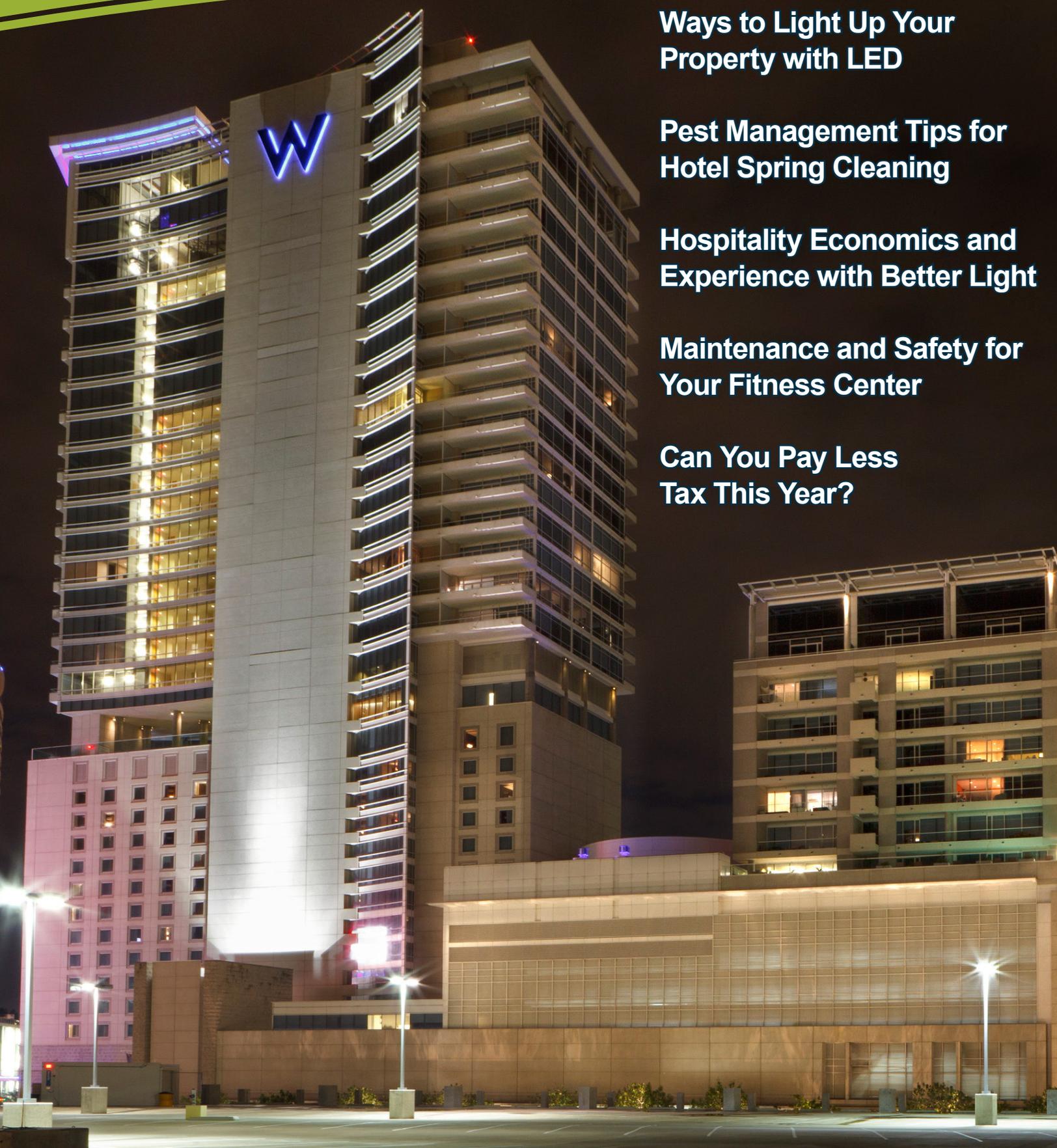


ISSUE

22

SPRING 2016

Lodging Engineer



Ways to Light Up Your Property with LED

Pest Management Tips for Hotel Spring Cleaning

Hospitality Economics and Experience with Better Light

Maintenance and Safety for Your Fitness Center

Can You Pay Less Tax This Year?

Table of Contents

Light Up Your Property's Look with LED *by Jim Morris*

Gardeners have always known that light makes things grow. This holds true for hotels too. Three different hotel properties' innovative LED lighting systems are discussed. Each property claiming to have grown business revenue and customer satisfaction through their investment in LED lighting.

As I See It *by Robert Elliott*

NAHLE continues to listen and focus on the changing needs of our membership. The Certified Chief Engineer (CCE) training program continues to grow as several hundred engineers have completed their training in the past couple of years. Currently the CCE program is undergoing some major changes and just launched a BETA test in December featuring a number of new benefits.

Designing Hospitality for Economics and Experience with Better Light *by John Casadonte*

Quality LED technology is transforming today's hospitality experience. High performance LED lighting is rapidly extending beyond cost effective energy and maintenance savings to include reinforcing hotel brand image and customer loyalty.

Five Pest Management Tips in Time for Spring Cleaning at Your Hotel *by Patrick T. Copps*

With the arrival of spring, pests are leaving their winter environment in search of food and water. Five effective tips are discussed to help prevent pest finding residence at your hotel.

Preventative Maintenance and Safety Considerations for Your Fitness Center *by Glenn Colarossi and Kevin Novak*

Many guests book their hotel stay based upon the amenities a property offers. Discover the importance of providing routine maintenance and repair for three of the most commonly found cardio fitness machines found at your hotel's fitness center.

Lock Down Your Hotel, Keep Safety In, and Unauthorized Personnel Out *by Manny Mercado*

Improving security with some simple procedures can create a safer and healthier environment for your guests and staff as well as keep unwanted intruders out of your building.

Process Cooling and Legionnaires' Disease *by Hunter Ronson*

A deadly bacteria could be lurking in your HVAC system. Learn the cause and guidelines for preventing infection at your facility.

Kitchen Preventative Maintenance *by Todd Isbell*

See how keeping regular time logs of kitchen appliances can help you avoid an unfortunate encounter with a health inspector.

Can You Pay Less Tax This Year? *by Jit Tandon*

Get some insider tips from a tax advisor on how to save some money this tax season. If you are a hotel engineer and you don't know whether to itemize your return – read here. This article is for you!

LODGING ENGINEER™ reports about people, events, technology, public policy, practices, study and applications relating to hotel and motel engineering, maintenance, human communication and interaction in online environments.

CONTACT

P.O. Box 30844 • Alexandria, VA 22310
703-922-7105
www.nahle.org

Editor

Robert Elliott (robert.elliott@nahle.org)

Contributing Writers

Jim Morris, John Casadonte, Robert Elliott, Patrick T. Copps, Glenn Colarossi, Jit Tandon,
Todd Isbell, Manny Mercado, Hunter Ronson, Kevin Novak

Correspondence address to: articles@nahle.org

Administrative Issues: admin@nahle.org (all submissions, editorial matter, artwork,
subscriptions, address changes)

Art Director / Magazine Design & Layout

Chris Quinn • Quinnconcepts • (888) 973-2247 • chris@quinnconcepts.com • www.quinnconcepts.com

Advertisements

See www.nahle.org or call 703-922-7105 or email: sales@nahle.org
Larry Wilhelm 410-849-2177 larry@nahle.org

Internet Uniform Resource Locator of current and archived issues: www.nahle.org/Lodging_Engineer

All opinions and views are solely those of the participants, writers or editors and are not necessarily the views of the newsletter or its sponsors. Contents Copyright © 2009-2016 NAHLE, LLC or by the author and may not be re-distributed in any form or stored for the purpose of serving through any other information retrieval system, except approved mirror sites, without the expressed permission of the publisher and author. Hypertext links to the magazine material may be made freely. No guarantee or warranty, expressed or implied, is made about the value or stability of the information or links made herein.

reach

thousands of hotel engineers for just pennies a day



Have a product or service for hotel engineers?
Reach them with your ad in Lodging Engineer.

