is responsible for translating Interface’s leadership in sustainability into the marketplace. She works closely with technical, marketing, and sales staff to develop strategies,



MARCUS, GRETCHEN AND KELLY USE THE PRIORITY MATRIX

in sustainability and researches trends and opportunities in the green product market. Lindsay is a LEED Accredited Professional and an active member in the Chicago Chapter of the USGBC.

Lindsay is a graduate of the University of North Carolina, with an MBA in Sustainable Enterprise from the Kenan-Flagler Business School. She also attended UNC for her undergraduate degree, where she completed a BA in both Economics and Biology.

Does sustainability compromise good design?

How ‘green’ are the spaces designed by critically-acclaimed architects and designers? Does sustainability compromise good design? Attendees in this workshop were challenged by these questions.

Tracy Dupont and InterfaceFLOR’s Lindsay Jones, who recently collaborated to develop a product

presentation of consensus-based, world renowned projects and their sustainable highlights, Lindsay lead a discussion focused on how to evaluate various attributes of architectural products for sustainability based on standards, Eco-labels and life cycle assessment. Attendees were then divided into teams and each team was assigned a different product to research, based on a questionnaire that would reveal that products various attributes, including aesthetics, durability and maintenance, as well as ‘green’ attributes.

This exercise laid the groundwork for each charrette team to begin their design and material selection for the lobby space. When each team made presentations to the rest of the group, it was clear that all had learned the value of evaluating products for a broad range of attributes, without sacrificing the aesthetics that we all strive for in our every day design work.

TERRY HARRIS

How ‘green’ are the spaces designed by critically-acclaimed architects and designers? Does sustainability compromise good design?

programs, and tools for Interface’s sales force, enabling them to educate their customers. As a sustainability expert, Lindsay often engages directly with end users to explain how Interface products are consistent with sustainability goals. She discusses best practices

evaluation tool that considers both sustainability and good design, wanted to put their Priority Matrix tool to the test at the recreation center entrance lobby at UPenn.

Following Nancy Harrod’s

PERMACULTURE TECHNIQUES

Permaculture is a philosophy and design system which utilizes a systems thinking approach to create sustainable human habitats by analyzing and duplicating nature’s patterns. It seeks to create productive and sustainable ways of living by understanding the relationships between livestock, plant communities, agricultural crops, architecture, economics, and social systems. This workshop began with a comprehensive overview of the principles and ethics of permaculture, and was followed by a series of case studies that show permaculture in action. Case studies helped to explain the differences in integrated, intensive, and productive permaculture systems and their applications.

Jono Neiger, of Regenerative Design, has a diverse background in ecology, environmental research, conservation, restoration, land stewardship, permaculture, and landscape design. A permaculture teacher and designer since 1996, Jono works to help organizations and individuals further their goals for stewarding their land and creating productive, regenerative human ecosystems. Prior to consulting, Jono worked as a restoration ecologist for The Nature Conservancy of California and as the Permaculture Apprenticeship Program Director at the Lost Valley Educational Center in Oregon. Currently, Jono owns Regenerative Design, a permaculture design and consultation firm in Leverett, Massachusetts.

How can we make a “creative descent” from our current level of dependence on petroleum resources?

The answer, according to Green Day workshop leader Jono Neiger, is permaculture. Permaculture, or the design of sustainable human habitats, mimics natural systems to provide for human needs within the energy and production capacity of the land we occupy.



APPLICATION OF PERMACULTURE ON UPENN'S CAMPUS

Neiger shared examples of permaculture initiatives at all scales to a cross-disciplinary

aquaculture operation in western Massachusetts, the Eco-Village at Berea College in Kentucky, and

Permaculture, while commonly associated with plants and food production, also involves waste and water management, energy production and conservation.

Sasaki group. Permaculture, while commonly associated with plants and food production, also involves waste and water management, energy production and conservation. Neiger's case studies included an integrated aquaponics and

garden allotments with long-term leases for residents of a high density residential development in the city of Zurich. Each represents methods by which humans can provide for their needs using integrated systems with limited inputs and waste.



