

Green Hotels Association

GREENING NEWSLETTER

ROUTE TO:
General Manager
Sales Manager
Chief Engineer
Housekeeping
Rooms
F & B
Purchasing
Personnel
Front Desk
Lobby

As our green programs continue to be refined, we're reminded more and more that none of us can be really green without the green products and services offered by green vendors. GHA continues to encourage and support our Ally Members, and to bring you news of their successes—new products, new ideas, new techniques, recent awards, new contracts, etc. So, each July/August issue of this newsletter focuses on new and refreshing stories about our Ally Members' successes. Here we go once again . . .

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THE NEW YORK TIMES AND FINANCIAL TIMES LAUNCH NEW DIGITAL ACCESS PROGRAM FOR HOTELS

ALLY MEMBER The New York Times and Financial Times recently announced a new, first-of-its-kind program available to US hotels to provide their guests access to NYTimes.com and FT.com on any device connected to the hotel's network. The program offers hotels a chance to purchase their own branded web portal that provides guests free entry into both NYTimes.com and FT.com. Participating hotels will receive promotional materials in the form of instructional keycards to notify guests about the amenity.

Guests staying at hotels with this program will receive complimentary access to more than 25 sections on NYTimes.com including articles, video, interactives and slideshows. Readers will also have access to the world-class coverage of business, international news, comment, data and analysis for the global business community that only the FT can provide.

The New York Times

"The New York Times has been available in select hotels for years, starting with the print newspaper and more recently with digital access," said Hannah Yang, executive director, Education and Corporate Marketing, The New York Times. "Teaming up with a premier brand like the FT enhances the guest experience, allowing them to explore and discover the vast amount of digital content available on FT.com and NYTimes.com, which normally require a subscription for full access."

For more information on the program, please contact The New York Times at hotels@nytimes.com.

Continental releases new high-speed G-Flex Washer-Extractors for on-premise laundries

Following 60 years of hard-mount washer development and innovation, ALLY MEMBER Continental Girbau Inc. (Continental) recently released its most advanced hard-

mount washer line yet. The new G-Flex Washer-Extractors generate extract speeds of up to 200 G-force, offer a highly programmable control and deliver superior results using less water and energy. Available in 40- and 55-pound capacities, G-Flex Washers also deliver the flexibility of six programmable extract speeds including 100, 140 and 200 G-force.

G-Flex Washers offer high-speed extract for bolstered productivity. As extract speeds increase, according to Joel Jorgensen, Continental vice president of sales and customer services, so does the amount of moisture removed from every load during extract. G-Flex Washers generate extract speeds of 200 G-force, while most other hard-mount washers only reach speeds of 75-150 G-force. In turn, G-Flex laundry loads take less time to dry, which improves laundry productivity and cuts natural gas usage and labor time. "G-force extract speeds on the G-Flex Washer can also be adjusted to meet most laundries' specific foundation installation limitations," added Jorgensen. "Not all on-premise laundries have the 8-inch concrete foundation required to operate a 200 G-force hard-mount washer. The G-Flex can operate on a lesser foundation by adjusting G-force extract accordingly. Programmable G-force is critical when installation variables are not ideal."



Additionally, superior programmability means laundries can properly clean a variety of fabrics and load types depending on specific laundry needs. The highly flexible Logi Pro Control offers 25 individually modifiable programs—each with up to 11 baths, including multiple pre-wash, wash and rinse cycles. Variables within each bath—including wash temperature, water levels, cycle times, rotation and G-force extract speeds—can be individually programmed for maximum efficiency given the load type.

Despite their advanced technology, the controls couldn't be simpler to use. Once the programs are set, operators simply select the program number and press start. G-Flex Washers offer two means of dispensing chemistry—manually, using a top-mounted dry and liquid chemical dispenser, or automatically, via chemical injection. The top-mounted chemistry dispenser features up to four compartments—one for wash, one for optional pre-wash and two for liquid-only bleach and sour/neutralizer products. An oversized seal around the dispenser keeps detergents where they belong and a powerful compartment flushing system reduces maintenance by thoroughly cleaning each compartment after every cycle. Automatic liquid chemical injection, on the other hand, not only ensures a consistent clean with every wash, it eliminates the possibility of chemical overuse and resulting damage to fabric due to operator error.

Engineered for longevity, G-Flex Washers operate on single-phase power and plug into a standard appliance outlet—simplifying installation. Packed with green-engrained features,

G-Flex Washers feature a sump-less design, which saves up to three gallons of water with each fill. The exclusive AquaFall™ system further conserves water. AquaFall™ releases water into each load through holes in the drum lifters for better saturation and rinsing. In turn, laundries conserve water and save in water-heating costs. The G-Flex AquaMixer™ system mixes hot and cold water to achieve precise bath temperatures—minimizing hot water consumption.