(703) 922-7105 • Download our Media Kit www.nahle.org/mediakit/

WAYS TO LIGHT UP YOUR PROPERTY'S LOOK WITH

LED

Hotel engineers are quickly learning what gardeners have always known. Light makes things grow, whether you're running a hotel or a greenhouse. In this age of LED innovations, lighting systems can enhance hospitality-industry properties and help grow business more effectively and energy-efficiently. Case studies from three different parts of the USA reveal specifics about what kind of lighting to use and how to use it to give your property a marketplace advantage.



by Jim Morris

Lone Star Court Hotel, Austin, Texas



When Valencia Group built the Lone Star Court Hotel, its owners, architects and engineers thought they had considered everything necessary to succeed in creating a retro, 21st century motor court. They created an open courtyard, added a bar with roll-up garage doors, put in lots of seating and several fire pits, and staged live music nightly. But when the sun went down, so did the property's energy, ambience and safety.

Well designed architectural and landscape LED lighting came to the rescue. Done in three phases, the project began with the installation of 90 small, contemporary-looking, LED down-lights in the sides of handrail posts to mitigate safety issues with open-rail stairwells. In Phase 2, landscapes and beds came alive after five with the addition of six different fixtures used for the remainder of the landscape lighting -- 12 small, FX Lumiere LED tube-style, tree-mounted lights; 38 Volt brass spotlights; four Focus Industries waterproof "pond" lights; six small Cooper LED lamps on the front entry trellis; 30 LED B&B path lights; and 15 Beachside Lighting tree-mounted fixtures. The Final Phase included additional spot lights and Jesco LED strip lighting for a large entry planter, six 120v barn-style light fixtures in front of the lower level elevator doors, and the project's highlight -- five runs of commercial-grade string lighting hanging down under the pavilion in the center court yard to create twinkling party lighting for outdoor special events.

Bridgewater Manor, Bridgewater, New Jersey



Any venue close to New York City competes heavily for wedding and reception business. Bookings at Bridgewater Manor were suffering from a poorly designed existing low-voltage lighting system that was in serious disrepair. When asked if he wanted a 100 percent LED system that would reduce running and maintenance costs, the engineer said “I do.”

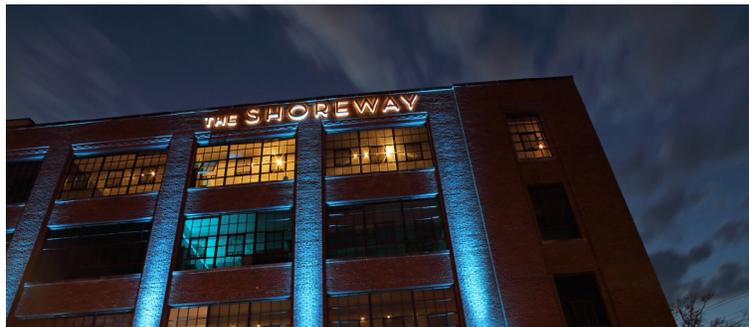
To match the manor’s cash-flow fluctuations, the project was split into phases. In Phase 1, a B&B well light equipped with 17W LED bulbs projected a clear and well-defined light to give the three-story building a majestic and stately look as guests came down the drive. Front beds were lit in residential-style -- small path lights provided safety along the walkways; soft wash lights highlighted the bushes; and lighting for an 8-foot tall fountain created a focal point to soften the rigidity of the main façade.

In Phase 2, lighting gave a wide hardscape area surrounded by beds and used for wedding receptions a warm and welcoming space. Bullet lights produced shadows on the walls behind plantings, as well as highlighting statues and a pond. Tiny spotlights accented the pergola where most wedding photos were shot.

For more information about specifications and efficiency information for each of the three projects, email jmorris@outdoorlights.com. He’ll be glad to shed more light on how to enhance your competitive edge in any market.

Jim Morris is Director of Field Operations for Outdoor Lighting Perspectives Hospitality, where he champions outdoor lighting design plans that can save up to 60 percent in energy costs. Jim can also be reached at 804-353-6999, ext. 244.

Shoreway Luxury Lofts, Cleveland, Ohio



The shores of Lake Erie can have some periods of brutal weather, especially on the roof of a decades-old four-story warehouse renovated to house luxury lofts. The Lofts’ rooftop deck lighting project had several objectives 1) to enhance the outdoor living environment without detracting from the inspiring views, 2) to use fixtures that would be highly durability against the elements, 3) to ensure lighting was not visible from the street when viewed at a 45-degree angle, and 4) to maximize efficiency.

Thirty-two uniquely designed deck fixtures were used on the main deck because they combined a new state-of-the-art LED light source with a vintage look reminiscent of Lake Erie’s industrial past. When mounted on black posts, their oxidized finish made them almost invisible. Eight more BB02s could be concealed under a central planter to cast a glow in the center of the deck. Ninety feet of pavilion lighting with medium-base, ultra-warm white LED bulbs was strung 11 feet in the air in a zigzag pattern over a walkway connecting deck areas to be visible and engaging from the street. The whole effect created a fun transition from the elevator entrance to the main deck and its incredible views of the lake and the cityscape.

AS I SEE IT

by Robert Elliott



Welcome to the first issue of 2016 of Lodging Engineer. NAHLE has some exciting news about our continuing education program for hotel engineers, which I describe below. But, first, I will take this opportunity to thank all our contributors for the work they do and the broad range of subjects they cover. There is a breadth of knowledge between these pages in each and every issue. Thank you to everyone who shares their piece of expertise.

As I always say, school is not out and you are never done learning. Continuing education for the hotel engineer is very important and critical for long-term success. Education makes a person complete. It enriches a person's understanding of himself. Those hotel engineer professionals who take the time to pursue continuing education will gain an edge during the hiring process and beyond over their competitors.

Good education is an eligibility criterion for employment in any sector of the industry. We are weighed in the market on the basis of our educational skills and on how well we can apply them.

Do you remember the days of reading text books and doodling on the side of your spiral notebook while you tried to take copious notes? Technology has changed every sphere of life and education is no exception. Technology has revolutionized the NAHLE certification program by:

- Providing easy access to information;
- Increasing a greater interest in learning;
- Increasing the retention of information;
- Enhancing robust information storage;
- A better presentation of information;
- Making teaching interactive; and
- Making knowledge sharing easy.

“A leading hospitality REIT now offers NAHLE CCE graduates an extra \$2/hr as part of their HR policy”

The education provided by NAHLE equips us with the expertise needed in helping us realize our career goals as a hotel engineer. Education provides us with knowledge. Expertise is an in-depth knowledge about our field and it should open doors to career opportunities. Continuing education creates better prospects of career growth. It helps build character.

Education is an investment in human capital. Continuing education also benefits employers by contributing to longer employee work terms. Education makes us capable of interpreting things correctly and applying the gathered information in real-life scenarios. A leading hospitality REIT now offers NAHLE CCE graduates an extra \$2.00 per hour as part of their HR

policy and hiring criteria. I believe that employees who receive training, mentoring or reimbursement for continuing education credits are more likely to remain

regional manager of a group of hotel engineers. Designated 'Team Leaders' can easily monitor group

“NAHLE’s online CCE training program undergoes major overhaul for 2016”

with their current employers as they recognize their company’s investment in their career. Continuing education creates stronger, more engaging employee-employer work relationships. And, perhaps most important, training hotel engineers is the first line of defense for savvy asset managers.

At NAHLE, we have undergone a major change in our education program. We have changed our software platform. Under our new system, you can now:

- Access your textbook online,
- Take practice exams for each chapter,
- Create your own Password and User ID,
- Read additional reference materials by electronically linking to articles and websites,
- View videos designed to compliment an issue or chapter, and
- Download your certificate of completion online.