INTERESTED LISTENERS LEARN ABOUT PERMACULTURE

Workshop participants brainstormed opportunities for bringing permaculture practices to Sasaki projects, from urban agriculture on campuses like the University of Pennsylvania, to cooperative farming in new housing developments with land set aside for open space. The afternoon was spent looking at how permaculture techniques could be integrated into different phases of the Penn Connects plan.

LIZA MEYER

INNOVATIVE WASTEWATER ALTERNATIVES

Comprehensive wastewater management plans integrate the use of on site, cluster, and centralized systems in an economically and environmentally optimal manner within a sustainable management framework that is consistent with land-use and growth plans. Each system can consist of many combinations of wastewater collection, treatment, and dispersal/reuse technologies. While on-site systems serve an individual property and centralized systems serve large communities, cluster systems serve an intermediate number of structures with more than one and as many as hundreds of connections. Cluster systems enable entities to develop a rich array of wastewater solutions that optimize economic and environmental objectives and avoid the difficulties and adverse

community-wide wastewater management; parcel development; solution to an existing defined wastewater need; and optimizing an existing facility's wastewater management practices.

Pio Lombardo, PE, has over 30 years of experience with innovative wastewater management. During his career, Pio has provided consulting services on water and wastewater issues to the USEPA, and is the Engineer of Record for water and wastewater engineering projects with capital costs totaling over \$200 million, including a 0.9 MGD wastewater treatment system using constructed wetlands and UV light for disinfection. Pio has contributed to and co-authored numerous EPA manuals since 1979, including the recent On-Site and Wetlands Manuals, Planning Wastewater Management Systems for Small Communities, and the Cluster Wastewater Systems Planning Manual.

For 15 years, Pio has held senior executive positions, providing leadership, consulting and strategic planning to top national environmental and engineering firms including Dames & Moore, Wheelabrator, Clean Harbors Environmental Services, and Groundwater Technology.

Pio holds a Chemical Engineering degree from the University of Massachusetts and a Masters of Environmental Engineering from the University of Washington. Pio is a registered Professional Engineer in 27 states, a Massachusetts Certified

By reusing wastewater produced on-site, a project can save significant quantities of potable water—and money.

impacts of solely centralized or on-site options.

The Innovative Wastewater Alternatives workshop addressed the successful planning, design, and implementation of wastewater systems within the full range of application types, including:

Wastewater Treatment Plant Operator, and a Diplomate of the American Academy of Environmental Engineers.



WORKSHOP PARTICIPANTS LEARN ABOUT ALTERNATIVE TECHNOLOGIES

Are we flushing valuable resources down the toilet?

Yes, according to Pio Lombardo of Lombardo Associates. Reclaimed water, or wastewater that has been treated to acceptable regulatory levels, can be reused in a variety of ways, including irrigation, fire protection, mechanical & industrial

process water, and flushing toilets. By reusing wastewater produced on-site, a project can save significant quantities of potable water—and money.

Mr. Lombardo led a discussion on the treatment technologies available to designers in order to capture, treat & reuse water on site. He introduced the

concept of a cascading water use system to effectively “close the loop” to minimize water demand. The Sasaki audience discussed case studies with Mr. Lombardo ranging from large-scale residential applications to small, remote systems that allowed the permitting of development that would have otherwise been prohibited because of wastewater disposal issues. Finally, Mr. Lombardo discussed the key steps in researching, analyzing and performing a cost benefit examination to identify viable wastewater alternatives for a given project. Armed with this knowledge, the Sasaki group studied the potential for wastewater reuse at the University of Pennsylvania, identifying a multitude of opportunities stemming from the centralized and dense nature of the urban setting.

KATIE RAYMOND



PIO LOMBARDO SUGGESTS WASTEWATER OPTIONS AT UPENN

DID YOU KNOW?

Bonterra Vineyard, the supplier of our reception wine uses a process called Biodynamic Farming. This farming process is guided by natural cycles and based upon diversity which requires both plants and animals for success.

