

Green Hotels Association

GREENING NEWSLETTER

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 are more amazing stories you'll definitely enjoy!

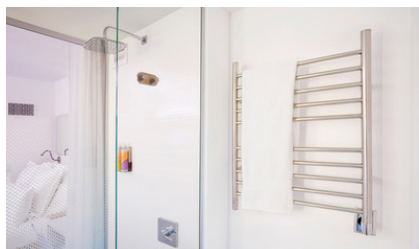
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Hotels "Designed Around You" Provide Warm Bath Towels

Located in accessible, upcoming urban centers, YOTEL hotels deliver luxury accommodation at affordable prices, creating a sense of community with spaces for work, exercise and social gatherings. Guests can enjoy designed spaces featuring the signature 'technowall' with smart TVs and connectivity for all their devices. The rooms themselves also include other innovations including rejuvenating monsoon-rain showers, relaxing mood lighting, and the piece de resistance: the comfort of wrapping yourself in a warm bath towel.

YOTEL, located in Manhattan, is equipped with radiant heated towel racks by **GHA ALLY MEMBER Amba Products**. The quality and design of these low-wattage units emphasize YOTEL's commitment to "design around you": giving guests the luxurious embrace of a cozy warm towel when stepping out of the shower. With the success of the initial rollout, YOTEL plans to add Radiant Heated Towel Racks to their upcoming locations in Boston and San Francisco.

When asked why YOTEL included heated towel racks into bathroom design, Stuart Pannell, YOTEL Senior Manager –



Global Design, explained, "Two reasons. Firstly, it is normally something found in an upper tier property and adds to the affordable luxury brand proposition we endeavor to achieve. Also, as we have concrete floors in our city bathrooms, it warms that

space up nicely considering our bathrooms are adjacent to the windows—especially in NYC and Boston winters!!"

Heated towel racks not only provide the satisfaction of warm towels, but also dry towels faster after use—guests not only appreciate the luxury, but are incentivized to reuse their towels more often. Reusing towels is not only great for the environment, but helps hotels save on laundry costs including detergent, water, energy and labor—some of hotels' largest expenses! The heat generated from heated towel racks also keeps humidity out of bathrooms, stopping the growth of mold and mildew.

Why specifically the Radiant? YOTEL selected the Radiant heated towel rack because "It is a good quality product with very good credentials. Amba Products is a solid supplier and has helped build loyalty. We've had minimal issues with them, and our guests love them. It seems to be a more European thing to have them in bathrooms, and guests regularly comment on how unusual it is."

The Radiant Collection is comprised of affordable wall-mounted heated towel racks offered in either round or square bar designs, with choice of straight or curved horizontal bars and two finishes: brushed or polished stainless steel. The collection also features a shelf unit which provides space to both stack and hang towels. Each Radiant is made from high-quality 304 stainless steel which is essential for the bathroom setting—giving these heated towel racks' superior corrosion and rust resistance. This collection also includes an integrated on/off switch with pilot light and uses a dry-element technology to heat up in as little as 15 minutes. With a power rating of 110–150 watts, each heated towel rack consumes power equivalent to about two light bulbs.

The US Green Building Council awarded LEED Gold Certification to YOTEL New York for demonstrating remarkable green building leadership while constructing and operating their environmentally-friendly hotel in New York. YOTEL's Pannell states, "We want to make our company and the way we do business as sustainable and environmentally friendly as possible. We want to give a little something back to our community and the people with whom we share this glorious planet." Amba heated towel racks support this vision. Learn more at **404/350-9738** or **ambaproducts.com/hospitality** TODAY!

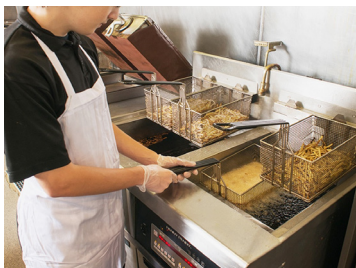
Tallowmasters joins the Darling Ingredients family

Tallowmasters, an 8-year GHA ALLY MEMBER, reached an agreement bringing Tallowmasters into the Darling Ingredients family under **DAR PRO Solutions'** restaurant services brand, and will be happy to service your used cooking oil and/or fat and bone account.

Darling has more than a century of experience and is a global platform for the development and production of sustainable natural ingredients from edible and inedible bio-nutrients. With a variety of processing operations in over 200 locations on five continents, they create a wide range of products and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, fuel, bio-energy, fertilizer and foods service industries.



Darling Ingredients and DAR PRO Solutions, like Tallowmasters, are dedicated to partnering with their customers in a way that ensures satisfaction, providing first-class service, best-in-industry equipment offerings, and a fully trained and dedicated staff to help with your pickup and administrative needs. The company has been developing indoor used cooking oil collection systems since the 1980s, continually improving on and diversifying their tank selections to meet customer needs and wishes with regard to space, volume and features.