Improvements also abound for the corporate or

progress and individual areas of improvement. Our required examinations are now offered in both Section or Chapter formats allowing closer scrutiny of individual engineer’s area(s) of needed improvement. Team Leaders can also create custom reports and receive automated weekly or monthly reports. NAHLE’s certification process is now more popular, accessible, and relevant than ever.

If there is one message that I would ask you all to take to heart, it is the necessity of continuing education. NAHLE is a trade association that is recognized on both the regional and national levels for its training efforts on behalf of hotel engineers. We are continuing to expand electronically while improving our technology.

We launched a very successful Beta test of our new CCE system this past December and are now rolling-out our new program for all. NAHLE will continue to improve and enhance our online training programs. We welcome your input and continued support! ***



Patented Pending Silent Scream Maintenance Survival ©
No More slamming doors or sleepless mornings
<http://www.maintenancesurvival.com>

Designing Hospitality for Economics and Experience with Better Light

by John Casadonte, vertical marketing manager, lighting at Cree, Inc.

Today, high performance lighting goes well beyond energy and maintenance savings for bottom line benefits, with quality LED technology transforming the hospitality experience. LED lighting provides a superior light quality and higher color rendering index (CRI) compared to traditional light sources, resulting in a better visual environment. Since budgets are a top priority, hotel owners can see bottom line results when switching to high-performance, energy-efficient LED lighting and reallocate those funds to other property and guest needs.

Improving the customer experience

While some hotels have moved to fluorescent lighting for energy savings, today's leaders in customer experience know that better light matters in creating a comfortable environment. Delivering superior illumination, today's top lighting brands can create lasting first impressions that differentiate one hotel from another. This is especially apparent with main entrances, where guests can get the



“home away from home” feeling immediately, letting the hotel’s brand speak for itself.

Brand image is imperative for guest experience and loyalty, and companies spend a lot of time perfecting it. LED lighting helps showcase every aspect of the hotel’s brand, allowing the proper illumination needed and the room’s true colors to shine. For example, Cree, Inc. recently introduced the Cree® KR8™ LED downlight, its first eight-inch downlight addressing ceiling heights from eight feet up to 40 feet, featuring Cree TrueWhite® Technology for unmatched light uniformity and better color performance with a 90-plus CRI.



Courtyard by Marriott’s newly renovated modern lobby offers guests LED lighting among a variety of upscale amenities.

Better light equates to brighter environments and a whole host of other customer benefits – from increased comfort and satisfaction to better visibility for staff and enhanced display of a hotel’s curated décor.

Favorable Economics

Like any industry, hospitality environments have bottom line needs and technologies that support improved experiences and reduce the cost of ownership to help enable a competitive edge. And since hospitality environments often require 24/7/365 indoor and outdoor illumination, it’s no surprise that lighting represents nearly twenty-five percent of all electricity consumed in a typical hotel. That’s one reason that multiple Courtyard by Marriott® locations have installed Cree CR6™ LED downlights, reducing energy consumption by 80 percent, and with expected payback of less than two years. The Marriott’s latest LED lighting installation coincided with Courtyard’s newly renovated modern lobby, offering guests a variety of upscale amenities.

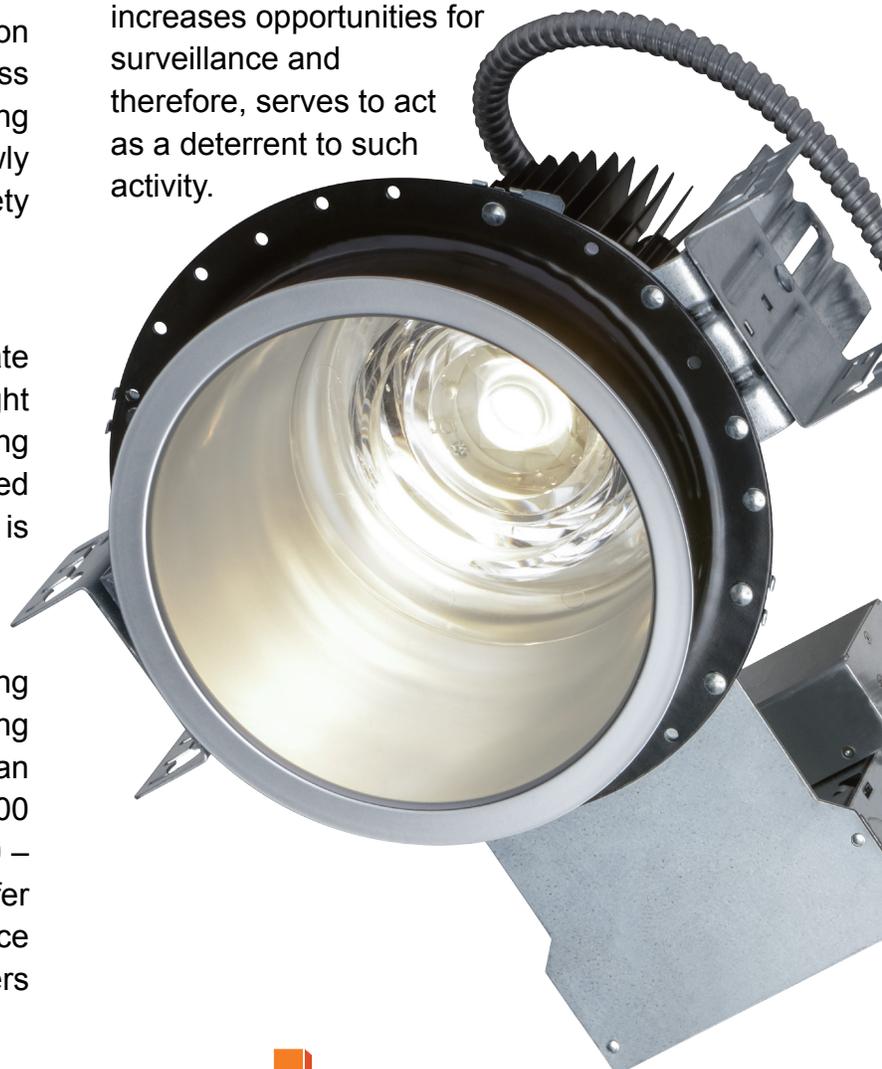
Intelligent light and controls can further accelerate energy savings through occupancy and daylight harvesting in multi-purpose areas, such as meeting rooms or guest workstations, enabling maximized savings during time periods where no activity is present, and the light slightly dims.

One of the most overlooked benefits of LED lighting is that the technology requires minimal ongoing maintenance and offers much longer lifetimes than conventional light sources. With more than 1,000 rooms on average for large properties and 3,000 – 5,000 fixtures and light bulbs, products that offer a long lifetime and warranty drastically reduce replacement hours and complaints from customers about burned out bulbs.

Improving property safety, inside and out

On the exterior, LED fixtures generate a clean white light that provides a higher sense of security and confidence when travelling around a property. While conventional light sources often develop “hot spots” under each lamp, causing shadowed areas in between fixtures, LED technology works to reduce such problems. Outdated lighting may also cause a glare, which obstructs vision in parking lots and roadways. With better illumination, LED lighting enables effective wayfinding for guests and employees, while promoting driver and pedestrian safety and security.

LED lighting can also improve the performance of other safety systems, such as video cameras, by enabling clearer images. Improved lighting facilitates the observance of suspicious activity, increases opportunities for surveillance and therefore, serves to act as a deterrent to such activity.