G-Flex Washers feature durable AISI-304 stainless steel inner and outer drums. The front, side and top panels are constructed of steel and coated with Continental's unique Titan Steel Finish™ for superior appearance and corrosion resistance. An oversized door, which allows for easy loading and unloading, is equipped with a heavy-duty, bolt-style hinge to withstand the rigors of constant use. No wonder G-Flex is backed by a leading 5/3-year ContinentalCare™ warranty. To find out more about Continental laundry products, visit continentalqirbau.com or call 800/256-1073.

PIVOTING TO INTELLIGENT BLENDS

Every business has critical moments that define them. Michael Ishayik, owner of ALLY MEMBER Intelligent Blends, a manufacturer of single-serve K-cup beverages, is amazed he's a coffee and tea provider. Ishayik had a VHS duplication business which evolved into DVD replication. "One thing that will always change a business is evolving technologies," Ishayik stated. With over 50 employees, a fully-operating facility and warehouse, pivoting was necessary.

He needed something in which he could believe. Ideas from organic pet food to herbal medicines were considered. He then learned the Keurig Green Mountain Coffee Company's patent on K-cup would soon expire, and the product line was hot. It was critical that these pods were not recyclable, which he saw as an opportunity. So Ishayik created an assembly line using only recyclables to create his single-serve capsules. He worked with coffee brands all over the US as their co-packer. Soon Ishayik found the best coffee beans and tea leaves and the process to create exceptional beverages. A 5th generation roast master was the final key in creating Intelligent Blends. They produce quality coffee and tea by micro-batch roasting as opposed to commercial roasting, and minimize the environmental footprint.



Ishayik discusses his business with anyone who listens. Talking with his personal trainer about Intelligent

Blends, the trainer thought of another client who owns hotels in San Diego. Soon the coffee and tea was offered in those hotels, and is now in thousands of guest rooms across the US. "We create an opportunity for hotels to deepen their stance on sustainability, and also offer custom lids and blends for each hotel—turning their coffee budget into valuable marketing dollars," Ishayik stated. "Single serve coffee and tea is our total focus, so we build relationships one hotel at a time while developing value in the hotel world."

Single-serve capsules are now so commonplace that they are expected and appreciated. The recyclable Kup Intelligent Blends uses produces a capsule with a moisture/oxygen barrier that is up to 10 times less permeable than a typical polystyrene cup, which is not recyclable. Intelligent Blends' recyclable Kups are made of a proprietary blend of #5

recyclable polypropylene, and recently won a Specialty Coffee Association of America award as the people's choice best new product in packaging. Never did Ishayik see the twists and turns that have led to Intelligent Blends offering a premium single-serve coffee Kup!

Eco-friendly machines, coffee condiments and samples are available, and a real person will help you find your fit. Contact John Lenz at 858/245-9265, e-mail john@intelligentblends.com or visit intelligentblends.com/hospitality to learn more.

Tandem+ Nano paper towel dispenser for limited-space areas

ALLY MEMBER Cascades Tissue Group announces the launch of Tandem+ Nano™, the small-footprint, no-touch hand towel dispenser, which is the latest addition to the popular Tandem+ towel and tissue dispensing systems line. The Tandem+ Nano roll towel dispenser is engineered as a hygiene solution fitting smaller, away-from-home spaces. Tandem+ Nano is the ideal substitute to folded towels, cutting down on paper usage by more than 40%. Like all Tandem+ products, it is ergonomic, easy to use and provides reliable dispensing for Cascades natural and ultra-white paper towels made from 100% recycled fiber.



"It just makes sense that in business environments where physical spaces as well as operating costs are tight, it's the little things that make a difference," said Cascades Tissue Group President and Chief Operating Officer Jean Jobin. "We've thought hard about the practicality of hand hygiene where space is at a premium, looking at it from the perspective of both the business owners and the end users. Ultimately, we've created a hand-towel-dispensing solution that works for everyone." The Tandem+ Nano not only mitigates cross-contamination of bacteria, but also reduces unnecessary paper consumption. To reduce maintenance, and save labor time and cost, it delivers one sheet at a time and does not require batteries.

Available in white and black, Tandem+ Nano, like Tandem+, features a customizable OnDisplay advertising window. Facility managers can change signage inserts promoting their organization or reminding users about recommended hand hygiene practices. For more information, visit afh.cascades.com.

High-speed, energy-efficient XLERATOR® hand dryers installed in sporting arenas

ALLY MEMBER Excel Dryer, Inc., manufacturer of the finest American-made hand dryers for over 50 years, featuring the high-speed, energy-efficient XLERATOR® hand dryer, finds that as the green movement grows, a number of sports teams—including the New England Patriots—have placed an emphasis on providing more sustainable solutions in order to green their facilities. The XLERATOR hand dryer helps sports teams achieve their sustainability goals while reducing costs, labor and maintenance, and improving the stadium's appearance and fan experience."

