Good Earthkeeping Practices at Gaylord Opryland Resort

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Gaylord Opryland Resort and Convention Center Consists of nearly 4 million square feet under one roof. With indoor gardens, rivers, waterfalls, and fifty acres outdoors, along with 2,881 guestrooms and more than a dozen kitchens where more than 3 million meals are prepared each year for 1,500 conferences, becoming a better corporate citizen with good earthkeeping practices is not just an admirable goal, it is an essential business strategy. We are fortunate to share this genuine concern for the environment and an understanding that it is a driving force in the economic engine of tourism, with our Governor, Phil Bredesen, and with Commissioner Susan Whitaker, the strong leader of Tennessee's Dept. of Tourist Development. Commissioner Whittaker really "gets" the need to take the initiative for the industry on this matter, as exemplified by her Department's upcoming Sustainable Tourism Summit being held this April.

For Gaylord Opryland Resort, in 2007 this greener strategy took on a clearer and cleaner focus with the formation of an internal Green Team, to assist the already existing Energy Conservation Committee. The on-going mission of that new, inter-departmental team is to develop and evaluate programs for energy generation and usage reduction, and the reduction, repurposing and recycling of the major percentage of the resort's existing waste-stream. Here is a synopsis of our most recent efforts:

- In 2007, Gaylord Opryland Resort reduced natural gas consumption by 36,830 therms and decreased usage of city water by 1.2 million gallons. Much of the savings is a result of incorporating good practices at no cost such as turning off faucets or not starting stoves early. Part of the savings came from replacing equipment and embracing new technology. And, while Gaylord Opryland is not totally self-sufficient in its energy usage, the resort works diligently to insure that it is not a drain on local energy providers.
- Just prior to, and especially since the organization of the Green Team, recycling efforts at the resort have increased dramatically. For example, the addition of cardboard bailers and giant-sized compactors on property have taken the resort's cardboard recycling efforts from several dozen tons annually in 2004, to almost 275 tons in 2007, which is equal to 4,786 trees saved. Other items now recycled, reused or composted include:
- Recycling of used motor oil 2007 = 1,760 gallons
- Recycling of used oil filters 2007= (4) 55g gallon drums
- Reuse of empty pallets by outside vendor. 7,500 eliminated from waste-stream anually.
- Reuse of packing peanuts collected from shipping/retail package. Estimated 500+ large garbage bags full eliminated from waste stream.
- Office paper recycling for resort staff employees. About 75 tons annually.
- Composting of plant trimmings for reuse on property

But with the current environmental concerns about energy use combined with the on-going drought conditions in Tennessee and the Southeast, the Green Team believes the strongest impact is being made in the area of energy and water conservation initiatives at Gaylord Opryland Resort. These are the measures that were incorporated into renovations in 2007.

Guest rooms:

- Installation of compact fluorescent bulbs in 100% of renovated guest rooms. When completed the total lighting load for guest rooms will reduce from 1,449,143 watts to 728,893 watts.

- Installed water saver shower heads.

- Installed low flow toilets and faucets.

- As a result of sound conservation practices the water consumption was reduced in this area 1,238,785 gallons from 2006.

Retail/F&B:

- Partial install of fluorescent bulbs that reduce heat output in outlets.

- Install of low wattage bulbs for retail displays.

- New lighting reduced the electrical load from 3,000watts to 690 watts.

- Event/menu boards converted to LED lighting for long life and low energy.

- Installing LED lighting on famous 100 foot tall "Southern Lights Christmas Tree".

- Remaining incandescent lighting replaced with LED saving $12,453 since late 2006.

More on Water usage:

- A well water filtration system provides non-domestic water for Laundry, Power House boilers, cooling towers, cooling of the gas turbine, fluid drives, all irrigation on property, the Delta River (1/4 mile man-made indoor river in the Delta atrium), and ESP generators.

- Tunnel washers recycle clean water as long as it is reusable.

- Heat from waste water is recovered to heat clean water at laundry.

