

# @ Your Service

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Hospitality Branch of the Management Practice Specialty  
American Society of Safety Engineers



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Environmental concerns are big news today. “Green buildings” and “carbon-neutral” endeavors have received much media attention recently, and interest is growing in all things environmental. With increased public awareness, discussion of changes to our environment and rising oil prices, it is clear that “greening” is one of the major issues of our time.

The hospitality industry has been at the forefront of today's greening trend. The lodging segment of hospitality in particular has experienced a swell of activity related to environmental and conservation issues. Environmentally conscious measures have gone beyond simple programs to reduce the laundering of linens to encompass every aspect of a facility's design and the way it is operated.

The U.S. Environmental Protection Agency's and the U.S. Department of Energy's “Energy Star Program” and the U.S. Green Building Council's LEED certification are examples of sophisticated measures used to make our physical facilities more environmentally friendly. The operation side of the equation, including the work practices, tools, equipment and materials used on the job, are another huge part of the “green” picture.

Safety, health and environmental professionals must understand the implications of this increased focus on environmental concerns. Ideally, efforts to make an operation more “green” can also result in improved safety and health for workers involved and for the general public.

Greening efforts eliminate or reduce some traditional risks, but they may increase existing risks or introduce new ones. Hospitality Branch members are ready to work within the risk assessment/management areas.

We are proud to present a white paper on the safety implications of the greening of hospitality. This **White Paper** provides a great starting point for discussion of the implications of greening within the hospitality industry.

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## Safety Implications of Greening: Hospitality Executive Leadership Opportunities

*By Fay Feeney, CSP, ARM*

### Executive Summary

Environmental stewardship or “greening”—responsibly managing business operations to minimize their impact on the environment—is an important topic in business today.

Investors and a new generation of customers demand corporate environmental awareness and responsibility. Greening has also received much attention from the media, government and public.

Hospitality businesses (hotels, casinos, restaurants, amusement parks, country clubs and golf courses) recognize greening as an opportunity to reduce costs, improve operational efficiency, increase brand equity and reduce safety and health risks to employees and guests.

This white paper provides the framework for you to begin or enhance greening efforts within your organization and includes:

- A history of greening in the hospitality industry
- Key greening issues, risks and benefits
- Real-life examples of greening programs in the hospitality industry
- Tips for starting a greening program

Safety, health and environmental (SH&E) professionals have a broad range of capabilities, skills and experience to assist in developing effective and profitable greening programs.

### What is Greening?

Greening or environmental stewardship means taking responsibility for reducing the environmental impacts of the services you provide and the businesses you operate. The

U.S. Environmental Protection Agency (EPA) has defined environmental stewardship as “an ethic of respect” for the inherent values of healthy natural systems (the environment) and as a practice that sustains those benefits for current and future generations.

The practice of stewardship is a voluntary endeavor shaped by many factors:

- Prevailing laws, regulations and codes
- Economic policies and market force
- Societal values

Stewardship practices may also be best management practices.

### Greening Examples

- **Reducing use of hazardous products and materials.**  
This reduces safety and health risks to employees and guests, and it also reduces the amount of hazardous wastes to be disposed.
- **Using more energy-efficient equipment in heating, cooling and lighting and in construction materials for remodeling or expansions.**
- **Recycling**  
—For employees and guests, including electronic goods  
—Reusable product packaging around single-use items  
—Lifecycle product analysis
- **Using energy-efficient or alternative fuel vehicles.**  
—Energy and environmental conservation  
—Ride-share programs  
—“Work-at-home” programs to minimize travel and traffic
- **Water and natural resource conservation.**  
—In housekeeping and maintenance  
—Environmentally friendly land use



## Historical Perspective of Hospitality Greening

The “Greening of Hospitality” began in the lodging sector under the discipline of energy management. In the early 1970s, the American Hotel & Motel Association (AH&MA), now the American Hotel & Lodging Association (AH&LA), organized an Executive Engineers Committee to address the escalating cost of energy. Aspects of the greening of hospitality were reflected in water conservation, recycling, architectural considerations, use of energy-efficient equipment and staff involvement in conserving electricity.