DAR PRO Solutions makes the pickup of used cooking oil simple, safe and worry-free. Their professionally trained, uniformed and licensed service personnel, coupled with their

state-of-the-art equipment and an innovative approach to grease management, handle and recycle used cooking oil responsibly, efficiently and in accordance with governmental and environmental regulations.

The company continually works to identify and develop cutting-edge, value-added applications for used cooking oil, primarily in renewable fuels and animal feed ingredients, but also for use in a variety of everyday consumer and industrial products such as soaps, solvents, paints and plastics. Their market development efforts have helped to increase the value of used cooking oil, allowing them to provide value back to their customers beyond superior customer service.

Learn more at <https://www.darpro-solutions.com/restaurant-supermarket-solutions/used-cooking-oil-collection-pickup-recycling/>.

Looking for a reliable, professional and sanitary used cooking oil service provider? For a consultation or for used cooking oil removal, call **855/327-7761 (855/DAR-PRO1) 24/7!**

MARGARITAVILLE ISLAND HOTEL'S GREEN ON-PREMISE LAUNDRY

Suspended above a flood plain on concrete piers, Margaritaville Island Hotel in Pigeon Forge, TN, is inspired by the lyrics and lifestyle of singer-songwriter Jimmy Buffet. Cradled by the Great Smoky Mountains, the 134-room resort is at the heart of an "island" wonderland marked by a 200' sky wheel and



numerous unique shops, rides, arcades, restaurants, adventure courses and salons.

The hotel which debuted in 2014—offers 21 unique room types, includ-

ing a Celebrity Penthouse Floor consisting of three separate suites that sell like "hotcakes for \$2,000 per night," according to General Manager Kris Harmon. A full-service salon/spa and several restaurants add to the appeal.

Margaritaville Island Hotel & Laundry

Behind the scenes, a second-story laundry, engineered for efficiency, productivity and quality, processes all island laundry, which is about 20,000 pounds per week. Thanks to its use of

ozone and **8-year GHA ALLY MEMBER Continental Girbau Inc.** (Continental) soft-mount equipment, the laundry smartly saves approximately 30% in utility and chemical costs. Over five years, the hotel laundry is expected to shave \$95,000 from overall operating expenses.

"Outsourcing laundry would be difficult and costly," said Harmon. "Due to the popularity of action-packed Pigeon Forge attractions, the traffic here is dense. Keeping the laundry in-house was essential."

Developing the Hotel from an Existing Condo Project

Investors handpicked Harmon, a 27-year hospitality executive, to oversee the new property during its transformation from a defunct condominium project foreclosure. Together, they envisioned and developed the island concept. "There were a number of design challenges we hurdled because we weren't starting from a clean slate," she said. "Designing the on-premise laundry was a challenge."

To facilitate that process, Harmon connected hotel owners with Jeff Large of Laundry Systems of Tennessee. He worked integrally with the owners of Margaritaville Island Hotel to design and equip the highly efficient laundry.

Unique Laundry Design Challenges

Because the hotel and laundry are elevated on concrete pilings above a flood plain, Large installed two 90-pound capacity soft-mount Continental E-Series Washers, an ozone system, and two 120-pound capacity Continental Pro-Series II Dryers.

Unlike hard-mount washers, soft-mount E-Series Washers are freestanding. They slide easily into place without special foundations, grout and bolt-down. They also absorb up to 95% of the vibration during extract for quiet operation. "The laundry shares walls with neighboring shops, so quiet operation is imperative," said Harmon.

Spanning a half-mile in length, Margaritaville Island Hotel requires a typical housekeeper to travel 8 miles per day—making the laundry's central location critical. Laundry chutes, disguised as pillars, allow staff to quickly remove soiled laundry from the hotel's upper floors.



Pictured with Margaritaville Island Hotel General Manager Kris Harmon are Jeff Large, right, and Duran Harmon, left, of Laundry Systems of Tennessee

Continental Washers Deliver High-Speed Extract

Over the long term, the soft-mount washers and ozone system work together to drastically cut water, electricity and natural gas costs. When compared with hard-mount washers, which reach extract speeds of 75-200 G-force, the Continental soft-mount washers reach speeds up to 380 G-force, and thus, remove considerably more water per load. "Because more moisture is removed during extract," said Large, "it takes loads 30-50% less time to dry. This allows the hotel to complete more laundry in considerably less time. Dryers operate less often, which reduces dryer wear-and-tear and natural gas consumption, while extending linen life."

All told, it takes about an hour to wash and dry a 90-pound load of high-quality terry towels. "Thanks to the soft-mount washers, laundry productivity escalates, gas usage falls and

linens and towels are subject to significantly less tumbling action and wear-and-tear," said Harmon. "Our linens last longer."