The XLERATOR hand dryers can also be found in Wembley Stadium in London; the 2010 FIFA World Cup stadiums in

South Africa; the St. Louis Cardinals' Busch Stadium; the Los Angeles Dodgers' Dodger Stadium; the New England Patriots' Gillette Stadium and the Boston Red Sox's Fenway.



The XLERATOR dries hands three times faster (in 10-15 seconds) using 80% less energy than conventional hand dryers and represents a 95% cost savings over paper towels, eliminating their labor, maintenance and waste. The installation of the

XLERATOR hand dryers was a significant factor in reducing overall waste removal from Fenway Park by over 123 tons when first installed, which equated to a 24% reduction in waste. A customized cost-savings analysis revealed that the XLERATOR hand dryers reduced Fenway Park's hand drying carbon footprint by 82%. Additionally, the XLERATOR hand dryers at Fenway Park saved \$83,000 annually—a 97% savings over paper towels—and saw a full return on their investment in just over 12 months.

Excel Dryer offers custom digital image covers that provide stadiums and arenas with an opportunity to showcase branding with graphics, colors, logos or a custom sustainability message. Excel Dryer has a diverse range of products and options along with the most complete line of accessories in the industry to create the best hand drying solution for any restroom environment, including optional speed and sound controls or HEPA filtration system for a quiet and clean airflow. For more information, call 800/255-9235 or visit exceldryer.com.

WAUSAU PAPER UNVEILS ALLIANCE™ HIGH-CAPACITY ROLL TOWEL SYSTEM

ALLY MEMBER Wausau Paper announced the launch of its new Alliance® high-capacity electronic roll towel dispensing system featuring twice the capacity of typical roll towel dispensers. The revolutionary design of the Alliance accommodates two full rolls—up to 1,000 feet each. With innovative design, the Alliance offers seamless transfer by automatically switching to the second roll when the first is completely depleted. This unique transfer feature results in fewer service interruptions and reduced maintenance time. Combined with Wausau's EcoSoft®, DubiNature® or Artisan® Green Seal™-certified toweling, Alliance offers a new, unique hand-drying experience superior to other systems in the market. Alliance's unprecedented capacity, combined with selectable dispense modes and



paper lengths, makes the dispenser ideal for any application with heavy traffic.

"Wausau Paper is excited to remain at the forefront of new and innovative away-from-home market dispensing technology. Many years ago, the Company was the first to introduce an electronic roll towel dispenser. Now, the Alliance is the first system to accommodate two full roll towels with automatic transfer," commented Matthew L. Urmanski, president and chief operating officer. "Unlike any other system, Alliance offers extraordinary capacity—the highest in the industry—while maintaining a traditional wall space footprint. We are confident the uniqueness of Alliance will satisfy end-user needs for high capacity and touch free." To learn more, visit wausaupaper.com.

NOW SERVING EARTH-FRIENDLY COFFEE FOR YOUR GUESTS

Attend an Arbor Day Specialty Coffee webinar to learn more

ALLY MEMBER Arbor Day Foundation's shade-grown coffee is rich and flavorful, and your guests will savor each cup they drink. Arbor Day Specialty coffee beans are shade-grown under the canopy of the rain forest. Rain forests cover only 2% of the Earth's surface, and are home to almost half of the Earth's known living plant and animal species—yet nearly 100,000 acres of rain forest are destroyed every day. In order to help combat deforestation and improve farmers' and their families' lives, the Arbor Day Foundation's Rain Forest Rescue project selects only the best shade-grown coffee beans. With each cup of Arbor Day Specialty Coffee your guests drink, they will save two square feet of rain forest.



The Arbor Day Foundation, the largest non-profit membership organization dedicated to planting trees, has a network of over 200 hotels and resorts that are serving this earth-friendly coffee and pleasing their guests every day. Your property can benefit from this coffee program too! Join us for a brief webinar on **September 15, 2015, 10 am CST; September 16, 2015, 2 pm CST or September 17, 2015, 11 am CST**. You will also receive an e-mail with webinar dates and times. Don't miss this awesome opportunity to learn about the great coffee your guests will enjoy!

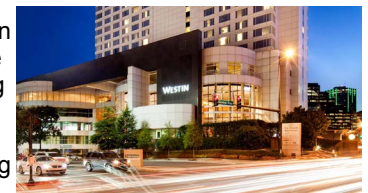
It's a fact that 103 square feet of rain forest is preserved with each pound of Arbor Day Specialty Coffee you serve! Visit arborday.org/hotelcoffee to learn about the positive impact of Arbor Day Specialty coffee on the rain forest and those that call it home.

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How to save on energy management

In the US, hotels spend in excess of \$7.5 billion on energy each year according to the US EPA. This translates to an average spend of nearly \$2,200 per available room each year on energy by the more than 47,000 hotels and motels in America, which in turn accounts for around 6% of all domestic hotel operating costs. Saving on energy costs equals a savings directly to the bottom line.