Energy management concerns increased dramatically during the 1973-1974 Middle East oil embargo. An AH&MA Affiliate, The Hospitality, Travel and Research Foundation, implemented a \$615,000 directed grant (partnered with Honeywell, Inc. Technology Strategy Center) from the U. S. Department of Energy. Six properties with different functions and geography were extensively submetered for energy use, and the lodging industry became the most knowledgeable in actual energy, even more than heavy industries such as steel and automobile manufacture.

This knowledge helped develop action plans for the lodging industry. Another partner to the Executive Engineers Committee was the National Restaurant Association’s Managers, Architects, Engineers and Construction Officers (MAECO) Group. In combination, they developed significant energy and greening initiatives for the two segments of the hospitality industry.

AH&MA’s Communications Department sponsored an environmental program competition. Beginning in the early 1980s, properties submitted entries featuring specific techniques to control energy use, implement water conservation and reuse programs and enact recycling initiatives and activities that helped with wildlife and wetland preservation, especially in resort locations.

In the mid-1980s, an environmental committee was organized to bring together lodging corporation representatives to administer an awards program and to gather data for publication in articles, newsletters and directives. Since much of the implementation and administration of greening programs involved engineering and maintenance functions, AH&MA combined the engineering and environmental officers into an Executive Engineers and Environment Committee, which continues under the programs of AH&LA.

Beginning in the 1990s, a close working relationship was developed with EPA, and that agency is represented on AH&LA’s committee. During recent years, the lodging industry has actively participated in and supported the EPA’s Energy Star program. Under a quarter-of-a-million-dollar grant administered through the Educational Institute, six hotel administration schools conducted field work with properties in the vicinity of their campuses and provided reports and a video to promote the EPA program, Water Alliances for Voluntary Efficiency (WAVE).

The industry moved through a brief period where greening was addressed under eco-tourism and emphasized sustainability and feasibility. The hospitality industry is again challenged to significantly support and expand the greening of the lodging industry through new and technologically supported alternatives.

## Benefits of Greening in the Hospitality Industry

- Philadelphia’s Sheraton Rittenhouse Square installed compact fluorescents and saved 78% in energy costs, with a payback in two years. (*Building Design + Construction*, November 2006)
- Indoor air quality. Seventy million Americans suffer from allergies, 12 million from asthma, and 10 million from

environment-related illness or chemical sensitivity. (Pure Solutions, Buffalo, NY.)

- A study found that 58% of travelers would be willing to pay slightly more for allergy-free rooms. The same study reported that 90% of business travelers and 82% of pleasure travelers expressed an interest in allergy-free rooms. (Research Institute, Cornell University.)
- Marriott International reports 40% of its corporate clients ask about environmental issues in their Requests for Proposals for corporate rates.
- The Travel Industry Association of America reports that 43 million travelers say they prefer to do business with companies that share their concern about the environment.
- Michigan officials cite a Travel Industry Association of America statistic indicating that 43 million Americans identify themselves as “eco-tourists” and are willing to pay 8.5% more to those who supply environmentally sensitive travel services.
- According to the California Green Lodging Program, the hospitality industry spends \$3.7 billion on energy. Electricity use accounts for 60% to 70% of the utility costs of a typical hotel.
- California officials cite EPA statistics indicating that for every dollar invested in making a lodging facility greener through energy-efficient lighting upgrades, the facility reaps \$6.27.
- Compact fluorescent light bulbs can last ten times as long as incandescent and use 75% less energy. A typical 60-watt incandescent bulb replaced with a compact fluorescent bulb results in \$25 in savings over the bulb’s lifetime.

- Light-emitting-diode (LED) exit signs consume 95% less electricity than incandescent exit signs and 75% less electricity than compact fluorescent exit signs over a 20-year lifecycle rating, virtually eliminating maintenance and replacement.
- HVAC systems typically constitute 30% or more of a lodging facility’s total energy use, a target for efficiency efforts.

## Recommendations for Moving Forward with Greening

### Starting Off

Creating a “Go Green” sustainable culture is not a task for any one individual. Discuss this white paper with your management. We welcome your calls and are happy to lead, facilitate and speak to make the connection in this discussion.

Management support and involvement is critical for the success of a greening initiative. Once you have decided to proceed, we suggest that you select a project coordinator and team with representatives from management, engineering, marketing, public relations and human resources. The long-term objective is to improve your business value and the health and safety of guests and employees. This will take a team effort!