The Double Whammy—Ozone & Soft-Mount Washers

By combining the high-efficiency washers with ozone technology, utility savings and productivity catapulted further. Altogether, the ozone-equipped laundry will save an estimated 521,000 gallons of water and 12,174 therms of natural gas per year, according to Large.

In the wash, ozone breaks down organic materials using only cold water, so the cost to heat water is minimal. "Because ozone effectively loosens material from linen fibers, it can eliminate the need for a pre-wash cycle," said Large. As a result, washers require less water and complete cycles more quickly. That's a good thing, added Harmon, because the hotel laundry processes everything washable on the island, from bed, table and spa linens, to towels, robes and uniforms. "We also handle laundry for our maintenance department," said Harmon, "which includes oily, soiled rags and uniforms."

The Value of Programmability

Equipped with the highly programmable Inteli control, each washer is programmed to automatically adjust water levels, cycle times, number of baths, water temperature and chemical injection according to fabric type. That way, towels, duvets, sheets, rags, robes, capes, table linens and shower liners, which each have separate programs, are washed properly and consistently every time. Operators simply load, enter a program number and press start.

"We've got special silk sheets and duvets for massage rooms that are cleaned using a pre-programmed spa setting," said Harmon. "The ozone and washer programmability deliver a high-quality clean and fresh fragrance."

Dryers with Built-In Safeguards

Meanwhile, dryers with moisture-sensing technology ensure items aren't over dried and damaged. Linens and towels last longer. "We inventory three par (per available room)," said Harmon. "Even during the summer, when occupancy is at 90%, we still have one par in inventory. We haven't touched that extra third par yet because of the ozone and soft-mount washers. We aren't buying as much linen as other hotels and we're in our second year of operation."

Linen replacement adds up, especially when it's of the highest quality. It costs approximately \$10,000 to replace one par for Margaritaville Island Hotel, according to Harmon. Protecting that investment by extending par life makes good business sense.

Discover more about Margaritaville Island Hotel at margaritavilleislandhotel.com and Continental Girbau at cgilaundry.com or 800/256-1073.

Standard Textile: Environmentally-Friendly Elevations™ Pool Towels

With less environmental impact and a fun splash of fade-resistant color, **8-year GHA ALLY MEMBER Standard Textile's** new Elevations™ pool towels increase energy efficiency by significantly reducing processing time. The towels arrive Room Ready For You® Laundered with Tide®—clean, fresh, and ready to use right out of the box, delivering water and energy savings by eliminating the initial wash cycle.

Guests experience the luxury of cotton, with loft and absorbency

targeted in the center of the towel. However, reduced product weight in patented, striking end-panel designs means much less time and natural resources needed to process.

Designed for performance and engineered for durability with Centium Core Technology®, Elevations™ offers a stronger, longer lasting product, reducing waste disposal and replacement frequency.

Standard Textile uses compressed and recycled corrugate to ship Elevations™, and aggressively recycles both manufacturing supplies and byproduct materials such as waste fiber and fabric, corrugate and yarn cones.

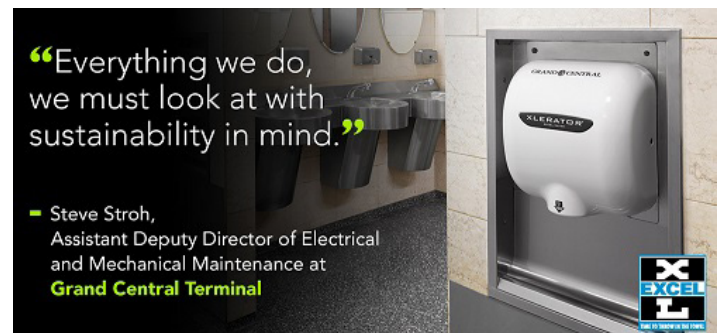
To learn more, visit hospitality.standardtextile.com/pooltowels/.



GREEN AND GRAND: NYC'S ICONIC TRAIN STATION EMBRACES SUSTAINABLE RESTROOM TECHNOLOGY

For a city famously short on sleep, New York claims an impressive share of the lodging industry; behind only Sin City and theme-park-packed Orlando, the Big Apple's hotel market is the third largest in the nation. No doubt, many of its millions of overnight visitors enter NYC via Midtown Manhattan's legendary Grand Central Terminal, where their first stop may well be a pit stop—in a pleasantly clean and green restroom environment.

Given its popularity and historical significance, it's hard to fathom that the country's busiest train station, esteemed for its Beaux-Arts architecture, was once in danger of being destroyed in favor of a high-rise office complex. Spared through a preservation campaign led by Jacqueline Kennedy Onassis and a favorable ruling by the Supreme Court of the United States, Grand Central was listed on the National Register of Historic Places and declared a historic landmark in 1976. With the building and its rich history preserved, the first of many restoration projects commenced.