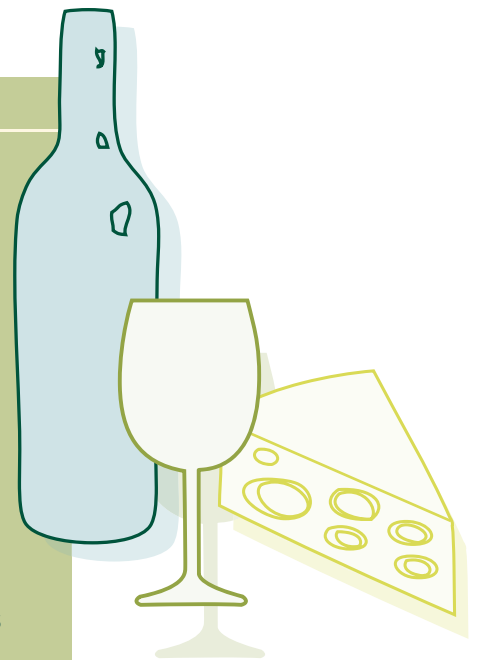
This approach was developed in the 1920s, and has been used to create many of the world's outstanding wines.

Bonterra's commitment to the principal guidelines for organic production are to use materials and practices that enhance the ecological balance of natural systems and that integrate the parts of the farming system into an ecological whole.

The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.

The cheese and crackers that accompanied the wine were also organic. Smith's Country Cheese of Winchendon, MA, made the cheese with fresh milk just minutes after the last cow in their dairy herd is milked.

Late July Organic Snacks of Hyannis, MA (founders of Cape Cod Potato Chips, Inc. and Chatham Village Foods, Inc.) provided the crackers. “Greater availability of organic ingredients has allowed us to bring that dedication to a higher level with our new company. The ingredients for our new snacks are a throwback to the days before modern agribusiness.”



Greg Havens, Steve Benz, and Marcus Springer presented “An Integrated Approach to Sustainable Planning and Design” at the AIA Mississippi Annual Convention June 17–20 in Biloxi, MS.

Sasaki welcomes LEED AP Reetika Vija to the Interiors Discipline in Watertown.

Marcus Springer and Steve Benz testified, last month, before the MA Senate Committee on Global Warming and Climate Change.

SasakiGreen would like to thank David Damon for his contributions and wishes him well in his future work.

Meredith Elbaum attended the National AIA convention in San Antonio as the AIA Committee on the Environment’s representative for greening future conventions.



JOE HIBBARD’S ORGANIC GARDEN

Joe Hibbard is into his 15th year of raised bed organic vegetable gardening in his Belmont back yard. All nutrients are from yard and kitchen waste compost, and pest controls are manual, avoiding agrochemicals.

Sasaki also welcomes LEED AP Steve Benz to Civil Engineering. Steve was the first Civil Engineer to be accredited in the Northeast and sits on the Sustainable Sites Technical Advisory Group to LEED. He is also on the faculty at APPA’s Institute for Facilities Management where he teaches

Stormwater Master Planning and Campus Site Sustainability: Water & Storm Water.

The Boston USGBC affiliate held a town meeting to discuss the needs, opportunities, and potential next steps in creating a more member driven organization. Many Sasaki employees are participating in this endeavor and attended the event.

In September of 2006, we were fortunate to be selected as the design architect for the University of Arizona’s Student Recreation Center Expansion (teamed with M3 Engineering and Arup). This project represents the University’s first LEED Certified project, and our team’s integrated approach to sustainable design was fundamental to our selection.

On Saturday, June 2, team FAT (bike commuters Francesco Mozzati and Angel Cantu, and motorcyclist Tomer Maymon) placed second in the 3-hour division of the Night and Day Challenge. For three hours, the

team bicycled over 25 miles, surmounting some of San Francisco’s most daunting points as they arrived at destinations specified by the organizers. www.nightanddaychallenge.com/results.asp

News about the University of California Santa Barbara Recreation Center Expansion Photovoltaic Panel System Installation: UCSB Facilities Management held a mandatory pre-bid conference and site visit for interested bidders on Tuesday, June 5. The client was pleased with the amount and types of attendees, who ranged from local electrical contractors with past construction experience on campus to regional solar power dealers that design, sell, and install solar products. Bids are due Thursday, June 21. Estimated construction costs are \$1.1 million for the initial 450 panel installation.

Congratulations to our latest LEED AP Chang-Han Shen.



green monster

The Green Monster is Sasaki’s sustainability guru. Please send your burning questions about green practice to: greenmonster@sasaki.com

Dear Green Monster:

Is it better for the environment to eat organic or eat local?