- Guest room Green Sheet and Towel program, to reduce utilities and chemicals.

Energy generation.

- Gaylord Opryland generates 35% of the energy it consumes and operates an on-site energy center that provides steam, chilled water, and electricity to the vast complex. During the winter months, additional steam is generated utilizing a duct burner in the turbine exhaust. Cogeneration is the use of natural gas to produce electricity and steam. A natural gas turbine or engine runs a generator to produce electricity and simultaneously makes steam. The steam is used for heating, hot water, laundry drying process, and for an absorption chiller for air conditioning. *Cogeneration makes use of energy that might otherwise by wasted,* thereby, making better use of resources and helping the company's bottom line. The cogeneration system uses clean-burning, natural gas.
- A state-of-the-art energy management system and Power House controls are used to monitor and control all utilities. The energy management system is a Control System International (C.S.I.) direct digital controls system, with approximately 48,000 control and

monitor points. This allows monitoring and control of HVAC equipment throughout the massive resort which includes 2881 guestrooms, 600,000 square feet of convention space, and nine acres of atriums. The C.S.I. system is used extensively for logging temperature, well water usage, and electrical consumption, steam flow, and gas usage.

Pest Control.

- When it comes to pest control, operations are executed without chemicals, or with the most environmentally-friendly options available. Gaylord Opryland's Pest Control Division no longer depends on the organophosphate and chlorinated hydrocarbon insecticides. Only miniscule amounts of insecticide concentrates are used, instead focusing on products which are dramatically more environmentally friendly than those used 30 years ago when the resort was first established.
- In the realm of horticultural pest control, with an investment in 60,000 plants, many tropical and some rare, Gaylord Opryland has more than a passing interest in creating an environment in which these plants can thrive. But these plants coexist in three massive glass atriums with hundreds of thousands of guests each year and more than 4,000 employees, along with some prize-winning Koi. The pest control team has increased the amount of biologicals used in preserving the health of its indoor (and outdoor) plants, in order to keep the atrium ecosystems environmentally balanced. For example, the number of predatory insects used for the control of pest insects is being increased. Some of those include: Encarsia Formosa, which is a small parasitic wasp for the control of whiteflies; Hippodmia Convergens, which are Ladybugs for Aphid control; and Chrysoperla SPP, which are Lacewing insects for the control of mealy bugs and other soft bodied insects. The insects die out after they eat all of the plant-damaging insects; therefore the system takes care of itself.
- Bio-rational pesticides are now used in our garden atriums instead of chemically-engineered ones for reasons that become obvious when you read their descriptions. Botanigard or Beauverai Bassiana is a bio-rational pesticide that comes from a natural fungus. Conserve – Spinosad is a natural byproduct of fermentation and is very effective, as is Azadiractin, which is derived from the Neem tree. And the list goes on to include fatty soaps, vegetable oils, etc.
- The challenge regarding structural pest control is different as it is the health of guests and employees that is of number one concern. That is why Gaylord Opryland has also phased in more bio-rational methods of structural pest control as well over the years, reaching our peak use in 2007. Now Pyrethrum-based products are used. They are botanical pesticides made from the daisy-like flower Chrysantheum Cinerariifolium. We have also moved to insect growth regulators which prohibit insects from reproducing thus reducing the amount of insecticides needed.
- There is a lot more to mention, such as non-chemical control including mechanical devices like air curtains, netting, traps for outdoors (which include releasing the animals into approved wildlife friendly areas) and mist nets used for capturing wild birds in our atriums, which are also later released outdoors. And this year the results will become available form a project initiated by Gaylord Opryland with TyraTech and Vanderbilt University, to develop an organic pest control product derived from Wintergreen oil.

Gaylord Opryland Resort and Convention Center has made strong advances in studying, developing, and evaluating the property's good earthkeeping practices, in order to make the Resort a more environmentally responsible citizen of Nashville and an exceptionally beautiful and safe destination for its guests.