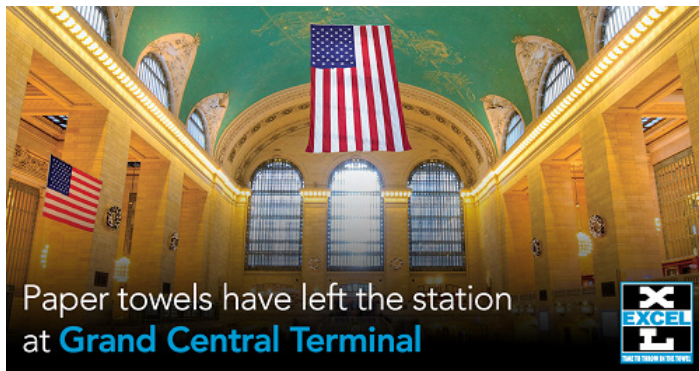
Areas receiving particular attention were the restrooms throughout the facility. Originally outfitted with paper towel dispensers, restroom floors were often strewn with errant waste, and the sinks and toilets clogged with improperly discarded paper towels, despite routine cleaning and maintenance.

To eliminate these problems and other issues associated with paper towels like the inherent labor, maintenance and waste, hand dryers were considered as a sustainable solution. An added challenge, however, was finding a product that could

meet performance needs without compromising the integrity of its original architecture.

While at a rest stop, Steve Stroh, assistant deputy director of electrical and mechanical maintenance at Grand Central, experienced the XLERATOR® Hand Dryer. “We thought if they could hold up to the abuse of a public rest area, [XLERATOR] would be a great option at Grand Central,” said Stroh of the high-profile venue, which hosts 750,000 visitors daily. “We dug around and researched the XLERATOR® and saw that it also had a lot of green certifications.”

Ultimately, XLERATOR® Hand Dryers proved to be the perfect solution at Grand Central, with 24 units replacing paper towels throughout the public and office spaces of the terminal. The XLERATOR®s provide more benefits than just a cleaner restroom environment; touch-free, sensor-activated technology reduces touch points and significantly improves hand hygiene. Stroh also had selected a custom cover—available for XLERATOR® Hand Dryers in a plethora of colors, textures and finishes—to fit in with the décor. “The new covers are great for our application because we can scrub them to get rid of graffiti and keep them clean,” he noted.



Paper towels have left the station at **Grand Central Terminal**

“XLERATOR® changed the standard for performance, reliability and customer satisfaction,” explained William Gagnon, vice president of marketing and sales at Excel Dryer. “We knew it would be put to the test at Grand Central with their tremendous amount of traffic. If the XLERATOR® can make it here, it can make it anywhere!”

Located in East Longmeadow, MA, **15-year GHA ALLY MEMBER Excel Dryer, Inc.**, has been manufacturing the finest American-made hand dryers for over 50 years. This family-owned, world-renowned company created the high-speed, energy-efficient category of hand dryers with its invention of the original, patented, high-speed, energy-efficient XLERATOR®.

To view print and video versions of the Grand Central Terminal case study, visit exceldryer.com/case-study/grand-central-terminal. For more information about Excel Dryer or its product line, visit exceldryer.com.

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CONSERVATION THAT WORKS FOR LOCALS

Brett Jenks was 24 and teaching English in Costa Rica when a couple of environmental conservationists from an American non-profit called Rare came to him with a problem. It was the early 1990s and eco-tourism was on the rise, but most of the local jobs were going to Westerners. Could he train Costa Ricans to work as nature guides? Mr. Jenks created a 10-week course in English and biology that soon transformed locals into

personable eco-experts. This lined Costa Ricans up for well-paying tourism jobs, which helped them benefit from maintaining the country’s environmental beauty.

“That’s when I caught the bug,” says Mr. Jenks, now 50 and the director of Rare since 2000. “There are so many problems where we can create meaningful incentives for people to preserve natural resources for future generations.”

When Rare first approached Mr. Jenks, the outfit had a handful of staff and a budget of less than \$1 million. Now the Arlington, VA-based group has become a \$25 million operation, with 170 employees and offices in Brazil, China, Colombia, Indonesia,

Micronesia, Mozambique and the Philippines. Rare has executed hundreds of campaigns in more than 55 countries to protect wildlife, preserve waterways, expand eco-tourism and



push for green regulation. Most of its work involves getting farmers and fishermen in environmentally-rich, economically-poor areas to see the value in behaving sustainably.

Rare’s mission was land-based until around five years ago, when they turned their attention to fisheries. “We have fished out a lot of the ocean,” says Mr. Jenks. “If you measured fisheries like a tank of gas, it would be fair to say we’re at a quarter tank.”

Most people blame big commercial fleets, but Mr. Jenks says that small-scale fishers, many of them in motorless boats pose at least as great a threat. “When there are tens of millions of them along the coastline, where most of the world’s marine biodiversity is, they can and have done a lot of damage.” The fact that these small-scale fishermen provide food for about a billion of the world’s poorest people makes their fate—and the fate of their stocks—all the more urgent.

