

2005 Case Study ~ Prepared by Meeting Strategies Worldwide



Introduction

In 2005 the U. S. Green Building Council's (USGBC) *Greenbuild International Conference & Expo* experiences continued to increase its participation as it has for the past four years. Over 9,700 professionals in the environmentally responsible building and construction sector were registered for the event in Atlanta, Georgia, including architects, engineers, facility managers, developers, contractors, builders, interior designers, government representatives and manufacturers. The conference represents an estimated \$10.2 million in revenue to the host city. In addition, exhibitor booths increased from 220 in 2002, 400 in 2003, and 496 in 2004 to 582 for 2005.

USGBC continues to elevate their ability to produce the most environmentally responsible conference possible by enrolling local support and participation. Using the IMEX Environmentally Responsible Meetings Award as a guide and motivator, USGBC pursues and identifies the potential areas that environmentally responsible practices can be implemented. A core environmental driver of *Greenbuild* is to push the environmental boundaries in each area to continually improve and expand efforts to minimize negative environmental impacts and leave positive legacies in host communities.

Some highlights of *Greenbuild's* impact on Atlanta in 2005:

- Brought a permanent recycling program to the Georgia World Congress Center.
- Composting of all food waste was made available for the conference and delivered to a local prison for processing.
- Two of the conference hotels put permanent recycling programs in place – a first for Atlanta.
- The conference efforts also established a recycling program made available to hotels for free who were willing to sign long term contracts with provider.
- The caterer permanently changed out the polystyrene, plastic disposable cups used at multiple facilities for biodegradable cornstarch cups.



Minimizing Environmental Impacts

What is the environmental impact of Greenbuild?

As the number of delegates continues to increase at *Greenbuild* so does the increased impact on the environment. *Greenbuild* strives to improve their environmental performance by identifying realistic, achievable policies and practices that reduce the environmental impact in almost every aspect of the conference.

Tracking consumption patterns related to potential waste from *Greenbuild* helps minimize the environmental impact of the conference. USGBC concentrates on the following areas: energy, air quality, water usage, solid waste and toxic materials.



How is environmental impact being reduced?

USGBC's overall approach to minimizing the environmental impact of *Greenbuild* focuses on¹:

1. Reducing consumption, pollution and waste at the source;
2. Reusing where possible;
3. Recycling materials that are consumed so they are not wasted; and
4. Disposing of unavoidable waste in an environmentally safe manner.

The pre-conference measures employed for *Greenbuild 2005* included working with the local host committee members to assist with research and gain support to implement waste management practices. This mainly consisted of matching recycling companies up with the convention center and conference hotels to ensure recycling was affordable and readily available. In addition, supplier contracts for hotels, caterer and convention center included environmental clauses to ensure implementation. Attendees were also asked to participate in the greening efforts. The success of the pre-conference measures was evaluated by verifying that requests were followed and to what degree during the event. Measures to minimize environmental impacts are described in more detail below.

Many of the environmental outcomes of *Greenbuild 2005* can be compared and contrasted over the four year history of this event. Both the facilities where *Greenbuild* was held in 2003 and 2004 were LEED certified (LEED - Leadership in Energy & Environmental Design - is the USGBC's voluntary, consensus-based national standard for developing high-performance, sustainable buildings). Pittsburgh's convention center, the David L. Lawrence Convention Center was Gold certified and Portland's, Oregon Convention Center was LEED EB (existing buildings) certified. Although Atlanta did not receive a LEED rating, the conference was catalysis for the convention center to pursue LEED. (The Georgia World Congress Center is expected to reach for LEED certification in early 2006).