Robert Attaway, director of engineering for the Westin Buckhead Atlanta, has been continuously working on making his hotel the most efficient it can be in the past 16 years he's been with the property. In the last five years, he has been collaborating with the hotel's owners to keep energy consumption down. "If you waste energy, you're wasting money," he said. "But with increasing energy efficiency, we can actually increase guest comfort and save money."



Starwood Hotels and Resorts recently implemented a "30/20 by 20" program to reduce energy use by 30% and cut water consumption by 20% by 2020 at every property. "We really think of energy efficiency by data first," said Andrea Pinabell, vice president of sustainability at Starwood Hotels and Resorts Worldwide. "We track energy, water and waste, and then use

that data to develop a multi-faceted approach to reduce our impact.”

Starwood Hotels enabled a third-party energy and water audit in 2011 and looks for a return-on-investment of less than a year on energy-efficient projects and for capital projects with the lowest initial costs for the biggest impact.

The Westin Buckhead has done several low-cost, high payback things to save energy, such as using LED lighting throughout the hotel, replacing the kitchen exhaust hoods that automatically senses smoke or steam to run efficiently, and only operating the ice machines at night. The hotel also has done larger ticket items, such as installing a water pressure system, a guestroom energy-management system and an energy-recovery unit, which can change the inside air temperatures by up to 50 degrees in the winter and 30 degrees in the summer months, Attaway said.

Mike Prevatte, owner of Wilmington Development, which has a Sleep Inn and MainStay Suites in Wilmington, NC, is a strong proponent of energy-management systems. Prevatte built his properties with Lodging Technologies' energy-management system in place. The extended-stay MainStay Suites has an interface with its cooktops in guestrooms that will automatically turn it off if the guest leaves the room.

“Energy-management products have a great ROI and with the use of cellular activity instead of wiring, you can save a lot on installation costs,” he said.

Hertzfeld, Esther, How to save on energy management, hotelmanagement.net/technology/how-to-save-on-energy-management-30384, February 24, 2015

How design impacts energy savings

Hotel lighting is accountable for a significant percentage of energy usage and something that impacts guests' perceptions of a space. Lighting is a great place for hoteliers to look when contemplating changes that might benefit guests and the bottom line.



Ross Burch, project director at design company Wilson Associates Dallas, said the biggest impact designers can

make in increasing a hotel's energy efficiency, is in the lighting choices.

“Light-emitting diode (LED) lighting has become a huge component and part of our specifications,” he said. “They have a longer life and use less energy. They require less manpower to replace when the time comes. We now use LED lighting in everything from desk lights, bedside lamps to huge light installations across the hotel.”

While LEDs are more expensive than incandescent bulbs, these lamps can often pay for themselves through energy and maintenance savings. Most light fixtures can accommodate some form of LED or CFL lamp, making it simple for hoteliers to save on energy and maintenance costs.

Many hotel operators now have a green initiative with standards that they require within design. “This is so fantastic to see, because in the past we as designers were required to take the lead on incorporating energy saving techniques wherever we could, and now operators are issuing those standards to us,” Burch said. “Products like keycards that shut

off light and A/C when you leave the room, dimmers, electric shade and LED lights all make a huge impact.”

Hertzfeld, Esther, How design impacts energy savings, <http://www.hotelmanagement.net/technology/how-design-impacts-energy-savings-30419>, February 26, 2015

How to simplify energy efficiency in hotels

Many hotels have been able to complete their energy efficiency upgrades through partnerships, rebates and incentives from local, state and federal governments along with power companies. Late last year, the Energy Department announced \$9 million to encourage investments in energy-saving technologies that can be tested and deployed in hotels and other types of commercial buildings.

Mike Hardin, VP of asset management for Apple REIT Companies, makes a point to choose energy efficiency upgrades to hotels that have rebates available to the hotel. “We investigate all the things we can do to lower the overall costs so we can do as many upgrades to as many hotels as possible in a year,” he said.

Hardin uses a third-party utility consultant, who brings the utilities upgrade opportunities directly to him. “Things like solar opportunities, ozone laundry systems, and they constantly review all the utilities for us,” he said. “They will correct bills and notice where we may have leaks or broken meters. It saves us money and stops any bleeding as quickly as possible. It's definitely worth the relatively low-cost expense that I highly recommend.”

“The MainStay Suites and Sleep Inn in Wilmington, NC, was recently able to upgrade its outdoor parking lot lighting with a rebate and incentive from the local power company,” said Mike Prevatte, owner of Wilmington Development. This was a move that Prevatte expects to see significant savings in, especially when the hotel reaches its peak April-to-September season.



The Phoenician, a Starwood Hotels and Resorts Worldwide resort in Scottsdale, AZ, partnered with NRG Energy, Inc. to integrate clean sustainable energy at the resort with approximately 2,000 photovoltaic solar panels. The installation will offset a portion of the resort's energy demand and this project is the first of several between NRG and Starwood. The partnership will also incorporate solar installations at The Westin St. John Resort in the US Virgin Islands and The Westin Maui Resort & Spa, Ka'anapali. Together, all three installations are expected to provide more than 2 megawatts (MWdc) of solar power.