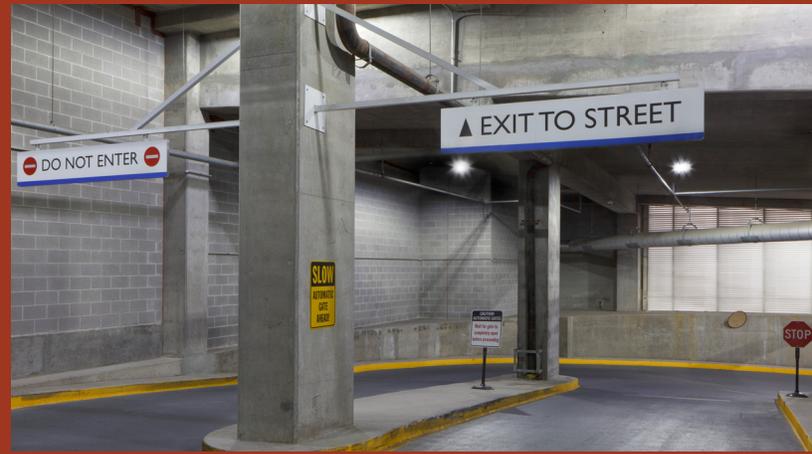
The W® Dallas Victory Hotel and Residences , for example, upgraded its parking structure with 162 Cree Edge™ parking structure luminaires. With improved light quality, residents and guests feel more secure, and the property anticipates significant benefits to the bottom line.

What to know when specifying lighting

LED lighting is fully capable of replacing all existing technology, including halogen and CFL – but it's important to remember that specifications matters in ensuring a better light experience.

Selecting products with consistent color temperatures and high color quality, thereby avoiding mismatched lighting throughout the hotel space, is important. Design teams should understand the space dynamics needed to better understand the products required to best showcase the hotel brand. Architects and designers often have great advice regarding particular products they have had success with in various designs and building dynamics. LED lighting companies often offer trial applications to enable end-users the opportunity to truly see and feel the difference compared to outdated technology.

Hotels are in the business of customer experience, and it is important to not overlook quality and performance of light in creating a favorable environment. Better light quality can translate into a better guest experience and employee satisfaction. High-quality, energy-efficient LED lighting delivers cost-effective and vibrant environments, while addressing bottom-line concerns, helping hotels invest in the future of their property and guest experiences. Why wait?



About the Author

John Casadonte is a vertical marketing manager at Cree, an industry leader in LED lighting for interior and exterior applications. He currently supports Cree's Education initiative to help sustainability efforts and achieve LEED qualification for the many institutions nationwide.

Cree®, Cree TrueWhite®, and TrueWhite® are registered trademarks, and Cree Edge™, CR6™, and KR8™ are trademarks of Cree, Inc. Courtyard by Marriott® is a registered trademark of Marriott International Inc. W® is a registered trademark of Starwood Hotels & Resorts Worldwide, Inc.

GUEST EXPERIENCE IS A WHOLE NEW CATEGORY

Innovate now with custom designed, installed & serviced outdoor lighting.



Imagine your property bathed in warm glows of highly energy efficient low voltage LED lighting.

Imagine creating new outdoor spaces – using light – for conferences, banquets and weddings.

Imagine welcoming curb appeal with the depth and stunning illumination effects unlike those you have ever seen.



Contact **JIM MORRIS** for a complimentary design consultation & capabilities presentation.

Office 804-353-6999 ext 244 • *Mobile* 317-468-8099

Email jmorris@outdoorlights.com • *Website* HospitalityOutdoorLighting.com

OUTDOORLIGHTING
P E R S P E C T I V E S ®

H O S P I T A L I T Y

Outdoor Lighting Perspectives® Hospitality is an important part of Outdoor Living Brands®



Five Pest Management Tips in Time for Spring Cleaning at Your Hotel

*By Patrick T. Copps, MS, B.C.E.
Technical Services Manager, Orkin, LLC*

Many hoteliers are ready to feel the warm, spring breeze, as it means guests are finally breaking their cabin fever and booking their spring break vacations. But hoteliers and guests are not the only ones who are excited – pests are too. Spring is known as a busy time for pests as they depart from their winter hiding spots in search for food and water.

The beginning of spring is a great opportunity to contact your pest management provider and work on strengthening your Integrated Pest Management (IPM) approach for your hotel. An IPM approach is the most effective and environmentally responsible method to pest control because it emphasizes a partnership between your pest management provider and your team, focusing your efforts on proactive sanitation and hotel maintenance, which can help reduce the use of chemical treatments.





ORKIN

®

PEST CONTROL DOWN TO A SCIENCE.®

BE SURE.

You can't afford to wonder whether your pest control is getting the job done. Why not call on 115 years of scientific expertise plus deep hospitality industry experience and know for sure? We'll visit your facility – on your schedule – to assess your current program for free, without obligation. Isn't your peace of mind worth it?

**Schedule your complimentary
pest control audit today.**

866.896.8850 | nahle.orkin.com

CUSTOMIZED 360° INSPECTION | INTERACTIVE MAP OF KEY FINDINGS | DETAILED PROGRAM RECOMMENDATIONS

To help prevent pest activity this spring, check out these five tips:

1.

Get your staff involved.

No matter the size of your hotel, you won't be able to complete a thorough spring cleaning without your staff. Remember that, along with your pest management provider, your staff can be a strong partner in your IPM program. To prepare, consider holding a training session with your pest management provider and train your staff to be as educated as you are on pest management and maintenance. During the training session, ask your pest management provider to help your employees understand how to monitor for signs and conditions that attract pests. This will help them learn how their daily responsibilities – from cleaning the lobby to turning a room – can play into preventing conducive conditions for pests. Additionally, many pest management providers will offer free resources, such as tip sheets and checklists for your staff to continue learning about pest management after the training session.

2.

Make guest rooms comfortable for hotel guests, not bed bugs.

A guest's comfort shouldn't be interrupted by pest evidence like the tiny, ink-blot stains on mattress seams or cast skins on furniture from bed bugs – or the bugs themselves. While guest rooms should be inspected for bed bugs each time a room is cleaned, spring cleaning is a perfect time to discuss any additional proactive measures your hotel should be taking with your pest management provider. Bed bugs are known for their great hitchhiking skills and can travel on guests' luggage and personal belongings; therefore, it's important to make sure housekeeping is inspecting each room for bed

bugs – and other pest activity – so that you'll be able to locate a potential infestation sooner rather than later.

“Even the smallest crumb can be a meal for pests.”



3.

Don't forget about pests in outdoor areas.

Spring pests like house flies, mosquitoes, ants and cockroaches can be easily attracted to your hotel's courtyards and patios. These outdoor areas create

an ideal environment for these pests, as they offer food, water and shelter. To help prevent these pests from making your outside area their home, ensure patios and courtyards are kept clean and tidy by sweeping up any debris or food waste left on the ground. Also, make sure to eliminate any standing water since it can create a breeding ground for mosquitoes.

4.

Keep the dining areas and kitchen spotless and ensure doors and windows are closed.

Keep your dining areas clean by immediately wiping



away any crumbs and clearing away meal leftovers – remember that even the smallest crumb can be a meal for pests. In the back of the house, ensure counters are cleaned regularly and that floors are washed down at least once daily with an organic cleaner. By cleaning spills and sanitizing surface areas, you can help prevent pests like cockroaches

and ants from feeding on grease and grime, which are sweet and sticky snacks in their eyes. Be sure to monitor and sanitize floor drains to prevent them from clogging due to the build-up of residues. And don't forget to close the door after deliveries or hauling out the trash. If a screen door is in place, now is a good time to ensure the screens are replaced if needed.

5.

Not even waste should be accessible to pests.

Waste management is a key factor when it comes to pest control since pests are attracted to leftover food from and the odors trash can emit. To restrict odors, cover all trash cans with tightly sealed lids, empty them at least daily and line them immediately after emptying them. Wash down trash cans regularly to help prevent any lingering food debris, and don't forget about the dumpsters. You should position dumpsters as far from the building as possible, and ensure all trash is inside the dumpster. Regularly sanitize the interior and exterior with an organic cleaner to eliminate grease and grime, and work with your waste management provider to empty and rotate the dumpsters on a set schedule. Remember to sanitize the area underneath the dumpster as well.