Energy efficiency

Environmental impact

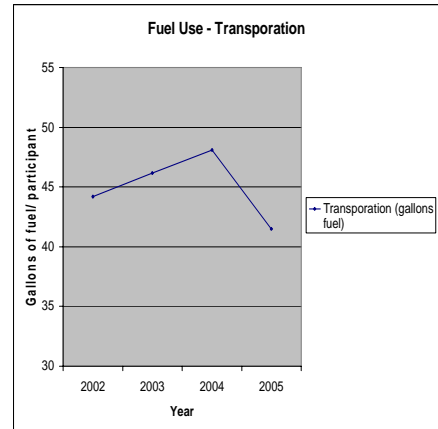
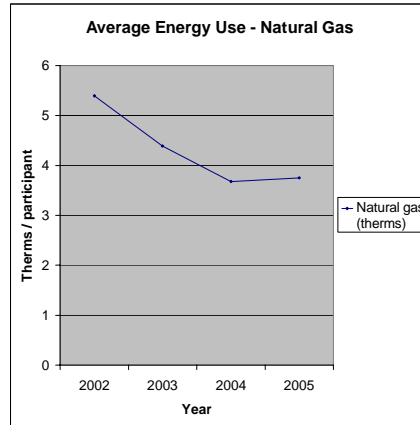
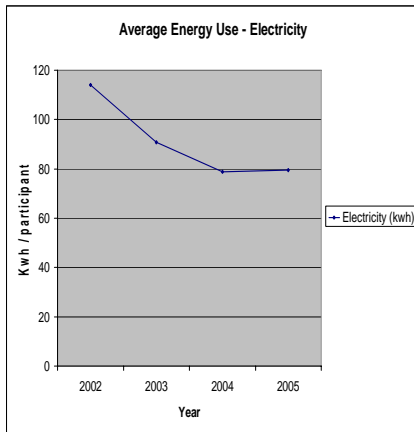
Total estimated energy use associated with *Greenbuild* is summarized in the following table (data supplied by Leonardo Academy):

Greenbuild Energy Use	2002	2003	2004	2005
Electricity (kilowatt hours)	478,052	476,000	617,145	773,688
Natural Gas (therms)	22,605	23,000	28,760	36,459
Transportation (gallons of fuel)	185,217	242,000	376,357	403,593

Although total energy used during *Greenbuild* increased in 2005. Average per registrant use of electricity and natural gas has overall decreased steadily since 2002, but increased slightly from 2004 to 2005. Fuel use per delegate for transportation decreased this year.

Greenbuild Energy Use Per Registrant	2002	2003	2004	2005
Electricity (kilowatt hours)	114.12	90.82	78.85	79.56
Natural Gas (therms)	5.4	4.39	3.67	3.75
Transportation (gallons of fuel)	44.22	46.17	48.08	41.50

¹ Supported by the National Pollution Prevention Policy of the United States Environmental Protection Agency, 2004. <http://www.epa.gov/opptintr/p2home/p2policy/definitions.htm>.



Pre-conference measures

The following actions were taken to promote energy efficiency prior to the conference:

- Convention center was asked to reduce the lights, power and HVAC in the exhibit hall during move in and out.
- Hotels were selected within walking distance of the convention center or public transportation to minimize additional transportation needs. In addition, the hotels were asked to implement the following:
 - the towel and sheets reuse program;
 - not replace amenities unless consumed; and
 - shut off HVAC when guests are not in their room.

Verification

Both the convention center and host hotels complied with the environmental practices requested. In addition:

- Stetson Convention Services used EnergyStar lighting at the registration counter, which uses 30% less energy.