Hertzfeld, Esther, How to simplify energy efficiency in hotels, <http://www.hotelmanagement.net/technology/how-to-simplify-energy-efficiency-in-hotels-30475>, March 3, 2015

Breeders select trait to conserve drinkable water

Plants need water. People need water. Unfortunately, there's only so much clean water to go around—and so the effort begins to find a solution.

Luckily for people, some plants are able to make do without

perfectly clean water, leaving more good water for drinking. One strategy is to use treated wastewater, containing salt leftover from the cleaning process, to water large areas of turf grass. These areas include athletic fields and golf courses. Golf courses alone use approximately 750 billion gallons of water annually in arid regions.



However, most plants cannot tolerate a lot of salt. As some areas of the United States run low on clean water, plant breeders are trying to breed plants that are more salt tolerant. This would conserve clean water while maintaining healthy turf.

Plant breeders can actually see the individual effect of what each parent plant passes on because the genes add intensity to the trait. These are additive effects. Breeders can more easily select for those features when they observe those differences.

“We found through a series of experiments that salt tolerance in perennial ryegrass is highly controlled by additive genetic effects rather than environmental effects,” said Stacy Bonos from Rutgers University. “This is great news for breeders because we now know salt tolerance can be more easily bred for.”

Bonos and her team measured salt tolerance using visual percent green color. This is the percentage of the plant that is green and actively growing as compared to brown, which would indicate that it is dead or dying.

“As a plant is affected by salinity it will start to turn brown,” explained Bonos. “It is an indication of their salt tolerance if they can continue to grow and have green tissue while the others turn straw colored and brown and start to die.” Bonos and her team also conducted a series of experiments to confirm salt tolerance. One test looked at broad-sense heritability. This showed that the trait for salt tolerance has more genetic components than environmental ones. “But there are a lot of things that make up the genetic components, so we (also) use narrow-sense heritability to focus in on those components and see if they are mostly additive,” Bonos explained.

Korzekwa, Kaine, Breeders select trait to conserve drinkable water, American Society of Agronomy, June 25, 2015

What to do with old medications

Between 10 and 30% of all prescription and over-the-counter drugs sold are left unconsumed, according to a State of Washington report, and all those leftover medications pose significant risks to public health and the environment. Drugs that are flushed down the toilet or tossed in the trash can—rather than properly disposed of—can end up in oceans and



waterways, threatening both marine life and human health. Meanwhile, many individuals don't get rid of their unused medications at all; they simply store the drugs in their medicine cabinets—a practice that can lead to drug misuse and abuse.

CVS Health has decided it wants to do its part to stem the tide of prescription and over-the-counter medications filling up our medicine cabinets and clogging our waterways. In 2013, the retailer and health care company launched its

CVS/pharmacy Medication Disposal for Safer Communities Program, a grant initiative in which the company distributes drug collection bins to police departments and municipalities, so they can set up environmentally responsible local drug disposal programs. These specialized drug disposal units meet federal requirements to collect and securely store prescription medications that are also considered “controlled substances”—drugs that have the potential for abuse or dependence and are highly regulated by law enforcement agencies.

Since the program began awarding grants last year, CVS/pharmacy has donated 275 of these drug collection bins to localities, and all these bins are currently being used for community drop-off programs, said Eileen Howard Boone, the company's senior vice president of corporate social responsibility and philanthropy. The first 100 bins collected nearly 6,500 pounds of old medications in their first six months of use. The goal of the initiative, Boone said, is to award a total of 1,000 drug collection bins to local governments across the US.

CVS/pharmacy has also been an active participant in National Prescription Drug Take-Back Day, a joint-program of the Justice Department and Drug Enforcement Administration to collect unwanted prescription medications across the country twice a year. Last year's take-back days collected a total of 1.4 million pounds of medication, Boone said. CVS/pharmacy hosted more than 400 of these drug collection events, she said, allowing law enforcement agencies to take advantage of the retailer's convenient location and traffic access—rather than sending the public out to remote hazardous waste facilities or inconvenient police stations to drop off medications.

Alexis Petru, Triple Pundit, What to do with old medications, enn.com, May 20, 2015

WATER BENCHMARKING: IS IT IMPORTANT TO YOUR HOTEL?

The benefit of developing an indicator for how your hotel compares to global indices

When organizations want to improve their performance, they benchmark. That is, they compare their performance against those of high-performing organizations worldwide.

In a recent American Water Works Association (AWWA) report, a benchmark is described as a particular (numerical) value that denotes a specific level of performance. A distinction is made between a benchmark (which indicates a current state of achievement) and a target which indicates a level of achievement expected at some time in the future.