By incorporating these tips into your IPM program, you can help keep pests out of the picture this spring.

Patrick Copps is Technical Services Manager for Orkin's Pacific Division. A Board Certified Entomologist in urban and industrial entomology, Mr. Copps has more than 35 years of experience in the industry. For more information, email Mr. Copps at pcopps@orkin.com or visit www.orkincommercial.com.



PREVENTATIVE MAINTENANCE AND SAFETY CONSIDERATIONS TO ADDRESS IN YOUR FITNESS CENTER

*By Glenn Colarossi
of TRUE Fitness Technology, Inc.*

One priority for many guests booking a hotel is the quality of amenities offered by the facility. While hotel design standards and amenities may differ from brand to brand, most modern facilities feature a fitness center with a variety of equipment for guests to take advantage of. Along with various pieces of strength training equipment, hotel fitness centers most commonly provide guests with treadmills, ellipticals, and stationary bikes. Maintaining these cardio machines is important for the hotel's bottom line and general preventative care by hotel engineers can help extend the life of the equipment.

Preventative maintenance is crucial to sustaining the function and safety of fitness equipment. A hospitality facility should establish written guidelines for preventative maintenance, if not provided by the equipment manufacturer, and keep records of the maintenance performed on all the products in its fitness center. Documentation of maintenance tasks will allow for hotel engineers to properly and safely assess all equipment and keep guests and staff safe.

Preventative maintenance should be addressed daily, weekly, monthly or bi-annually depending on the type of equipment. Hotel engineers should inspect each product piece-by-piece. To avoid a negative experience for hotel guests, a good rule of thumb for the best time of day to perform these tasks is between the hotel's check-out and check-in

times. Here are specific tips for how to maintain the three most common pieces of equipment:

1. TREADMILLS

On a daily basis, hotel engineers should check for worn, frayed, or missing safety lanyards on treadmill equipment. Maintenance workers should replace missing or worn safety lanyards immediately and look and listen for slipping belts, loose fasteners, unusual noises, worn or frayed power cords and any other indications that the equipment may be in need of service.

It is also important to check weekly for proper running belt alignment and tension. Proper belt alignment allows the belt to remain centered and ensures smooth operation. If there is a slipping or



jerking sensation when running on the treadmill, the running belt may require tightening. In most cases of equipment malfunction, the belt has stretched from use. Realignment or tightening the belt typically takes a few simple adjustments. Detailed instructions can be found in the equipment manual, as these steps differ by brand.

feet typically found at each corner of the front and rear stabilizing bars. Quarterly, it is important to properly lubricate a bike's pedals to prevent corrosion. To do so, hotel engineers can remove the pedals from the crank and lubricate the threads that attach the pedals to the cranks.

Guests would rather know that a piece of equipment is “closed for scheduled maintenance” than “out of order.”

Properly leveling cardio equipment is a precautionary step to ensure a guest's safety. Most fitness equipment is furnished with adjustable leveling feet. If equipment is placed on an uneven surface, adjusting the feet can help, but may not completely compensate for extremely uneven surfaces. On treadmills, the leveling feet can be found in the rear section.

On average, bike inspections should take roughly three minutes.

Treadmills have the most moving parts out of the three most common hotel gym products and typically require the most detail-oriented and time-consuming maintenance due to the repetitive forces from users. It is advisable to rotate treadmills quarterly so that the one in the favorite location does not get all the use.



On average, treadmill inspections should take hotel engineers two to five minutes to complete.

2. BIKES

Stationary bikes require less preventative maintenance. However, like an elliptical, hotel engineers should look and listen for loose fasteners, unusual noises, worn or frayed power cords and any other indications that a bike may be in need of service. To ensure a bike is level, adjust the leveling



3. ELLIPTICALS

Similar to a treadmill's daily inspections, hotel engineers should look and listen for loose fasteners, unusual noises, worn or frayed power cords, and any other indications that an elliptical may be in need of service.

The most common complaint about an elliptical is its noise. Users may hear a knocking, vibration or ticking, but these are not considered non-usable issues. To correct these nuances, hotel engineers can clear the track of debris, tighten the machine's bolts or adjust the feet to ensure the machine is level. Ellipticals normally have leveling feet at each corner of the unit.

On average, elliptical inspections should take two to three minutes.

If any equipment is not passing inspections by the hotel engineer, it is important to seek service by the manufacturer immediately. To replace a damaged part or purchase a new part, it is best to contact the equipment manufacturer because they test every part before sending it to the end-user.

Do not allow guests to use the product until proper service has been performed and damaged parts have been replaced. To prevent a product from being used, turn the unit off and unplug the power cord from its power source. Hang a sign to let users know that the equipment needs service. Guests would rather know that a piece of equipment is "closed for scheduled maintenance" than "out of order."

A facility's housekeeping department should supply the fitness center with antibacterial wipes so that after each use, guests can use the wipes to clean all exposed surfaces. Use a LCD/screen cleaner to dampen a soft cloth and wipe the surface of the console. This helps remove fingerprints, dust, and dirt.



Although this procedure is recommended to be completed by guests, hotel engineers or housekeeping personnel should thoroughly wipe down all equipment daily to ensure proper cleaning. This includes painted parts, chrome plated parts, plastic parts, and upholstered pads. It is important not to leave parts damp as this will increase the potential for corrosion to occur.

For heavy duty cleaning to guide rods, chromed adjustment tubes, and linear bearings, hotel engineers should use a Teflon spray lubricant. To remove scuff marks, grease, or dirt buildup from painted frame components, start with a mild soap solution or car polish for the hard-to-remove marks. To clean upholstery, use a mild soap solution instead of a chemical cleaner. It is imperative that acidic cleaners not be used for any cleaning procedure on fitness equipment. Doing so will weaken the paint or powder coatings on the equipment, shorten the life cycle of the product, and may void the manufacturer warranty. Never pour or spray liquids on any part of the equipment, and guests should be reminded to allow the equipment to dry completely before use.

Hotel engineers should train the housekeeping staff to vacuum any dust or dirt that might have accumulated under or around each piece of fitness equipment, including the motor cover vents, straddle covers, pedal tubes, and rolling wheels. Clogged air vents can prevent adequate cooling to the motor control board causing a shortened life.

In addition to preventative maintenance by hotel engineers, most fitness equipment manufacturers recommend quarterly or bi-annual scheduled maintenance performed by a qualified service technician to ensure an optimal life span for each piece of equipment.



Preventing and maintaining fitness equipment can be vital to a hotel's operation and overall guest satisfaction. Utilizing hotel engineers as fitness center inspectors allows hotel owners to invest in a long-term relationship and will minimize risks for guests and the facility.

ABOUT TRUE FITNESS TECHNOLOGY, INC.

TRUE Fitness Technology, Inc. is a global leader in premium fitness equipment for the commercial and home markets. Adhering to best practices in technology, innovation, design, performance, safety, and style, TRUE has received multiple awards for its commercial and retail products over the years and remains a benchmark for the industry. Fitness facilities and consumers invest in TRUE for their durable cardio, flexibility and strength systems in commercial and residential workout environments worldwide. Founded in 1981, TRUE Fitness is based in O'Fallon, Missouri. Find out more at www.truefitness.com.

ABOUT THE AUTHORS:

Glenn Colarossi is the Director of Global Hospitality for TRUE Fitness Technology, Inc.

Kevin Novak is the Director of Warranty, Technical Service, and Customer Advocate for TRUE Fitness Technology, Inc.