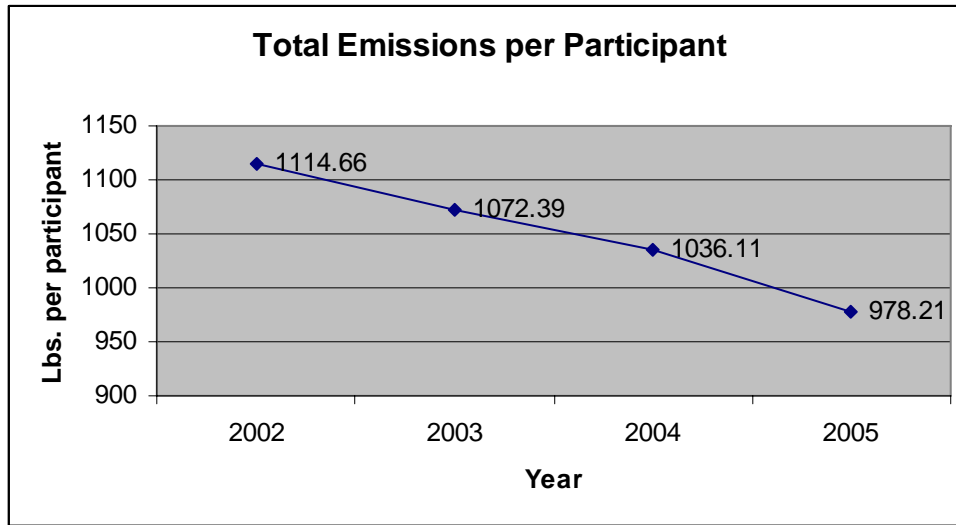
Air quality

Environmental impact

To mitigate air quality issues, USGBC provided an emission offset program facilitated by the Leonardo Academy *Cleaner and Greener Event Certification* program where, 95% of the funds collected are used for offset and retired emissions and 5% for administration. The Leonardo Academy has reported the following estimated emissions for *Greenbuild* since 2002:

Pollutant Type (lbs.)	2002	2003	2004	2005
Carbon dioxide (CO2)	4,660,414	5,606,214	8,096,566	9,512,121
Sulfur dioxide (SO2)	1750	4,922	941	7,240
Nitrogen Oxide (NOx)	6144	8,007	10,149	13,423
Particulates (PM10)	990	1,251	1,946	2,133
Mercury (Hg)	0.0121	0.02346	0.00166	.00310

Although quantities of each pollutant type have fluctuated, total emissions per registrant have declined since 2002:



Pre-conference measures

USBGC implemented the following actions prior to the conference to address air and water quality issues:

- Delegates were invited to participate in the *Cleaner and Greener* program by making a donation of emission reductions or dollars to offset the emissions produced by the conference through the *Greenbuild* website.
- Sponsors were solicited to assist in maximizing the emission offsets.
- Exhibitors were asked to use displays that incorporated indoor air quality principles outlined in LEED.
- The convention center and host hotels were requested to use environmentally friendly cleaners.
- Caterers were requested to use local and organic produce where feasible, minimizing transportation.

Verification

In addition to pre-conference measures, water and air quality issues were addressed in the following ways:

- 51% of food served was locally grown or organic.
- Stetson Convention Services:
 - used of natural gas fork lifts and hand carts;
 - made biodegradable shipping and packing materials available to exhibitors; and
 - estimated 75% of show-required equipment's final assembly was manufactured locally using local labor.
 - Rail shipments were not implemented this year. However, using a local rental equipment company allowed us to save approximately: 11800 lbs of CO2 emissions, 2 gallon of spilled oil, 16 lbs of Hydrocarbons, and 22 lbs of NOx emissions.

Emissions offset at the *Greenbuild 2005 International Conference & Expo* are summarized in the following table (a complete and up to date report is available on request):

Pollutant Type	Emissions Caused by Event Energy Use (lbs.)	Emission Reduction Offsets by Donor and Amount (lbs.)						Total Emissions Offset (lbs.)	Expected Emissions Offset
		Renewable Choice Energy	3 Phases	Milliken	Leonardo Academy	Philips Lighting	Individual Donations		
Carbon Dioxide (CO2)	9,512,121	7,723,639	561,552	9,779,829	--	200,000	35,561	18,300,581	192%
Sulfur Dioxide (SO2)	7,240	33,583	1,035	--	2,000	--	155	38,179	527%
Nitrogen Oxide (NOx)	13,423	16,211	1,179	--	--	--	75	17,464	130%
Particulates (PM10)	2,133	709	52	--	--	--	3	764	36%
Mercury (Hg)	.00310	0.14658	0.01066	--	--	--	0.00068	0.15791	5,095%

Water conservation

Environmental Impact

Whether it is through drinking water, taking showers, doing laundry or washing dishes, the presence of *Greenbuild* delegates draws on host community water resources. The US Environmental Protection Agency estimates the average conference participant uses 846 gallons of water². Assuming these average consumption rates *Greenbuild 2005* delegates used an estimated 8,266,500 gallons of water.