Changing the behavior of millions of poor coastal fishermen isn’t easy. But Rare’s Fish Forever program, which the non-profit has begun rolling out in Brazil, Indonesia, Mozambique and the Philippines has already found some success.

In the Philippines, for example, granting fishermen exclusive access to coastal zones has made it possible to create local sanctuaries where fish can spawn and mature. Fishermen with explicit rights are more likely to enjoy the benefits of following the rules and not over-fishing. “If they play their cards right, the ocean becomes a natural annuity,” says Mr. Jenks. Rare’s analysis shows the fish stocks in pilot zones rising 47% in two years.

Rare is now using this approach in 90 of the country’s 800 coastal municipalities. It is also in talks with the Philippine government and several international development banks to figure out how to scale this solution nationally and perhaps globally.

In the world of conservation, good news is rare. “Being an environmentalist means the victories are few and far between,” Mr. Jenks says. That is why he pushes Rare’s staff to concentrate on what’s working—what he calls “a mind-set of solutionology.”

He is quick to rattle off Rare's achievements, which include protecting the once critically endangered St. Lucian parrot in the Caribbean and convincing farmers in China to grow cotton organically. "It's not just hope driving us," Mr. Jenks says. "We have ample evidence that this approach is working." Learn more and/or contribute at rare.org.

Bobow, Emily, Conservation That Works for Locals, The Wall Street Journal, June 3-4, 2017

Iconic New York beach gets climate-resilient boardwalk

It cost \$70 million per mile to replace the tattered wooden boardwalk at Rockaway Beach, a New York community battered by Superstorm Sandy in 2012. Rockaway Beach, where a holiday getaway at the southern edge of Queens long ago transformed into a dense neighborhood, had its wooden boardwalk shredded by Hurricane Sandy. The homes behind it were crushed by a storm surge and inundated with floodwaters. Nearly five years later, the wooden walkway has been replaced by more than five miles of sand-toned concrete atop 50 million pounds of sandbags and a retaining wall that holds in place new sand dunes. It is meant to help protect residents and residences from storm surges. The boardwalk and dunes were built at a cost of \$70 million a mile, with the final segment of beachfront walkway put in place last month.

Seas along the New York coastline have risen by about a foot during the past century. Warming has melted ice and expanded ocean water, currents have shifted and geological processes have caused land to sink. That extra sea level exacerbated Sandy's heavy toll.



Sea level rise is accelerating globally as greenhouse gas pollution levels rise, making floods and storm surges worse and more

common. Climate change also makes storms fiercer. In a densely populated region rife with vulnerabilities and flush with riches, the Big Apple is showing how cities elsewhere could adapt.

Subway lines and rail yards were rebuilt and fortified against flood risks after Sandy. Emergency shelters were built and volunteerism has been promoted. Building codes have been revised. Electrical equipment is being placed high in skyscrapers instead of at ground or basement level, where it risks being inundated.

The boardwalk cost \$340 million, paid for by federal taxpayers using some of the \$50 billion in Sandy relief funding authorized by Congress and signed by President Barack Obama in 2013. The sand dunes in front of it cost more than \$35 million to build, and they will need to be replenished after the next big storm or to counter erosion.

The Rockaway Peninsula is a 10-mile strip of land an hour's drive or subway ride from Wall Street. It is less than half a mile wide in many places. While new sand dunes will protect neighborhoods against storm surges that strike directly from the ocean, little has been done to protect neighborhoods near bays on the peninsula and elsewhere from flooding.

Upton, John, Iconic New York beach gets climate-resilient boardwalk, Climate Central, June 20, 2017

LED streetlamp conversions enable electric car charging, too

The global fleet of electric vehicles grew 60% last year and, while predictions vary, some people claim that we'll all be driving (or riding in) electric vehicles within just a few decades. But in many cities, one major impediment could slow down adoption: Where the heck do you charge your car if you don't have a driveway or garage?

Hounslow Council in London has implemented an interesting—and aesthetically pleasing—solution to this problem. It has converted its streetlights to energy efficient LEDs and, in doing so, is integrating electric vehicle charging points in the base of those streetlamps. The charge points themselves come from German company Ubitricity, and they integrate with a custom charging cable, which is ordered by the EV owner/driver and has a built-in electricity meter.

So if you happen to live in Hounslow, you simply request a charging point from your council, and they install three near your house. (They are trying to avoid painting dedicated electric vehicle bays.) You then order a Ubitricity cable, plug in, and start charging. Ubitricity then sends you a monthly bill, charged at a competitive rate of £0.13 per kWh. And that's it.

It's a pretty neat solution. I like the fact that the council is building them out with several sockets per request, hopefully encouraging friends and neighbors to get on the electric vehicle wagon, too.