LOCK DOWN YOUR HOTEL

KEEP SAFETY IN AND UNAUTHORIZED PERSONNEL OUT

By Manny Mercado, CDOE



Hi everyone! Today I write about the importance of locking down your hotel. My role as Chairman of the Safety Committee is to ensure the safety and welfare of our hotel guests and staff by direct focus on day-to-day activities. Each and every day when I walk the property I gather notes to address with our safety committee. One key point I recently made at our committee meeting was “lock down of the building.”

that is locked at all times and requires a key to access. Now when a member of the staff enters a room for supplies and leaves the door closed, there is no need to remember to lock the door, because it is already locked. This change reassures me that the storage rooms are locked and secured and doing their intended job of keeping unauthorized personnel out. During my discussion with the safety committee, I spoke about a mentally ill person that was on the property in the men’s room a few weekends before being loud and disorderly. Police were called to assist and to make sure the person was fine. During conversation with the police, the person got out of control and was removed from the property. This situation proves that in the hotel industry we have all walks of life entering our property, some with good intentions and some with bad. Securing your building and areas surrounding it helps to minimize access. If this mentally ill person walked around the property and found an open door, we would be pointing fingers and wondering how did this happen to us? So today instead of wondering, take a walk around your property, gather notes, and share the safety concerns. Address them and find

“In the hotel industry we have all walks of life entering our property, some with good intentions and some with bad.”

We address the security issue to make sure all storage rooms and meeting spaces are locked at all times when not in use. As you know, sometimes you have staff that really follow the rules and others that take short cuts because they feel that rules are not important or meant for them. So I took the matter into my own hands and made some changes to the building. I went around to each and every storage room and changed out the mortise into a mortise

solutions sooner rather than later. Do not just stay in the circle of everyday routines, which too often includes showing up to work, eating lunch, and going home at end of day. Your everyday routine should include a property walk, taking notes, and immediately addressing security exposure concerns. Remember a locked down building is a secured building that provides a safe and healthy place for all guests and staff. ...



Asset Management Begins at the Property

The National Association of Hotel & Lodging Engineers (NAHLE) partners with the American Hotel & Lodging Educational Institute (AHLEI) to provide two self-paced online professional development and training programs for hotel engineers and maintenance professionals.

- **Certified Director of Engineering**
Full Service Properties
- **Certified Chief Engineer**
Select Service Properties

Our programs are exclusively hotel centric. By focusing on the principles of management, building engineering systems, the building and its grounds, we've created a curriculum that is easily transferable across different hotel brands and property types. From the heart-of-the-house to the property's perimeter access, our certification programs are designed to create a uniform environment of informed decision making. Our management reports track the progress of multiple candidates and our most popular program, the Certified Chief Engineer, has online software allowing select service employees to track their hours of study while on the job.

Contact us today:

703.922.7105 or Certification@nahle.org

www.nahle.org.

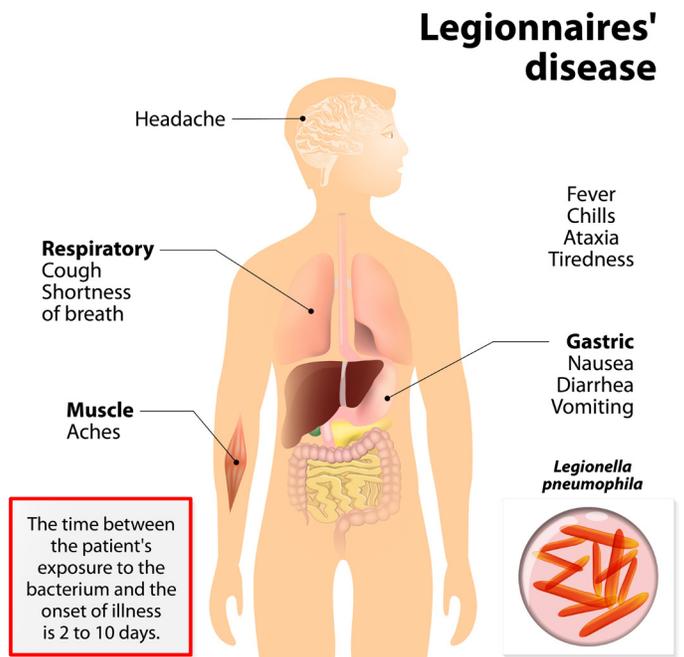
PROCESS COOLING AND LEGIONNAIRES' DISEASE: RISKS AND REMEDIATION

By Hunter Ronson NIMBUS Advanced Process Cooling

Legionnaires' disease is a respiratory illness with mortality rates approaching 30%. It was first recognized (and named) during an outbreak at a 1976 American Legion convention in Philadelphia PA which resulted in 221 victims and 34 deaths. The disease was traced to a previously unknown bacteria, Legionella pneumophila, now known to thrive in water at temperatures of 68° to 122° F. Primary transmission vectors for outbreaks are water supplies associated with process cooling systems, cooling towers, humidifiers, evaporative coolers, and even whirlpools and spas. Health and safety protocols call for rigorous schedules of water treatment and decontamination, or replacement of at-risk units with fresh water, no-reservoir systems, such as the adiabatic cooling towers widely utilized throughout Europe.

In August 1976, the U.S. Centers for Disease Control conducted their largest, most urgent epidemiological response to date. Dozens of physicians and infectious disease specialists scrambled to Philadelphia, Pennsylvania, the site of a recent American Legion convention, and to sites across the country to where Legionnaire attendees had returned home. A startling number of them were now sick from a previously unknown respiratory illness, and a frighteningly large proportion of the sick were dying.

The outbreak made headlines, but the epidemiologists were able to allay panic with a simple observation that became clear almost at once: family members and caretakers of the Legionnaires weren't falling ill. The disease, whatever it was, wasn't transmitted from person to person. Focus shifted to environmental causes, and in particular to the Bellevue-Stratford Hotel which had hosted the convention. It would be a further six months before a new bacterium, Legionella pneumophila, was identified; and it would be years before the transmission mechanism was fully understood. What we now know about L. pneumophila bacteria and the spread of Legionnaires' disease is of top-



tier concern for facilities managers and operators of process cooling systems worldwide.

The bacterium that causes Legionnaires' disease can live in soil, but it thrives in water—particularly in tepid, stagnant water of 68° to 122° F (in theory, this makes any standing body or water reservoir a possible source of contamination, and indeed the Legionella bacteria has been found in spas, whirl-

pools, even decorative fountains). In practice, one of the most common breeding grounds, one most rife for spread of the disease and a common source of deadly outbreaks, are cooling towers and building HVAC systems.

Lacking the necessary decontamination protocols; systems such as central air conditioning, evaporative cooling towers, and industrial humidifiers can be seen as the perfect vectors for the incubation and spread of Legionnaires' disease. The systems' closed water reservoirs form ideal breeding media for the bacteria, with the outlets and interior building vents releasing mist, vapor, and aerosolized droplets of the infected water. Once inhaled, the bacteria settle within lung tissue and begin reproducing. Within as little as two days, the victim begins exhibiting symptoms of pneumonia or severe influenza—fever, chills, respiratory distress. The disease responds to antibiotics if treated promptly. If treatment is delayed, especially among populations normally at risk from severe respiratory disease; such as the very young and the very old,

cooling towers, which utilize a fine mist spray of water during cooling cycles, and is drained and refreshed with each use.

Given these solutions our understanding of the risks and remediation of Legionella bacteria, one would expect the disease to be on the decline. Unfortunately, recent history does not support this:

1 Bronx, New York; July - September 2015: separate outbreaks in three neighborhoods result in at least 140 cases of Legionnaires' disease, and 13 deaths.

2 Porto, Portugal; September 2015: 16 cases of Legionnaires' disease, 15 hospitalizations.

3 Quebec, Canada; August 2015: 18 cases of Legionnaires' disease, two deaths.

4 San Quentin State Prison, California; August 2015: at least 101 cases of Legionnaires' disease.

5 Quincy, Illinois; August 2015: an outbreak at a veterans' nursing facility results in 54 cases of Legionnaires' disease, and 12 deaths.