Earlier this year the Starwood Hotel and Resort Company, which manages, franchises or owns over 300,000 hotel rooms, set fairly aggressive targets as it relates to energy and water usage. As part of Starwood's green initiative, a 30-20-20 target goal was established—the target for each Starwood is to save 30% in energy and 20% in water by 2020. Starwood is to be applauded for this effort, but do not confuse targeting with benchmarking.

Benchmarking involves measuring your current practices and comparing them against your competition in order to identify, understand and adapt the practices that are effectively being used by your competitors. Benchmarking represents a powerful mechanism for encouraging building owners to improve hotel water performance. Some of the benefits to

water benchmarking are:

- Improves awareness of hotel water efficiency
- Identifies hotels that can benefit the most from water upgrades
- Provides a baseline for measuring improved performance
- Creates competition through comparison with like hotels

The knowledge and understanding you gain from benchmarking your water use and costs will help you make the right decisions for your hotel, no matter which type of water efficiency plan you choose to implement. Knowing which strategies will most effectively save water, and therefore deliver the best results, is critical knowledge to help managers make informed decisions. You will need a sound process for sorting out and optimizing your investments in order to achieve the greatest return on investment.

Benchmarking ultimately boils down to setting a long-term goal and using specific indicators and metrics to track your progress. For hotel managers, benchmarking can be a little



tricky, because hotels have varying room sizes, furnishings, public rooms, dining options, recreational facilities and the like. In this article, we will explain what to look for, and steps you can take. Let's start with a quick look at the benchmarking process as we walk through the following example:

- **Step 1:** Establish your long term

goal. Let's say you want to decrease your water consumption by 20% by year-end.

- **Step 2:** Determine where you currently stand by reviewing your water bills. One quick assessment you can calculate is the number of gallons or cubic feet of water used per room per day.
- **Step 3:** Identify which area/systems can be measured separately. In other words, break it down into the parts of the whole: guest room use, kitchen use, cooling use, etc.
- **Step 4:** Use water modeling software to evaluate the benefits of potential improvements.
- **Step 5:** Make decisions on improvements, and establish a timeline to complete upgrades.
- **Step 6:** Set your benchmarking schedule. If you plan to have your goal achieved by year-end, setting benchmark tallies at month-end would be appropriate.
- **Step 7:** Measure progress and develop a program to maintain efficiency.

WATER AUDITING IS THE KEY TO EFFECTIVE BENCHMARKING

Conducting an in-depth audit not only benchmarks your own hotel's performance, it also identifies potential infrastructure improvements and related savings. An audit uses historical utility data to establish the base line conditions, from which proposed water efficiency measures can be evaluated to project potential savings. A typical approach to a water audit might involve collecting two to three years of utility expenses. These expenses are then used to create a snapshot of annual utility use that reflects seasonal changes and annual variance.

The audit should also include:

- Location of water meter(s) to be identified and evaluated
- Water quality assessment
- Building conditions, age of building, date of last renovation
- Information about occupancy rate and staff numbers
- Frequency of conventions and number of visitors
- Evaluation of maintenance practices
- Water use inside the facility

- Locating and counting water-using devices
- Flow measurement of existing water-using equipment (sampling)
- General evaluation of irrigation practices, to include square footage of landscape as well as determination of precipitation and ET rates.
- General evaluation of cooling tower(s) including cooling tower load and tonnage.
- Data regarding pounds of laundry washed and number of meals served.
- Targets for efficient consumption
- Quantify potential water, wastewater and stormwater savings
- Investigate opportunities around the site for rainwater harvesting, rain gardens, tree pits and other low impact development measures that can minimize water intrusion into the facility.
- Cost estimates for installing new water efficiency measures along with cost and associated returns on investment.

Once the data from the audit is gathered, industry-recognized water modeling software should be used to evaluate the benefits of potential improvements. The software is a proven tool that can be used to identify the best potential systems and solutions to meet the organization's needs.

The US EPA ENERGY STAR maintains a directory of benchmarking tools on their website. The primary tool available to hotel and facility engineers for water benchmarking and modeling is the Portfolio Manager. This software has the capacity to benchmark information from similar buildings in the same environment, industry and peer group. As more managers use it, the process will produce a picture of water conservation and savings potential that is increasingly based on real experience.

The DataTrends page on the Energy Star site (energystar.gov/DataTrends) is based on aggregated data from 35,000 buildings in Portfolio Manager. Because modeling allows users to enter the utility rate information, your team can evaluate consumption costs and determine potential water operations and maintenance savings.

FACTORS AFFECTING HOTEL WATER USAGE

The value of 102 gallons per room per day from EPA's Portfolio Manager is helpful, but it does not break down the water usage by end-use category (domestic, kitchen, cooling tower, swimming pools, laundry, etc.). This use varies considerably from one hotel type to the next. Based on an average occupancy rate of 76%, domestic water use (toilets, showerheads, faucets) can range from as low as 30% of the overall water use for a luxury hotel to as high as 85% for an economy hotel.