Given the fact that London's air pollution laws/vehicle restrictions are only likely to get stricter in the future; it makes sense for councils to be building the infrastructure out now.

Grover, Sami, <https://www.treehugger.com/cars/led-streetlamp-conversions-enable-electric-car-charging-too.html>, June 20, 2017

Researchers use light to manipulate mosquitoes

Scientists at the University of Notre Dame have found that exposure to just 10 minutes of light at night suppresses biting and manipulates flight behavior in the *Anopheles gambiae* mosquito, the major vector for transmission of malaria in Africa, according to new research published in the journal *Parasites and Vectors*.

Critical behaviors exhibited by the species, such as feeding, egg laying and flying, are time-of-day specific, including a greater propensity for nighttime biting. A recent report from the World Health Organization stated an estimated 212 million people worldwide are infected with the disease, resulting in 429,000 deaths—mostly children.

Insecticide-treated bed nets and walls have helped prevent bites and reduce malaria, but researchers say mosquitoes are adapting to preventive conditions, leaving adults and children vulnerable in the early evening and early morning hours—when they are not under the nets or in the house.

"Anopheline mosquitoes are adapting to these current meth-

ods by developing resistance to insecticides and by shifting feeding to earlier in the evening or later into the early morning, times of the day when people are not in bed and therefore not protected by a net. So what used to be an efficient method is becoming less effective,” said Giles Duffield, associate professor of biology in the Department of Biological Sciences at the University of Notre Dame and the Eck Institute for Global Health, who specializes in the molecular biology of circadian rhythms



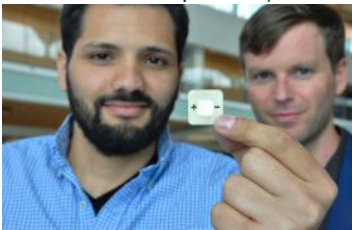
and photobiology in mammals and mosquitoes. “We need to discover new methods to address mosquito control and prevention. The systems and tools we currently have including global distribution and usage of insecticide-treated bed nets and spraying are not enough.”

Researchers use light to manipulate mosquitoes, http://www.enn.com/top_stories/article/51544, University of Notre Dame, June 16, 2017

This tiny cell packs power—then can be tossed away

SFU researchers are developing a tiny power source that activates with only a few drops of water and can provide instant power up to 100 minutes before being tossed away.

The patent-pending biodegradable PowerPAD (Power: Portable And Disposable) is a single-use disposable battery—a mere inch in diameter—in which water stimulates a chemical reaction that changes the oxidation of its atoms.



The result is instant power capable of running a variety of portable electronic devices, such as diagnostic devices

operating at 1.5 to 3.0 volts, where it can directly replace a lithium ion coin cell battery.

The light-weight battery, which continues to be fine-tuned, is being developed with a variety of applications in mind, from everyday use to meeting potentially critical needs, such as during disasters, or as temporary power in remote areas of the world.

This tiny cell packs power—then can be tossed away, Simon Fraser University, http://www.enn.com/top_stories/article/51539, June 16, 2017

An energy-efficient cleaning robot

State-of-the-art solar cells are efficient—but are even more so when they are kept clean. A cleaning robot developed by Norwegian researchers enables solar panels to deliver at full capacity.

At a solar energy farm just outside Budapest in Hungary, a cleaning robot is industriously getting on with today’s task. Hundreds of square meters of solar panels are waiting to be cleaned—as quickly and effectively as possible. And without the use of chemicals or any unwanted discharges to the natural environment. The robot is the result of a joint project between Norwegian researchers and the Hungarian company ProDSP Technology.

“It’s a well-known fact that solar panels work more efficiently when they’re clean,” says SINTEF researcher and Project Manager Martin Bellmann who, in his day-to-day work, develops what is known as sustainable energy technology. “But what’s new here is that we’ve developed a robot to do the job. This means that the solar cells are cleaned both quickly and efficiently with as little as possible wear and tear or environmental impact,” he says.



SINTEF, http://www.enn.com/top_stories/article/5152, June 14, 2017

Motor-boat noise makes fish bad parents, leading to the death of their babies

Noise from motorboats is making fish become bad parents, and reducing the chance of their young surviving, research led by marine experts at the University of Exeter has shown. The sound of motorboat engines disturbed coral reef fish so acutely it changed the behavior of parents, and stopped male fish properly guarding their young, feeding and interacting with their offspring.



The research, which involved playing recordings of natural reef noise or intermittent motorboat noise around 38 fish nests over 12 days, found that the death-rates of baby fish exposed to boat engine noise increased significantly, with six of the 19 boat-noise nests suffering complete mortality.

The University of Exeter led team of marine biologists said that noise from boats is a global pollutant, distracting fish and making them unable to properly protect their young from predators. They believe motorboat noise should be factored in when trying to protect fish stocks and manage fisheries.