“What we now know about the spread of Legionnaires' disease is of top-tier concern for facilities managers and operators of process cooling systems worldwide.”

mortality rates can approach 30 percent.

Remediation from a process-cooling point of view is straightforward, and is centered upon following the cooling tower/HVAC equipment manufacturer's guidelines for water treatment and decontamination. Precise guidelines vary, but should all include routine inspection and bacterial analysis, water treatment with biocides and rust inhibitors, and complete drainage, cleaning, and refilling of the system at least twice per year. Another solution; as has been mandated across Europe specifically to address the risk of Legionnaires' disease, is to replace traditional evaporative cooling towers with no-reservoir systems, such as hybrid adiabatic

Outbreaks of Legionnaires' disease since the year 2000 have sickened at least 2,100 people, and have killed at least 98. In the vast majority of these outbreaks; water sources, cooling towers, and air-conditioning systems were eventually identified as the infection sources.

Reducing infectious risk for guests, visitors, employees, and associates must be of the highest priority to hotel and business owners, facilities managers, and process-cooling engineers. Following minimum bacteriological remediation protocols can be seen as both an investment in routine property maintenance and as a matter of life and death.

The following are the author's suggested general guidelines only—please be sure to follow manufacturers' recommendations.

- Thoroughly inspect cooling system components at least once per month.
- Perform monthly bacteriological analyses, checking for system contamination.
- Drain and clean cooling reservoirs at least twice per year (every three months if cooling is used year round).

“Building systems such as cooling towers, humidifiers, evaporative coolers, whirlpools and spas, and HVAC systems form ideal breeding media for Legionella bacteria.”

- Treat circulating water with biocides and rust inhibitors as per manufacturer's specifications. Use continuous-feed systems where possible.
- Consider replacing traditional cooling towers with no-reservoir, hybrid adiabatic systems.



As a result of the summer 2015 outbreaks in New York, a citywide effort is underway to disinfect cooling systems and to establish more stringent guidelines for the detection and prevention of Legionnaires' disease. This, along with widespread renewed

attention to the disease and its causes, are relatively positive outcomes to be contrasted with the illness, suffering, and loss that was borne by those directly affected by the outbreak.

A much better outcome, of course, would be to mitigate the risk and stop the disease before a single person is infected. This is by no means impossible or even inordinately challenging. We know how the *L. pneumophila* bacterium propagates and is spread, and we know how to eliminate it. We

know that care and maintenance of water supplies and cooling systems are the front-line tactics in this public-health battle.

For nearly 40 years Legionnaires' disease has been a pernicious cause of severe illness and unnecessary death. It need not be so any longer. This scourge can be eliminated in our lifetimes. It will be the diligent intervention of engaged, informed facilities managers and process-cooling engineers that will help make that possible.

Editor's Note: the American Society of Heating Refrigeration & Air-Conditioning Engineers (ASHRAE) promulgates ASHRAE 188; Standard Project Committee 188 Legionellosis: Risk Management of Building Water Systems. <http://spc188.ashraeeps.org/>. More information can be found at the: U.S. Dept. of Labor: <https://www.osha.gov/SLTC/legionnairesdisease/>. There are currently no specific OSHA standards for Legionnaires' disease.

FlexCart™

Engineering Cart

LIMITED
TIME
SPECIAL
PRICING!

The Professional Engineer's Productivity Machine!

The FlexCart Engineering Cart is the result of a two year partnership with major hotel companies to develop the most functional and efficient engineering maintenance cart possible. Now in service with thousands of engineers across North America, FlexCart, through its Six Sigma design, has proven to deliver valuable benefits including:

- **The ability to get more done!**
- **Increased professionalism in front of the guest.**
- **And, accountability for your tools and parts.**



*Please visit www.flexcartllc.com for more information.
For a quote or to place an order, call 614-348-2517.*

Kitchen Preventive Maintenance

By Todd Isbell



In the hospitality industry, we as hotel engineers must take good care of our kitchen equipment. We never want a health inspector to come in and have to shut us down for reasons we can and should have controlled. We should always take the time at least twice a day to record cooler and freezer temperature readings not only from the walk-in units but the reach-in units too. Daily logs keep us informed if something could be wrong with the units. The logs keep track of varying temperatures, the activity surrounding the unit, and especially when and how often the freezer units go into defrost mode. 'When the freezer goes into defrost mode' should also be printed on the log sheets for all to see. I have gotten many calls throughout my tenure about freezer units being too warm. Then I go and

find they are just in defrost. A good thing to do is set the defrost timers when no one is around; such as 11pm and again at 5am. You can also set them in the middle of the day if there is a break in kitchen activity. Also you should communicate to all kitchen personnel these times so they understand and know when the freezer defrosts. The daily logs should be attached to each individual unit, clearly marked as to what unit it belongs to. At the end of the month, put the logs in a file for the health

inspector to see should there be any discrepancy between their readings and yours.

All coolers and freezers have condenser and evaporator coils that need to be cleaned at least monthly. Failure to do this can cause compressor head pressures to rise resulting in internal overload and shut down of the units. It can also cause fan failure or even failure of the compressor unit. This can be very costly not only to repair the unit, but to pay for food loss as well. Check door gaskets at least once a week to ensure proper sealing to stop

“Everything in the kitchen should be looked at weekly from ceiling tiles to floor tiles and everything in between.”



cold air from escaping. You can set up reminders in your Outlook calendars to do certain preventive maintenance schedules as not all of this needs to be, nor can be done, in one day. Some properties have a system of preventive maintenance work orders that print out or remind them when certain actions are due.

Fryers, griddles, and flat tops are also in need of maintenance. Everything in the kitchen should be looked at weekly from ceiling tiles to floor tiles and everything in between. I walk through my kitchens at least 3 times a day just looking around for any discrepancies that may cause an issue. Some things I see do not necessarily have to be done immediately, but I take notes and ensure they get done in a timely manner before they become a problem. If possible, always enter and exit your kitchens from different doors each day to avoid tunnel vision. Tunnel vision is when you get so used to walking the same route every day, you miss things you would have otherwise seen if you were not as accustomed to going that way. Do you always see the same highway signs every day? Yes of course you see them, but do you “notice” them? Most of us probably don’t.

When performing your preventive maintenance tasks, also be

aware of hinges, burner knobs, door gaskets etc. Ensure flames are blue and not yellow and that there is no smoke production to ensure proper combustion. Check your hood exhaust fans to make sure that they are clean

and in good working order. Frayed electrical wires are another form of possible failures especially on reach-in food warmers. I will not go into how often people forget to unplug them before moving, and in turn pull the wires either



Circuit Solver Outweighs Manual Balancing

Circuit Solver is a self-actuating thermostatic balancing valve that automatically and continuously maintains a set water temperature at the end of each domestic hot water supply, without balancing or re-balancing.

It solves the problem of delayed hot water delivery, while eliminating costly manual balancing procedures. Upon installation, you can expect the immediate delivery of the right water temperature — never having to balance or re-balance.

Circuit Solver allows only the water that cools below the set point to flow to the return, saving you money in materials, electricity, water usage, and overall lifetime operation.

To learn more, visit www.CircuitSolver.com/balance.

 **CircuitSolver**[®] (877) 379-8258 | www.CircuitSolver.com
A ThermOmegaTech[®] product

ThermOmegaTech: THE WORLD LEADER IN SELF-ACTUATED TEMPERATURE CONTROL SOLUTIONS

out of the plug or completely out of the unit itself. Running over the wires with wheels is also a cause of issues. Bare and exposed wires can ruin a person's day or worse. Listening is also a natural and an effective way to detect issues. Are your motors running smoothly or do they have a noticeable sound?