Do not let greening overwhelm you. Ask yourself:

1. Where do we start?
2. Where are our greatest opportunities?
3. What about planning and budgeting?

The first step is to evaluate your current greening status by looking at key performance indicators: energy and water use, safety metrics, energy equipment efficiency, construction practices, hazardous chemical use, waste disposal practices, environmental

and safety training and legal and regulatory compliance. After you assemble this information, you can educate your team and employees, communicate your objectives and actions, set priorities and goals and establish timelines.

Consider Marriott's green initiative as an example to help you shape your thinking. Marriott encourages all hotels to promote and participate in its Environmentally Conscious Hospitality Operations (ECHO) program. ECHO provides guidance to properties in five key areas:

- Water and energy conservation
- Clean air initiatives
- Waste management
- Wildlife preservation
- Cleanup campaigns

For more information on Marriott's ECHO program, visit:

<http://www.marriott.com/marriott.mi?page=environmentalInitiatives>

### Housekeeping & Maintenance

Greening your housekeeping and maintenance programs is a good start that can be implemented with very little cost. Meet with your cleaning and maintenance crews as well as your product procurement team to discuss the possibility of replacing hazardous products currently used with more environmentally friendly ones. Consider reusing/recycling products or materials to improve waste disposal practices. You can start small and tackle significantly larger greening projects.

### HVAC & Operating Systems

Existing buildings have multiple operating systems from HVAC to water heaters, electric controls, etc. Over time, thermostats, vents, heating and cooling systems no longer operate within their design specifications.

Have your building "commissioned" to ensure proper system alignment and calibration so that all systems operate at their designed efficiency, i.e., ducts are connected and insulated, sensors are operational, lighting control systems function properly and drainage is provided when needed.

Companies that perform commissioning are certified by three organizations: 1) Building Commissioning Association, 2) Associated Air Balance Council and 3) National Environmental Balancing Bureau. Select a commissioning company that has a track record of involvement as a conference speaker, serves on committees for commissioning and has demonstrated field expertise with current and prior clients. You may want to conduct commissioning prior to your benchmarking the employees and guests about their perceptions of the building environment.

### Water Usage

Hotel operations put a significant demand on the local water supply. As the cost of water continues to escalate, conservation not only saves an invaluable resource, it also saves money. Bring your guests into the conservation process. Tell them what you are doing to protect the environment and ask for their help.

Some properties may be on a private well system, but private water systems also demand conservation. These properties have additional water treatment issues. Reuse this resource for irrigation so water is cycled back into the soil and aquifer. From a property protection standpoint, this resource is also vital for maintaining the viability of fire protection systems (private hydrants, automatic fire sprinkler system).

Leaks can be a problem. Running toilets waste a significant amount of water, and other types of leaks can create mold spore exposures. One of the biggest challenges is locating water leaks behind wall panels and under floors.



Leak detection can be approached through a preventative maintenance program. You may also be able to use waterless toilets in public area restrooms.

Hot water wastes energy and is a safety concern. Hot water can cause scalding burns. The temperature of hot water used for personal washing should be kept under 125°F so as to not scald individuals and waste energy. Over 100,000 people are treated annually in hospitals for scald burns. The most susceptible individuals to scald burns are youngsters under five years old and people over 65 years old. Maintaining lower water temperatures prevents employee and customer burn injuries. Hot water heated in tanks can potentially leak and grow bacteria. One solution is installing tankless hot water heaters. These units have a longer life span, use less gas, emit less nitrogen oxide and provide tighter temperature control. The units have no tank to leak, and they do not cause problems related to the growth of bacteria such as Legionella.

### Lighting

Next to temperature, no other building system has as profound effect on occupant comfort and productivity as lighting. Engineers and architects now treat lighting as an ergonomic issue. The goal is to have energy-efficient lighting that is comfortable, provides pleasure and is energy-efficient.

The amount of light required depends on the application, including safety and security considerations. Lighting energy costs can exceed 20% of your electric bill. Reduce your electric use by lowering lighting. People prefer it. You also lower the heat buildup and cool load on your property.