HUNGRY IN HINGHAM

Dear Hungry in Hingham:

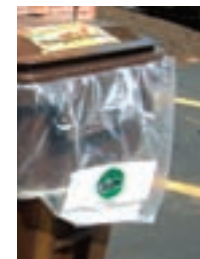
This is not an easy question to answer. Organic foods are free of pesticides, but may be shipped long distances in fossil fuel powered trucks. Local foods, those grown within 250 miles of your home, may have fewer petroleum miles, but may be grown with pesticides. Locally grown organic foods are ideal, but limiting your consumption to these products may significantly diminish your choices.

The decision may come down to taste and availability. Foods grown locally tend to taste fresher, while sustainably grown foods from a far provide more variety.

Sasaki’s choices for the GreenDAY menu demonstrated our sensitivity to sustainability by our local organic menu, biodynamic wines, and non-allergenic, compostable cups and products made from renewable resources, such as corn and sugarcane.



GREEN DAY PARTICIPANTS ENJOYED A MENU OF LOCAL ORGANIC FOODS.



GREEN MONSTER

COMPOST BINS WERE AVAILABLE FOR COLLECTING FOOD SCRAPS AND DISPOSING OF COMPOSTABLE PLATES AND UTENSILS.

PLANNING GREEN

The Planning Green Group has recently focused its efforts on climate issues in Massachusetts. The Commonwealth of Massachusetts took two important steps in responding to greenhouse gas emissions: 1) Executive Order 484 which directs agencies to engage in comprehensive efforts to reduce their greenhouse gas emissions and 2) MEPA Greenhouse Gas Emission Policy which stipulates that certain capital projects proposed in the Commonwealth engage in similar consideration as part of their state approvals process. Several elements of these policies are of interest to the Planning Green group and have been presented at a Monday Discipline meeting as well as at a Planning Green meeting.

This past April, two members of the Planning Green Group attended the SCUP 2nd Smart and Sustainable Campus Conference. Erin Bray presented on a panel highlighting environmental efforts at Auburn University and Stacey Beuttell attended.

ERIN BRAY



WIND ENERGY IS THE TOPIC OF SITE GREEN'S EDUCATIONAL SERIES

SITE GREEN

This summer's SiteGreen educational series focuses on wind energy and the specifics of its siting, design and construction. The series kicks off in July with an in-house presentation from Jeff Brandt, a Boston-based environmental consultant currently working on the Cape Wind project in Cape Cod. In August, the series highlights the Corpus Christi project and their research

into implementation strategies for wind turbines. Finally, in September the series concludes with a yet-to be named field trip to some very windy site.

Also in July, SiteGreen will launch our Green Specs on which Mark Reaves, Danny McGee, and Vince Rico have been diligently working.

ROBYN REED

SPACE GREEN

July will mark the beginning of SpaceGreen's Summer Energy Series, which will include two in-house presentations, one on Transpired Solar Collectors and one by a local utility company concerning their Advanced Buildings Program. The third and final part of the series, in August, will be a trip to visit a project that utilizes innovative solar design strategies. More information will be coming soon.

The SpaceGreen sub-groups have been developing strategies for many different initiatives including Facilities Performance Evaluations, a library of lessons learned, and new hire SpaceGreen orientation pamphlets to be given to all new Architecture and Interiors hires. These two efforts are aimed at utilizing our collective experience and expanding SpaceGreen's capabilities.

NICK CAPONE

pre GreenDAY events

CONTINUED FROM PAGE 3

results of the grants provided to date. For each grant, a member from the project team gave a brief presentation on the purpose of the grant and the results or status of the grant. Topics ranged from the study of light shelves to urban reforestation to water management in arid climates to applications for titanium dioxide.

GreenLAB hosted a LEED Lunch for those interested in understanding the process and intense effort to certify 64 Pleasant Street and shared properties as LEED EB GOLD. We hope to be certified by early Fall. Once certified, 64 Pleasant Street will be the oldest LEED EB building in the history of LEED.



SASAKI CHARLES RIVER CLEAN UP

A hearty thanks to those who made these pre-GreenDAY events happen!

MATT MCKOUEEN

DID YOU KNOW?