University of Exeter, http://www.enn.com/top_stories/article/51448, June 7, 2017

NOISE POLLUTION INVADES PARK LANDS

Noise from aircraft, traffic and commercial development is drowning out the natural quiet of many wilderness areas and parks, according to a new analysis of noise pollution in US protected lands made public in *Science*.

The sounds of people on the move or at work are pervasive in public lands set aside for recreation, resource conservation and respite from the din of daily life, said scientists at Colorado State University and the US National Park Service who analyzed noise levels at 492 federal, state and local parks. They calculated that the sounds people make—from the racket of ringing phones and the rumble of road traffic, to the clatter of mining, drilling and logging—have raised the levels above natural background noise in two-thirds of US protected areas, with adverse consequences for wildlife and for the 300 million or so people who seek the tranquil hush of park lands every year.

“The din of modern life extends into protected areas,” said acoustic biologist Megan McKenna at the Natural Sounds and Night Skies Division of the US National Park Service in Fort

Collins, CO. The study arises from a growing appreciation of the effects of excess noise on human health and wildlife behavior. To quantify the human contribution to park noise, the researchers led by Colorado State University conservation biologist Rachel Buxton created a computerized national soundscape that approximated the level of noise during an average summer day. They collated and analyzed millions of hours of park-land sound recordings. They fed the acoustic data into a computer algorithm that combined it with dozens of landscape variables to calculate how much extra noise people added.

Overall, they found that, depending on the locale, human activity boosted noise levels up to 10 decibels above natural levels. For comparison, sounds in cities often exceed 65 decibels—about the level of a running air conditioner. In natural settings, sounds rarely exceed 40 decibels—about the noise level of a babbling brook. The quietest parks have a background noise level of less than 20 decibels. Road traffic and aircraft were the biggest source of park noise, Dr. Buxton said.



In an independent study of air traffic in national parks in 2010,

researchers at Colorado State found that overflights of Grand Canyon National Park had grown to about 55,000 a year, with more than 100 helicopters in the air over the canyon on the busiest days. Sound levels in spots reached as high as 76 decibels, they said.

The impact of noise on wildlife worries conservation biologists. Noise pollution can deafen fish, scare off animals, and muffle the sound of mating calls among wild birds, hindering their ability to hunt for food or to warn each other about predators. "They can no longer hear these calls," said avian behavioral ecologist Christopher Templeton at Pacific University in Oregon, who studies the effects of noise on birds in the US and Europe. Other birds sing louder to be heard or flee the noisy area entirely.

Hotz, Robert Lee, Noise Pollution invades Park Lands, The Wall Street Journal, May 5, 2017

Renaissance Tampa Hotel at International Plaza keys in on empowering workers

Jim Bartholomay started his career as a chef—a position where it's pretty normal to shout and throw things. Bartholomay though, is an even-keeled kind of guy and didn't stay in the kitchen long.

He moved up within management of the Somerset Marriott in New Jersey and became general manager of the Renaissance Tampa Hotel at International Plaza when it opened in 2004. For the fourth year, the hotel has been ranked as a Tampa Bay Times Top Workplace, and took the crown as the top small company in the 2017 survey of employees.

The hotel has a tight workplace culture, employees say, and 13 years after the hotel first opened, it feels like family. "(Bartholomay) has known my son since he was little," said Jenny Usme, who started working at the hotel around 2005 as a

server and is now a banquet team captain.

The key is to hire nice people and to empower them to do what they enjoy, Bartholomay said. The employees set up a selfie area in a lounge with flower petals for Valentine's Day, and a letter-writing station with a mailbox for children to write to Santa Claus in December.

The hotel recently went through a \$10 million renovation, when the bright orange and yellow paint in the lobby was replaced with a more neutral gray, with modern high-top chairs and honeycomb-style lounge seating. "We took down the tones to make more of a relaxing environment," Bartholomay said.



The hotel is next to Neiman Marcus in Tampa's International Plaza and Bay Street and its dozens of retailers and eateries, including its in-house restaurant, Pelagia Trattoria.

Just down the road from Tampa International Airport, the Renaissance's district boasts about 9,000 hotel rooms—the highest concentration in the city. Despite the increased competition since a handful of new hotels have opened nearby, Bartholomay said that the Renaissance is often fully booked.

Located in the heart of Tampa's West Shore business district, the Renaissance Tampa International Plaza Hotel is proud that its accommodations make guests feel "as if they're in a Mediterranean villa, a Spanish square or even a Cuban plaza." Throughout the hotel's lobby and guest rooms, bright hues of red and yellow, hand-glazed tiles, custom ironwork and Italian crystals create the ambiance of a Costa del Sol mansion.