Replace incandescent light bulbs with compact fluorescent energy-efficient bulbs that use a fraction of the electricity and last almost 10,000 hours longer, thus reducing carbon dioxide emissions and saving you money. (Each fluorescent bulb uses only 25%

of the energy and saves you approximately \$25+ in electric charges over the life of the bulb.)

Your utility company may have financial incentives to replace old equipment with new energy-efficient products. Buildings can also save on power costs by using LED exit signs and T8 linear fluorescent lamps. LED signs use less than 20% of the energy of an incandescent bulb and last ten years versus three months, save money and resources and provide failsafe emergency signage at exit ways. Install occupancy sensor controls that turn lights off in unoccupied areas (guest/meeting rooms, hallways, stairwells, garages and restrooms).

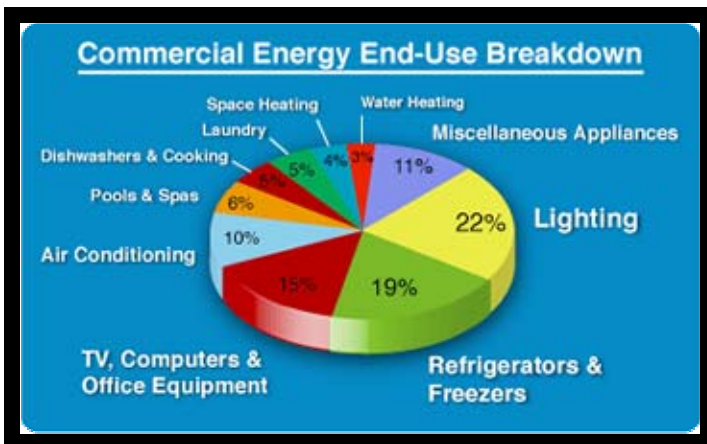
The Fairmont's Sonoma Mission Inn and Spa saved approximately \$2,500 per month by changing 4,400 incandescent light bulbs. This resulted in a savings of \$61,000 a year in electricity costs, which equals 203,000 kilowatt hours and 300,000 pounds of carbon dioxide in the atmosphere.

The lighting selection you choose should be based not only on energy savings, but also on light quality, maintenance costs and disposal costs. Access issues and handling of hazardous materials can influence the latter two costs.

### Recycling

Do not overlook your waste stream: recycle. If you can separate white paper, cans, bottles, glass, plastic and mixed paper from wet garbage, you can reduce the waste stream and save money (the average cost per ton of material disposed at a landfill is approximately \$50). You may also be able to reduce the number of garbage pickups, which can save even more money.





The use of green cleaners is better for the environment, improves air quality in the building and reduces/eliminates some of the requirements for personal protective equipment (PPE) and medical monitoring for employees using green cleaners. Removing toxins from cleaning chemicals also lowers disposal costs if they are not considered hazardous.

Steam vapor cleaning machines heat water to 298°F and use super-heated vapor to clean and sanitize surfaces. This technology also kills bacteria, mold, mildew, fungus, E. coli and Norwalk virus that improve the health of all people inside the building.

## Indoor Air Quality

### Housekeeping

Establish strict chemical standards for cleaning chemicals to reduce employee and customer exposure to toxins (low or zero volatile organic compounds (VOCs)) and to non-odorous chemicals.

For example, select green floor care products that have been certified by either Green Seal® or EcoLogoM, the leading North American green certification organizations. A floor care chemical and its ingredients must be analyzed to be green-certified. To earn certification, the product must show that it:

- Has a reduced impact on the environment when compared to similar products used for the same or similar purpose
- Includes ingredients (or a greater number of ingredients) that are biodegradable and non-toxic
- Performs as well as, if not better than, a comparable non-green product
- Does not include (or has considerably fewer) harmful ingredients, such as VOCs, carcinogens and endocrine disruptors, which can harm glands, hormones and many body functions
- Does not contain hazardous byproducts
- Is packaged in recyclable materials
- Meets all safety standards for use of the product



### No Smoking

Improved air quality can be accomplished by eliminating smoking in rooms.

### Maintenance

Buildings undergo a constant regiment of painting to maintain surface conditions that are clean, easy to maintain and create a visually appealing working environment.

The trend is to continue to lower paint toxicity. Choosing a paint that meets new standards will improve air quality for the person painting and for other people in the building.