From usage statistics compiled for different types of hotels over the past 20 years, we have found that guests use toilets 5 times per day and wash their hands with each toilet use for an average duration of 6-10 seconds per use. Two additional minutes per day of bathroom sink use is allocated for other uses. Shower use is an average duration of 8-10 minutes per day. On average housekeeping flushes the toilet two times with each room cleaning. One interesting fact to note is that the number of guests per room for the luxury and 3-star hotels is 1.4 guests whereas the number of guests per room for the economy and 2-star hotels is 1.8 guests.

Most water and energy savings consultants calculate the potential savings from replacing bathroom fixtures by

stipulating the savings based on the average flow rate and flush volume for each fixture that is being replaced, and multiplying that by a factor based on agreed-on usage patterns.

The problem with using the stipulated savings technique is that it significantly underestimates the water savings that can be realized from replacing older inefficient equipment. Savings projections thus are often underestimated because they do not take into consideration the problems that occur with inefficient toilets, such as double flushing, leaking flappers, leaking fill valves and toilet handles that need to be jiggled.

More accurate savings projections can be made by completing a water balance. In a 3-star hotel example, 8% of the usage remained unaccounted even after water use for the swimming pools, irrigation, kitchen, laundry, ice machines and domestic use were all identified. Not surprisingly, after a water conservation program (that included toilets, new showerheads and pressure compensating faucet flow controls) was implemented—the savings realized was 35%, a full 25% more savings than was expected.

Leaks play a major role in increased water use—even a small leak can have a significant effect on water use. The rule of thumb that we follow is that whenever domestic usage exceeds 60 gallons per unit per day, or whenever the usage for the entire facility exceeds 100 gallons per unit per day, we conduct a water audit. Water audits are not expensive—they typically range in price from \$1,000 to \$2,500 and investigate each of the major water-use areas. Companies such as Kohler, Gerber and American Standard are all actively supporting conservation efforts in this market—some will even provide a free desktop analysis.

Below is a brief description of the areas other than the guest bathrooms where opportunities for savings exist and need to be included as part of the water audit:

- **Commercial Restrooms** - Commercial restroom retrofits offer significantly higher saving per fixture than residential retrofits do for one simple reason—higher use rate. For example, a toilet in a hotel room may be used five to ten times a day, while one in the lobby could be used 20 to 30 times a day. Put the same toilet outside a convention room and the number of uses may increase to as many as 50 or more a day. At the national average, water and wastewater cost of approximately \$7.50 per thousand gallons, one flush of a 5-gallon per flush (gpf) toilet would cost about 3.7 cents, while a single flush from a 1.28 gpf toilet would cost about 1 cent—this results in 2.7 cents saved per flush. If a toilet is used 50 times a day in a facility that is open 365 days a year, the annual water and sewer cost difference between a 5.0 gpf and a 1.28 gpf toilet would be approximately \$500 a year per toilet. Faucets and urinals can have similar savings.

- **Cooling Towers** - Cooling towers are often the forgotten part of water use. When benchmarking a hotel in the Northeast against a hotel in the South, factoring the water usage from cooling towers becomes even more important since air conditioning is a major factor in warmer climates. Cooling towers typically use 2.5 gallons of water per ton per hour of air conditioning. Since most hotel properties contract out the chemical treatment of cooling towers, it is important that the contract contains specifications for water efficiency. Be sure to agree upon a specified number of cycles of concentration or a specific conductivity setting for blowdown. Proper instrumentation is critical to good management.

Metering makeup and blowdown water, proper conductivity control and connection to real-time monitoring are all critical elements. Beyond that, good energy conservation reduces the ton-hours rejected to the tower and thus reduces water use.

- **Irrigation** - Smart controllers, in combination with a well-maintained irrigation system is typically the first step. New irrigation control systems have the ability to track usage per zone, detect breaks, measure usable rainfall and track water evaporation from the landscape. By monitoring broken heads, leaks, etc. daily, work orders can be generated that result in an 80% to 90% reduction in water loss through leaks by same-day response. Similar to cooling tower use, if you don't measure it, you cannot manage it.

Water-efficient landscaping can also reduce water use, help manage stormwater, reduce the heat-island effect, reduce air pollution and increase the aesthetic aspects of the site. Many hotels are looking to rain gardens, bio-retention basins, rainwater harvesting, green roofs and similar techniques to reduce stormwater or combined sewer overflows. Combining new and innovative stormwater control technologies that follow the principle of "keep the rain where it falls" will keep the irrigation water where it falls also. In many jurisdictions, using the above techniques can cut stormwater costs. The US EPA reports that comparisons between conventional stormwater techniques and low-impact development (LID) techniques shows that LID is almost always more cost effective.