Pre-conference measures

To promote water conservation *Greenbuild 2005* organizers undertook the following actions prior to the conference:

- Convention center was asked to:
 - serve drinking water from large containers rather than individual bottles; and
 - sweep, not spray parking lots, sidewalks and driveways.
- Caterer was requested to use water saving strategies like not pre-filling drinking glasses at meal functions or providing a saucer under the coffee cups.
- Host hotels were requested:
 - to provide a towel and sheet reuse program; and
 - if their facilities made use of low flow showers and toilets.

Verification

The convention center, caterer and host hotels complied with the environmental practices requested above.

- Not pre-filling water glasses at sit down luncheons saved approximately 700 gallons of drinking water.
- Rather than providing individual bottled water the convention center used water stations and compostable cups. ***Saving the organization over \$25,000.***
- Floral arrangements used were leftover from a previous conference saving approx 1400 cut flowers and 30 gallons of water for usual bud vase décor.

Waste minimization

Environmental impact

Greenbuild 2005 composted 4,562 pounds and donated ,400 pounds of food. Materials recycled as percentages of total weight were estimated between 26-50%.

Pre-conference measures

The following waste minimization actions were undertaken by *Greenbuild 2005* organizers prior to the conference:

- Convention center, caterer and hotels were asked to have reduction, recycling, and reuse programs in place that:
 - reduce waste;
 - recycle glass, aluminum, plastic, paper, and cardboard;
 - reuse materials where possible and appropriate; and
 - donate left over food.
- Exhibitors were requested to:
 - minimize packaging; the amount of collateral material distributed; and
 - participate in recycling cardboard and freight materials
 - used electronic exhibitor kits.
- Decorator company was asked to provide:
 - donation area for giveaways and building supplies; and
 - instructions for exhibitors to assist with recycling efforts.

² United States Environmental Protection Agency (2000). *A Method for Quantifying Environmental Indicators of Select Leisure Activities in the United States*. EPA-231-T-00-01.

Verification

The convention center, caterer, exhibitors, decorator and hotels followed requested practices. In addition:

- Caterers reduced source waste by using china and linen service, serving condiments in bulk and avoiding the use of garnishes. Compostable cups were used at water stations in the meeting hall.
- 4,562 pounds of food were composted, representing approximately 11% of food served. This is the first time food composting has been undertaken by the convention center. The composted material was transferred to a local prison for processing.
- Stetson Convention Services implemented the following practices.
 - Recycled shipping and packing materials were made available to exhibitors. These items include reusable wood pallets, recyclable shrink wrap, and reusable cardboard boxes. Shrink wrap that was received at the dock during Exhibitor move in was recycled during move out as packing material. Approximately 881 cardboard boxes, or 1 ton, were reused for packing materials, ultimately saving over 9 cubic yards of landfill space and preventing the demolition of 17 trees.
 - 56,000 square feet of Visqueen was used at *Greenbuild 2005*. The Visqueen used is 100% recyclable and made from 50% recycled content.
 - Made carpet that meets LEED requirements of 40% post-consumer recycled content by weight available to exhibitors.
 - Exhibitors ordered 19,380 sq. ft. of carpet padding. 46% of Exhibitors specifically ordered "Green" carpet padding. The remaining 54% of Exhibitors who ordered carpet padding still received the "Green" product. Padding is made of 100% recycled synthetic fibers and exceeds FHA-HUD flammability requirements. Stetson reuses the carpet padding from show to show and is used as packing material when no longer suitable for show use.