Maintaining building temperature at a consistent level and increasing ventilation and the use of natural light improve the building environment. Hotels should also consider:

- Cotton towels and linens with no petrochemical components
- Low-flow showerheads
- Low-flow toilets or water displacement devices with current toilets
- Low-flow faucets
- Reuse of linen and towels

- Use of recyclable disposables versus plastic products

In the laundry, use dryers with moisture sensors to control energy use, prevent over drying/damage to materials and shorten drying cycles to improve laundry room productivity.

Food service uses energy and poses many safety and health hazards. Installing strip curtains and automatic door closures in walk-in coolers and freezers controls energy loss, saves on energy costs and maintains food products within a safe temperature range.

Installing anti-sweat controls and gaskets on display cases saves energy and reduces water dripping on the floor, which prevents potential slip and fall injuries. No-touch devices that dispense paper towels and water control the release of their resource and prevent cross-contamination when the user has handled raw meats or toxins.

Put lids on pots to reduce boiling time, save energy and prevent employee burns from hot liquids.

Hot food holding cabinets use electrical energy. Use insulated cabinets to reduce costs and to make food safer. California law requires that any new holding cabinet purchased must be at least insulated to Energy Star standards or better. Now you have a reason to buy a product that allows you to keep the temperature consistently above 135°F and to keep food safe for consumption. You may also qualify for a utility rebate.

Operating a walk-in with too little refrigerant strains the compressor, drives up energy use and increases the risk of unit failure and food spoilage. Monitor the refrigerant in the sight glass; if you see bubbles, it is time to recharge.

In the hospitality and retail business, these changes translate into increased safety, customer satisfaction and sales.

### Benefits of Using Energy-Efficient Equipment

Whether you have an existing building or plan to build a new structure, the operational equipment you select impacts your operating costs and safety.

### Medium Challenge

Some properties are looking to cogeneration as an energy- and cost-savings solution. The Crown Casino (six-star casino, 460 rooms, 12 million visitors annually) in Melbourne, Australia installed a cogeneration plant that cost \$4,000,000 and saves them \$30,000 per month in energy costs. This reduces their greenhouse gas emissions by 25,000 tons annually. The system generates electricity and heat and is also available as emergency backup if any of the main high-voltage feeders fail.

"America is shifting to a 'green culture,' with more and more businesses understanding that environmental responsibility is everyone's responsibility," says Marcus Peacock, EPA's Deputy Administrator. "EPA commends the leading Green Power Partners for making a long-term commitment to protecting the environment."

EPA maintains a list of its Top Green Power Purchasers, highlighting organizations committed to purchasing green power.

The National Top 25 list of Green Power Partners accounts for more than six billion kilowatt-hours (kWh) per year of green power purchasing, which is about 60% of the total kWh in the Green Power Partnership, thus reducing greenhouse gas emissions equivalent to more than 700,000 vehicles.

On the list released in July 2007 is Vail Resorts, Inc., which purchases 152,000,000 kWh per year from wind power. Such



companies are committed to executing a corporate business practice that is aligned with their plan and goal of being a good steward of the environment.

### Large-Scale Improvements:

#### New Construction or Major Renovation

There are resources available for you and your architect from the U.S. Green Building Council (USGBC), EPA and other organizations.

Buildings under 50,000 square feet get their biggest lift by managing the exterior skin of the building, including roof materials, window films, awnings and wall materials.

Window-related energy costs account for 5% of all energy used in the U.S. Laminated glass windows with low e-coating provide protection from flying glass shards in hurricanes and earthquakes and control heat and glare.

Roof failure is costly and often hazardous to repair. Leaks can cause property damage, mold, electrical shorts and water intrusion, which can create slip and fall exposures for employees and guests. Roof insulation also affects energy consumption.

A green roof can double roof life (less exposure to ultraviolet light and temperature extremes) and can reduce the cost of energy for heating and cooling by up to one third. These roofs reduce drain requirements, are quieter, and once installed, are virtually maintenance-free.

Green roofs can be planted over an entire roof as a single plot, or it can be modular in movable plastic trays. Access to rooftop equipment is a consideration as is weight.

After the construction or renovation phase, "commissioning" the building will ensure proper system alignment and calibration so they operate at their designed efficiency.