- **Laundry Use** - In the absence of water meters, the water metric that we use for laundry use is 2 gallons of water per pound laundered. For luxury hotels, the pounds laundered per room per day is approximately 10-15 pounds. For economy hotels, the amount of laundry per room averages 2-5 pounds.

- **Dining Use** - The metric that is important to measure for kitchen use is the number of meals that are served per day. Typically 3-10 gallons of water is used per every meal served. Some hotels offer just coffee and continental breakfast while others serve full meals. The water that is accounted for in this category is for food preparation and sanitation and includes equipment such as garbage disposers, pot washers, tray conveyers, pulpers, pre-rinse spray nozzles and dish machines.

- **Ice Machines** - The metric for ice machines is dependent upon whether the ice machines are connected to the building's chilled water loop, air-cooled or water-cooled. There is a great need for an abundance of ice for commercial food preparation, preservation and beverage cooling at luxury hotels. The standard water requirements for ice making that is air-cooled or that uses the building's chilled water loop equates to 12 gallons for flake ice and 20 gallons for cube ice per 100 pounds manufactured. If the ice machines are water-cooled the water use per 100 pounds equates to approximately 120 gallons. Requirements for ice are estimated to be 2 pounds per guest and visitor per day.



- **Pools** - Water is needed as make-up in the pools due to evaporation, backwashing and splashing. This water should be sub-metered. Evaporation rates vary based on where your hotel is located and whether the pool is indoor or outdoor, but the area where waste is often the greatest is

because of poor backwashing procedures. For typical hotel pools, the backwash flow rate ranges between 70-100 gallons per minute. Newer filter technologies are available that significantly reduces the need to backwash.

In 2010 an audit of 20 hotels was completed in the Kingdom of Jordan. The hotels were organized into four categories, apartment hotels, 2-star, 3-star and luxury hotels. All hotels were ranked against each other.

After the report was issued, it showed that one of the luxury hotels was using much more water than the other luxury hotels. The Director of Engineering questioned the report and claimed that this was not possible because new fixtures were recently installed.

Upon further investigation it was determined that the cooling tower had a faulty float valve and that the swimming pool was being backwashed every night.

MAINTAINING AND MEASURING YOUR SUCCESS

Once you have put a water conservation plan together for your hotel, have funded it and have installed the recommended water conservation measures, how do you ensure that your hotel delivers the results and continues to deliver ongoing performance?

You need to create and implement a Measurement and Verification plan. You can develop a plan yourself, hire an engineering professional or engage a water-services company. Measurement and verification doesn't have to cost a lot, and many measurement and verification approaches are available.

Standard measurement and verification protocols exist through a variety of water-efficiency advocacy groups, such as the Alliance for Water Efficiency, American Water Works Association and IAPMO.

TODAY'S OPERATING REALITY

Hotels around the world continue to confront an environment of unprecedented challenges in operations cost. Hotels are being squeezed more than ever as operating costs continue to rise. Water costs are rising faster than any other line item. Management teams continue to exert intense pressure to

reduce cost in every area of operations.

Whether your hotel is large or small, any operating efficiencies that can contribute to the bottom line or further organizational goals are desired in this environment. Efforts that can deliver the greatest impact and largest savings for the organization should be given the highest priority. Measuring the water usage of your hotel against appropriate benchmarks will help you gain an understanding of your usage and costs and will help you make the right decisions for your hotel.

Horner, Russ, Co-founder, Water Management, Inc., http://hotelexecutive.com/business_review/3282/water-benchmarking-is-it-important-to-your-hotel

Bone-dry West Coast States Curb July 4 Fireworks Displays

Authorities battling dozens of large wildfires along the parched US West Coast clamped down on Independence

Day fireworks displays over fears that wayward sparks could trigger fresh blazes. Communities in Washington and Oregon have imposed restrictions or outright bans on fireworks, while Cupertino, CA, joined Alaska's largest city of Anchorage in canceling signature fireworks shows because of drought concerns.



The massive blazes that have marked an early start to the fire season, along with forecasts for scorching weather during the Fourth-of-July weekend, also have led police to crack down on illegal pyrotechnics sales, and lawmakers have issued stern warnings. "I suggest to show our patriotism, fly US flags, not fireworks," said Erin Janssens, Fire Chief in Portland, OR. In Alaska, where 26 large wildfires and hundreds of smaller ones were burning on July 2, bans on fireworks were in place in Anchorage, the southern Alaska town of Houston, near where a 7,200-acre blaze destroyed 55 homes, and in Fairbanks, where smoke from nearby fires inundated the city, leaving layers of ash on cars.

Johnson, Eric M., <http://www.msn.com/en-us/news/us/bone-dry-west-coast-states-curb-july-4-fireworks-displays/ar-AAcvtZQ?ocid=HPCDHP>, Reuters, July 3, 2015

FINAL WORDS . . .

Stay true to yourself. Never follow someone else's path. Unless you're in the woods, and you're lost and you see a path. By all means, you should follow that.

Ellen DeGeneres