Environmental purchasing

Environmental impact

In hosting over 9,700 attendees, USGBC acknowledges the tremendous opportunity to reduce the waste generated by the choices made in purchasing responsible products and services. USGBC also realizes their ability to influence the purchasing practices of suppliers to promote more environmentally responsible decisions. Additionally, emphasizing locally grown and produced products also benefits the local communities. The purchasing decisions impact the environment in a variety of ways and consider both:

1. The elements of production and distribution such as:
 - Amount of energy required.
 - Nature of the resources used (i.e. are they renewable? organic? local? recycled? fair trade?).
2. The benefits of selecting a particular product such as:
 - Waste produced throughout the lifecycle of the product or service (i.e. packaging, energy efficiency, disposal).
 - Lifecycle of the product or service.

Pre-conference measures

Greenbuild 2005 organizers practiced and promoted environmental purchasing prior to the conference and expo:

- Convention center and hotels were asked to provide:
 - Bathroom supplies: minimum 20% recycled products for hand towels and toilet paper.
 - Environmentally responsible cleaning products: for carpets, floors, kitchens and bathrooms; minimum 50% of products used to be environmentally responsible.
- Caterer was requested to provide locally grown and organic foods wherever possible and affordable (minimum 15% of meals).
- Decorator company was asked to:
 - Use recyclable carpet;
 - Use reusable signage; earth friendly cleaning products; and
 - Offer "green" exhibit booth option for exhibitors.

Verification

The convention center, caterer, decorator and hotels followed requested practices. In addition:

- *Greenbuild 2005* conference organizers used:

- name badges printed on recycled paper and recycled name badge holders; 3,200 conference badges were returned
- conference bags or giveaways made of recycled materials; and
- 51% of food served was local or organic.
- Stetson Convention Services purchased:
 - exhibitor binders made from 35% post-consumer recovered fiber and recycled paper;
 - Cloroplast boards for 50% of information signage, which is 100% recyclable; and reusable Sintra signage for aisle and show signage;
 - either water or soy based sign inks (water-based graphics may be removed so signage can be reused);
 - aisle carpet that is fully recyclable;
 - BioBag trash can liners, made of 100% biodegradable and compostable materials; and
 - reusable Woodstalk shelving for magazine bins and computer kiosks. Woodstalk is an engineered fiberboard made from annually renewable wheat straw fiber that does not contain any wood species and is manufactured using no formaldehyde-containing compounds.
 - 27,650 sq. ft. or 2,765 linear feet of exhibitor carpet ordered. This carpet meets the LEED requirement of 40% post-industrial recycled content by weight. 41% of the exhibitor ordered carpet was our "Green" EcoSolution Q carpet. The remaining 59% of exhibitor carpet is reused by Stetson from show to show.



Economic Indicators

In addition to costs avoided, *Greenbuild 2005* received exceptional and valuable coverage in national, regional and local media. A sample of press articles can be provided upon request.



Commitment to Change

USGBC is committed to using the *Greenbuild* conference as an opportunity to encourage environmental behavior in both the building and meetings industry. USGBC recognizes that the *Greenbuild* conference offers a tremendous opportunity to drive change within the meetings industry. The buying power of this event and the nature of the event have been successful in influencing lasting change. This conference is unique not only because of its buying power in producing city-wide events, but in the local city influence of its members and attendees.

As an example: the local host committee members in Atlanta ensured that a recycling company (they used two) contacted the convention center and host hotels to establish recycling programs. One of the recycling companies offered free hauling services to the hotels they contacted. They agreed to train, provide bins and signage and haul the materials away for free.

Organizers were explicit in requesting hotels, decorators, caterers and the convention center follow environmental practices as specified above. In doing so *Greenbuild 2005* helped to catalyze more permanent and lasting change in support of environmental responsibility beyond the context of the conference:

- Convention center now has a permanent recycling plan in place and is going for LEED certification of the building in early 2006.
- 2 of the conference hotels have implemented permanent recycling programs.