**Resource Utilization Beyond Your Building**  
Hospitality resource use goes far beyond the main structure (hotel, clubhouse, restaurant and store). Amenities use/waste energy and emit carbon dioxide. Examples of these amenities include shuttle vans, jet skis, powerboats, heated pools and guided tours in vehicles and helicopters. There are ways to conserve resources through smaller engines, engine monitors, use of hybrid engines, energy-efficient equipment and solar-powered systems and by establishing a minimum number of guests in a conveyance before it can leave its location.

Using green golf course management can capture fertilizer run-off, which can help maintain a healthy ecosystem in the area and avoid impact to the local water source.



#### New Construction LEED™ Green Building Rating System & Hospitality Safety

USGBC created and administers the Leadership in Energy and Environmental Design (LEED) Rating System. USGBC was founded in 1993 and launched LEED in 1998, which was designed collaboratively with input from thousands of volunteer building industry professionals. Initially, LEED was created for new construction of commercial buildings.

LEED is now applied to other issues such as commercial renovation, building campuses, existing building operations and maintenance, homes and schools.

In the hospitality industry, LEED applies to new construction, major renovations, existing building operations and maintenance systems.

A building can obtain four levels of LEED certification:

- LEED Certified
- LEED Silver

- LEED Gold
- LEED Platinum

Levels are achieved based on points gained through:

- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Indoor environmental quality
- Innovation and design process

Currently, at least three major resort/casino projects seeking LEED Silver certification are under construction on the Las Vegas strip.

Through LEED participation, hospitality safety professionals can address safety-related issues up front, thus helping to reduce future costs during operation of the property after construction or renovation activities are complete.

#### Did You Know?

Where LEED standards are applied to energy savings, significant savings result. These are paid back quickly in cost savings. Many measures beyond the LEED program can achieve even higher levels of energy benefits.

At this point, a Silver LEED designation costs no more than conventional design and construction. Incorporating building elements at this level has become quite commonplace. Sustainable building components are available at competitive prices, and trained architects, engineers and specialists are available in this field for assistance.

#### Where Safety Professionals Can Impact Your Operation

##### Sustainable Sites

Two aspects of sustainable sites in which safety professionals can play a part include transportation efficiency and storm water management. Parking structures can be

hazardous areas because of traffic and employee/guest exposure to vehicle exhaust. Safety professionals can help design garage ventilation and can address confined traffic areas and valet safety.

Safety professionals can also provide guidance on how to safely monitor storm water issues in the future.

##### Water Efficiency

Because landscaping can involve the use of hazardous chemicals and machinery, designing it in a way that will minimize both issues can help prevent worker injuries and illnesses. Wastewater management may also pose hazards, which proper design can prevent.

##### Energy & Atmosphere

Improperly designed and difficult-to-reach mechanical equipment often leads to difficult and time-consuming maintenance. Proper maintenance may not occur, which can lead to malfunctioning ventilation equipment and other mechanical systems and consequently poor air quality. Safety professionals can assist in the design phase to limit these issues by providing input for safe access to all key equipment, including refrigerant management.

##### Materials & Resources

When existing building materials are reused to conserve resources, safety professionals can lend their knowledge to evaluate exposure to hazardous materials such as lead-based paint, asbestos, mercury switches and PCBs. They can also provide guidance in selecting less toxic materials for cleaning and paints.

##### Indoor Environmental Quality

Indoor environmental quality (IEQ) is a key concern. EPA estimates that U.S. businesses lose tens of billions of dollars each year in reduced productivity and medical costs due to poor IEQ. Selecting low-emitting furnishings and carpeting could save significant dollars in the future operation of buildings and businesses.



## Systems

Safety professionals can assist in design issues, which are less expensive to implement at the beginning of the project instead of retrofitting them later. These may include fall protection in production shows, window washer anchor points, slip, trip and fall issues on walking/working surfaces, fixed ladder design and installation and warehouse setup.

These are but a few of the issues that affect the LEED process. It is still in its infancy and is undergoing tremendous change.

## The Value of Greening

How valuable is green messaging for the travel and hospitality industry?