The Granola & Trailmix Bars we ate for breakfast on GreenDAY were provided by *New England Natural Bakers* from Franklin County, MA. In order to maintain their natural and organic standards, *New England Natural Bakers* adheres to practices uncommon in the mainstream food industry. For example, their pest control system rejects fumigation and other toxic methods of extermination and instead relies on the vigilant monitoring and the concerted efforts of all of their employees in performing safe and noninvasive tactics.



calendar

- 3** SiteGreen Meeting, 9 am, Lower Overlook
Info: www.scup.org/annualconf/42
- 7-11** CONFERENCE: SCUP-42 "Shaping the Academic Landscape: Integrated Solutions"; Chicago, IL
Info: www.ases.org/solar2007
- 4-6** CONFERENCE: The National Solar Energy Conference; Cleveland, OH
- 10** SiteGreen Education Series: Renewable Energy Siting and Design
- 12** PlanningGreen Meeting, 9 am, Upper Overlook
- 11-12** LEED-NC Technical Review Workshop, Cambridge, MA
Info: www.usgbc.org/workshops
- 18** SpaceGreen Technical Seminar: Transpired Solar Collectors
ATAS International
- 18** LEED-CI Technical Review Workshop, Boston, MA
- 19-20** CONFERENCE: Green Homes and Sustainable Communities 2007; San Francisco, CA
Info: www.ipedinc.net/conferences/Green_Homes_And_Sustainable_Communities_2007.asp
- 23-26** CONFERENCE: Rebuilding Sustainable Communities in Iraq: Policies, Programs, & Projects; University of Massachusetts, Boston, MA
Info: www.cpcs.umb.edu/rsci
- 25** SpaceGreen Meeting, 12:15 pm, EDO
- 26** PlanningGreen Meeting, 9 am, Upper Overlook

august

- 7** SiteGreen Meeting, 9 am, Lower Overlook
- 9** PlanningGreen meeting, 9 am, Upper Overlook
- 13** SYMPOSIUM: SustainAbility: Design for a Better World; New York, NY
Info: www.metropolis.com
- 14** SiteGreen Education Series: Renewable Energy Siting and Design
- 20-23** CONFERENCE: StormCon 2007: North American Surface Water Quality Conference & Exposition; Phoenix, AZ
Info: www.StormCon.com
- 23** PlanningGreen Meeting, 9 am, Upper Overlook
- 29** SpaceGreen Meeting, 12:15 pm, EDO

september

- 4** SiteGreen Meeting, 9 am, Lower Overlook
- 6** Planning Green Meeting, 9 am, Upper Overlook
- 6-8** CONFERENCE: Greening of the Campus VII "Partnering for Sustainability: Enabling a Diverse Future"; Ball State University, Muncie, IN;
Info: www.bsu.edu/greening.
- 20** PlanningGreen Meeting, 9 am, Upper Overlook
- 20-22** CONFERENCE: West Coast Green; San Francisco, CA;
Info: www.westcoastgreen.com
- 24-26** CONFERENCE: Conference on the Science and Education of Land Use: A Transatlantic Multidisciplinary and Comparative Approach; Washington, D.C.;
Info: www.nercrd.psu.edu/TALUC
- 26** CONFERENCE: CSI-NY Annual Trade Show: "Refining Green"; New York, NY;
Info: www.csimetronewyork.org
- 28** SpaceGreen Meeting, 12:15 pm, EDO

■ = Boston area meeting/conference ■ = external meeting/conference ■ = Sasaki

RESOURCES

NEW IN THE LIBRARY:

Verb Conditioning - Architecture Boogazine
By Albert Ferre, Irene Hwang, Tomoko Sakamoto, and Jaime Salazar

XS: Small Structures, Green Architecture
By Phyllis Richardson

Heating, Cooling, Lighting: Design Methods for Architects (Hardcover)
By Norbert Lechner

Material Architecture: emergent materials for innovative buildings and ecological construction
By John E Fernandez

COMPUTER RESOURCES:

CITYgreen for ArcGIS software, Read about it here: www.americanforests.org/productsandpubs/citygreen

EcoTect software has been upgraded to v5.5 with a full suite of sustainable design analytical tools including two complementary programs, Desktop Radiance and BEES, each of which integrates with EcoTect. The updated version of EcoTect is a significant jump in features and analytical capability from the previous version, garnering favorable reports from our primary EcoTect users.

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