Commitment to Community

The Legacy 2005 Program will last a total of 18 months with the goal to educate, train and motivate local building professionals, government agencies, and developers to conduct their activities in a sustainable manner. Course curriculum and attendee demographics will be coordinated with other local and national educational efforts. This year's project has been designed to attract those that live, work and play in urban Atlanta. Inner-city dwellers are the direct or indirect benefactors, yet most are completely unaware of local and national sustainable efforts. Legacy courses will be held at the City of Atlanta conference rooms and Atlanta University Center schools, which include

three historically black colleges and universities: Morehouse College, Spellman College and Clark Atlanta University.

Goals include:

- To facilitate opportunities to assess environmental impacts before starting an activity or project and before destroying a facility or leaving a site.
- To inspire local businesses to create, build and manage facilities acknowledging the efficient use of energy and materials.
- To implement the sustainable use of renewable resources, the reduction of waste production, and the responsible disposal of wastes.
- To closely evaluate recycling and composting opportunities.
- To educate contractors and suppliers on the concepts of sustainability, and where necessary, require improvements in their practices to make them consistent with the environmentally sound management methods of our USGBC.

By inclusion, Atlanta's metropolitan professionals, students and future leaders will reshape sustainability.

Conference donations include individual exhibiting companies who donated various goods of reusable items. Donated items include flooring from four different companies, windows, building blocks, paper products, clipboards, glue, mints, conference logo bags, various publications, three cases of apples, and carpet donated by Stetson. Companies that received donations include: Gateway Center, Atlanta Food Bank, FCS Home Resource Center, Habitat Restore, Interface Flooring Systems, and Teacher's Supply Store Marietta.



Commitment to Conservation

As with USGBC's commitment to change, Meeting Strategies Worldwide absolutely committed to continually improving the environmental performance of *Greenbuild*. This report has outlined specific efforts to identify the environmental, economic and community impacts of *Greenbuild*'s actions and how these actions work to promote enhanced environmental responsibility in Meeting Strategies Worldwide's own practices and influence the activities of our *Greenbuild* partners, including delegates and suppliers. With the assistance of Meeting Strategies Worldwide, USGBC has continued to raise the standard for environmental responsibility at *Greenbuild* in 2005 in a manner that considers the broad ecological footprint of activities and continues to identify new, creative and innovative ways to meet the challenge of reducing this footprint.



Lessons Learned

As USGBC continues to raise the bar of environmental practices and expectations, so do lessons learned in achieving those goals. A highlight of lessons that we will take forward:

- Although conference hotels signed contracts containing language to ensure environmental requests were met, three out of the five hotels ultimately did not comply. In future contracts, USGBC needs to determine a process or procedure to handle hotels that breach the environmental conditions agreed to in the hotel contracts. What consequences are going to be associated with the breach? Who will communicate this and when?
- Some of the issues which arose with hotels may be avoided if hotels were better informed prior to the contracting phase. The environmental requirements should be discussed in detail in the site selection process prior to the signing of contracts.
- No clear guidelines have been established for sponsors when advertising their services. Evaluate the benefits of sponsor publications and the value of the materials for attendees. Research creative solutions for sponsors to advertise that may decrease the amount of paper generated. If printed materials are used require sponsors to adhere to environmentally responsible printing standards, (minimum of 30% post-consumer recycled paper – tree free would be better – using vegetable based inks and minimize the number of pages)

- Although USGBC has successfully tracked a number of environmental impact indicators over the past four years, such as energy use, we need to continue to track other impact-related data, such as the volume of waste sent to landfills, to ensure we are able to measure the ecological footprint of *Greenbuild*, and the extent to which it is being reduced.
- USGBC needs to provide information about what environmental practices are being implemented as a part of *Greenbuild* in a variety of methods, besides just on the website and a brief mention in the program. Strategies to educate should include at a minimum announcements at the general session and power point presentation.
- USGBC has succeeded in curbing electricity and natural gas consumption on a per participant basis at *Greenbuild* since 2002. *Greenbuild 2006* will focus more on the Expo portion of the conference to continue to minimize the huge environmental impacts associated with exhibits.