Valuable enough for the Hospitality Sales and Marketing Association International (HSMIA) to include an extensive report on "going green" in the Summer 2007 issue of *Marketing Review*. According to the report, the industry is taking measures such as:

- Designing new structures with passive solar and thermal mass
- Community partnerships
- Supply chain
- Food
- Purchasing
- Energy conservation
- Encouraging guests to recycle
- Planting trees

## Benefits & Challenges of Going Green

Continental Airlines' food service kitchens recycle plastics, plastic wrap, cardboard and aluminum. Obvious benefits include reducing pollution and resource management, but the key secondary benefit is that recycling proceeds go into a fund called "We Care." The fund assists co-workers who are going through a period of hardship. Their food service operation in Houston, TX alone will raise over \$100,000, allowing them to retain staff who need support.

To reduce use of toxic materials and the amount of hazardous waste generated, a department store corporation reviewed the list of chemicals it used. The goal was to identify the most hazardous chemicals, and if possible, find nontoxic substitutes (or ones that were substantially less toxic.) They successfully found a nontoxic chemical for their print shop.

However, at a furniture spray operation, a flammable chemical was replaced with a hazardous one. While flammability was significantly reduced, health hazards to workers substantially increased, requiring the establishment of an extensive PPE program that involved use of respirators, eye protection and gloves.

Costs associated with the furniture spray operation soared because of the cost of PPE and the ancillary requirements that accompany this type of protection such as air monitoring, medical surveillance, first-aid/emergency supplies and equipment, employee training and the administrative burden required to manage the program. Ultimately, the operation was discontinued.

In a final example, a prospective client asked a resort conference center to provide separation and plastic, paper, metal can and food recycling during the course of their meeting. To secure the agreement for the convention, the conference center established additional recycling agreements with vendors that enhanced existing agreements.

The expense of the additional agreements raised the cost of providing the conference service by 8%. The conference center absorbed this cost to win the contract. During the course of the meeting, the meeting client did not educate attendees as to the purpose, methods and practices for conducting recycling. As such, while the client intended to contribute to green practice, performance was low.

After the meeting, the resort conducted a follow-up planning session with the client to develop improved communication for future meetings. This included informational leaflets to include in registration materials, informational banners and speaker announcements.

Based on our experience in greening, we see success when executive leadership brings together sound financials along with people considerations and their health impact and consequences in greening decisions.

We hope we have inspired you to consider your next steps in the greening of Hospitality.

ASSE's Hospitality Branch is here to help you. Please feel free to contact the Hospitality Branch leadership as well as this white paper's editor and contributors with your greening questions.

#### Web Resources

<http://www.asse.org>

<http://www.ciwmb.ca.gov/EPP/GreenLodging/Hotels>

<http://www.environmentallyfriendlyhotels.com>

<http://www.flexyourpower.org/>

<http://www.globalstewards.org/hotel.htm>

<http://www.greenhotels.com>

<http://www.greenlodgingnews.com/default.aspx>

<http://www.greenseal.org/programs/lodging.cfm>

<http://www.greentravelmarket.info>

<http://www.gsa.gov/Portal/gsa/ep/home.do?tabId=10>

<http://www.iisd.org/greenstand/default.htm>

#### Alliance to Save Energy

<http://www.ase.org>

#### Building Operation Management (BOMA) Energy Efficiency Program

<http://www.boma.org/TrainingAndEducation/BEEP>

#### Energy Star

<http://energystar.gov>

#### EPA, Green Buildings

<http://www.epa.gov/greenbuilding>

#### Facilitiesnet

<http://facilitiesnet.com>

#### Green Roofs for Healthy Cities

<http://www.greenroofs.org/>

#### GHG Through the Planning Process

<http://www.pewclimate.org>

#### U.S. Green Building Council (USGBC)

<http://www.usgbc.org>

#### Steel Joist Institute

<http://www.steeljoist.org>

#### California Resources

Regulation AB32—Reduce GHG emissions to 1990 levels no later than 2020

#### California Air Resources Board

<http://www.arb.ca.gov>

#### California Climate Registry

[http://www.energy.ca.gov/global\\_climate\\_change/](http://www.energy.ca.gov/global_climate_change/)

#### California Department of Energy

<http://www.energy.ca.gov>

#### California Public Utilities Commission

<http://www.cpuc.ca.gov>



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