Jim Bartholomay, GM

What employees say:

- We all work hard to take care of our customers and each other. We all like to have fun, which helps to keep the stress level low. Our hotel is consistently ranked in the top for all the measurements.
- It's the best place I've ever worked. I actually enjoy coming to work!
- (The hotel) gives me the opportunity to accomplish new things and make guests happy and satisfied.

Knothe, Alli, Times Staff Writer, <http://www.tampabay.com/news/business/renaissance-tampa-hotel-at-international-plaza-keys-in-on-empowering/2319473>, April 7, 2017

Cook fluffier pasta

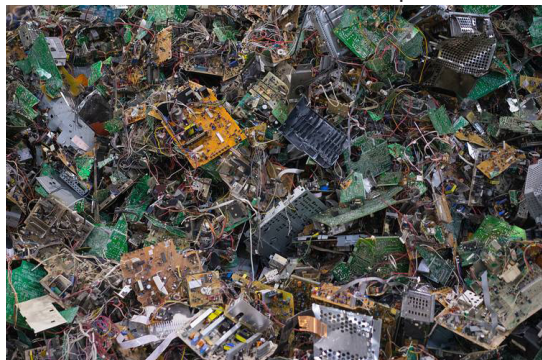
Though many add oil to the cooking water to keep pasta and rice from sticking together, oil can prevent sauce and seasoning from adhering to the grain, leaving a bland meal. Instead, add 3 tablespoons (per gallon of water) of white vinegar to water to eliminate stickiness.

To Handle Electronic Waste, Freeze It and Pulverize It

Scientists say a new technique can make it more profitable to harvest metals and other materials from circuit boards in old TVs, computers and more

The digital revolution may or may not be televised, but sooner or later, any TV that might have shown it will be obsolete.

Despite advances in miniaturization and recycling, millions of tons of electronic waste still end up in landfills—and reusable



materials go to waste for want of cost-effective ways to recover them. More than 46 million tons of e-waste was produced world-wide in 2014, but only 15% was formally collected for recycling

and safe disposal, says the Institute for the Advanced Study of Sustainability, a UN think tank.

So scientists at Rice University and the Indian Institute of Science, or IIS, have come up with a new technology aimed at improving the economics of reclaiming valuable metals and other materials used to make circuit boards. The scientists hope that their lab technique, which IIS has patented in India, can be scaled up commercially into an industrial process that makes e-waste recycling more profitable.

Their idea, in a nutshell, is to make the stuff really cold and then to pulverize it.

In lab experiments, the scientists put circuit boards from optical computer mice into an argon-filled steel box of about 10 inches on each side, along with a hardened steel ball weighing about a pound. The box was cooled by a stream of liquid nitrogen to a temperature of -182 degrees Fahrenheit. The scientists found that vibrating the box for up to three hours produced a

jackhammer effect, smashing its contents into nanoscale bits—particles so small that they are measured in nanometers (one nanometer is a billionth of a meter). Such particles are invisible to the naked eye.

This approach is very different from the techniques currently used for harvesting metals and other materials from circuit boards. These mostly rely on chemicals or heat, says Chandra Sekhar Tiwary, one of the scientists, who says that the pulverizing method (if it can be scaled up) is likely to be more affordable and energy-efficient and also free of toxic emissions. It would also harvest more of the reusable products in circuit boards, which can include aluminum, copper, gold, nickel, lead, silver and tin, to cite just the metals. Dr. Tiwary said, “Burning or using chemicals takes a lot of energy while still leaving waste.”

Cold makes things brittle and easier to smash to bits. And unlike heat, which makes things easier to combine, cold makes them more prone to separate. The special characteristics of nanoscale particles can be exploited in sifting them by type and putting them to use. “The settled nanoparticles of metals can be recovered using conventional separation methods,” the scientists write, such as a wet shaking table or other techniques employing gravity or magnetism.

One simple approach is immersing the particles in water and relying on sedimentation, says Dr. Tiwary. The polymers, for example, are the least dense and tend to float, while denser materials are more likely to sink to the bottom. The water can be reused once recovery is complete, as can the chilling nitrogen.

Another virtue of the new approach, Dr. Tiwary adds, is that the makeup of circuit boards varies widely from product to product. The new technique, he says, is flexible enough to work on any type of circuit board and still recover all the reusable parts. The next step, he notes, is to secure funding to use the technology on a scale larger than a few mouse-boards but smaller than an industrial facility.

Akst, Daniel, A Frigid Solution For E-Waste, The Wall Street Journal, April 8-9, 2017
C.S. Tiwary, S. Kishore, R. Vasireddi, D.R. Mahapatra, P.M. Ajayan and K. Chattopadhyay, Electronic waste recycling via cryo-milling and nanoparticle beneficiation, Materials Today, March 20, 2017

FINAL WORDS . . .

Someone's sitting in the shade today because someone planted a tree a long time ago.

Warren Buffett, investor and philanthropist