Check your garbage disposal for noises such as utensils or glass grinding. Ensure the grate is in place to prevent this from happening. Dishwashers should be checked for water leaks, scale buildup,

temperatures, etc. Check your water for wash and rinse cycles to make sure they are at regulated temperatures. In convection ovens, listen to the blower wheels, which should run quietly. Look at the doors and seals, ensure they are working and aligned correctly.

All of these practices are to ensure proper operation of your equipment. Again, not all of these can or are meant to be completed in a day, but if you plan your work and work your plan, it will become second nature to you. ***

IT'S TIME TO JOIN

The National Association of Hotel & Lodging Engineers



Lets build our future together.

By joining NAHLE we both become stronger. Your support makes us stronger and in return NAHLE will help you by providing hotel engineering information and support your career advancement with NAHLE's Certified Chief Engineer (CCE) for select service and Certified Director of Engineering (CDOE) for full service properties. Together, we will build our futures. Membership Fee is \$99 a year.

Your Member Benefits include:

- Weekly Newsletter with news that affects you and your property.
- Lodging Engineer Magazine, loaded with interviews and in-depth articles.
- Access to our new Website, www.nahle.org
- Resource and Video Library, Job Bank & Warranty Program.
- Plus a \$100 discount towards your CCE or CDOE Certification.

Visit [NAHLE Membership](#) and join today!

Can You Pay Le\$\$ Tax This Year?

By Jit Tandon, EA



The current IRS tax code has dozens of legally available deductions built for the average taxpayer who itemizes their taxes. These deductions can add up to savings of thousands of dollars in tax payments. However, there is a catch.... The IRS does not automatically take those deductions for you -- or apply them to your tax return if you forget to claim them. You have to know what deductions are available to you, the latest updates and changes to the tax codes, and perhaps most important, how to apply them to your particular situation.

Most people, including hotel maintenance and engineering professionals, claim the standard deduction when they file their federal tax return, but **you may be able to lower your tax bill if you itemize your deductions** on your return. So how do you know whether to use the Standard Deduction or itemize your deductions? First, you must decide whether the total amount of your itemized deductions is greater or less than the IRS' Standard Deduction. If your itemized deductions are greater than your standard deduction then you could probably benefit by filing an itemized return.

1. Know Your Standard Deduction.

If you don't itemize, your basic standard deduction for 2015 depends on your filing status:

- Single \$6,300
- Married Filing Jointly \$12,600
- Head of Household \$9,250
- Qualifying Widow(er) \$12,600
- Married Filing Separately \$6,300
- If you're 65 or older or blind, your standard deduction is higher than these amounts.
- If someone can claim you as a dependent, your deduction may be limited.

“You may be able to lower your tax bill if you itemize your deductions.”

2. Figure Your Itemized Deductions:

Add up deductible expenses you paid during the year. These may include expenses such as:

- Medical Expenses
- State and local income taxes or sales taxes (but not both)
- Home mortgage interest
- Real estate and personal property taxes
- Gifts to charities
- Casualty or theft losses
- Unreimbursed employee business expenses (such as dues, educational seminars or CCE/CDOE training by NAHLE)

If your total of itemized deductions is expected to be more than the IRS standard deduction, you may want to itemize. The following provides a general overview of itemized deduction you may be able to take on Schedule A of your 2015 Federal tax return.

Medical & Dental Expenses:

You generally can deduct only the part of your medical and dental expenses that exceed 10% of the amount

on Form 1040, line 38. However, if either you or your spouse was born before January 2, 1951, you can deduct the part of your medical and dental expenses that exceeds 7.5% of the amount on Form 1040, line 38. Deductible medical expenses include:

- Insurance premiums for medical and dental care, including premiums for qualified long-term care insurance contracts (subject to aged based limitation).
- Prescription medicines or insulin.
- Doctors' bills including- Acupuncturists, chiropractors, dentists, eye doctors, medical doctors, occupational therapists, osteopathic doctors, physical therapists, podiatrists, psychiatrists, psychoanalysts (medical care only), and psychologists.
- Medical examinations
- Medical Services: X-ray and laboratory services, insulin treatment, and whirlpool baths your doctor ordered.
- Nursing help (including your share of the employment taxes paid). If you paid someone to do both nursing and housework, you can deduct only the cost of the nursing help.
- Hospital care (including meals and lodging), clinic costs, and lab fees.
- Qualified long-term care services
- The supplemental part of Medicare insurance (Medicare B).
- The premiums you pay for Medicare Part D insurance.
- A program to stop smoking and for prescription medicines to alleviate nicotine withdrawal.
- A weight-loss program as treatment for a specific disease (including obesity) diagnosed by a doctor.
- Medical treatment at a center for drug or alcohol addiction.
- Medical aids such as eyeglasses, contact lenses, hearing aids, braces, crutches, wheelchairs, and guide dogs, including the cost of maintaining them.
- Surgery to improve defective vision, such as laser eye surgery or radial keratotomy.
- Lodging expenses (but not meals) while away from home to receive medical care in a hospital or a medical care facility related to a hospital, provided there was no significant element of personal pleasure, recreation, or vacation in the travel. Do not deduct more than \$50 a night for each eligible person.
- Ambulance service and other travel costs to get medical care. If you used your own car, you can claim what you spent for gas and oil to go to and from the place you received the care; or you can claim 23 cents per mile. Add parking and tolls to the amount you claim under either method.
- Cost of breast pumps and supplies that assist lactation.
- Diagnostic tests, such as a full-body scan, pregnancy test, or blood sugar test kit.

HOTEL ENGINEERING

For Full Service Properties

*Certified Director of Engineering
Desk Reference and Study Guide*

Robert F. Elliott

But be careful. You CANNOT deduct the following Medical expenses:

- The cost of diet food.
- Cosmetic surgery unless it was necessary to improve a deformity related to a congenital abnormality, an injury from an accident or trauma, or a disfiguring disease.
- Funeral, burial, or cremation cost
- Life insurance or income protection policies.
- The Medicare tax on your wages and tips
- Nursing care for a healthy baby. But you may be able to take a credit for the amount you paid.
- Illegal operations or drugs.
- Imported drugs not approved by the U.S. Food and Drug Administration (FDA).
- Nonprescription medicines, other than insulin (including nicotine gum and certain nicotine patches).
- Travel your doctor told you to take for rest or a change.

You may be able to claim dues for NAHLE or CCE/CDOE training on your Schedule A of your 2015 Federal tax return.

Taxes You Paid:

Generally you can deduct taxes you paid to state and local governments: Deductible taxes include:

- Your local and state income taxes - the state and local income taxes withheld from your salary during 2015.
- State and local income taxes paid in 2015 for a prior year, such as taxes paid with your 2014 state or local in-come tax return. Do not include penalties or interest.
- State and local estimated tax payments made during 2015, including any part of a prior year refund that you chose to have credited to your 2015 state or local income taxes.
- Mandatory contributions to the Alaska, California, New Jersey, or Pennsylvania state unemployment fund.
- Mandatory contributions you made to the various Disability funds such as-. Non-occupational Disability Benefit Fund (California, New Jersey, or New York), Temporary Disability Benefit Fund (Rhode Island), and/ or Supplemental Workmen's Compensation Fund. (Washington State)
- Mandatory contributions to state family leave programs, such as the New Jersey Family Leave Insurance (FLI) program and the California Paid Family Leave program.
- Personal Property Taxes: State and local personal property taxes you paid.
- State and Local General Sales Taxes –Rather than deducting state and local income taxes, you may choose to deduct state or local taxes. Generally, you can deduct the actual state and local general sales taxes you paid in 2015. Alternately, you can also use Optional Sales Tax Tables. Deduction Calculator on the IRS website at www.irs.gov/Individuals/Sales-Tax-Deduction-Calculator is also available for you to calculate your Sales Tax.
- Real Estate Taxes- Include taxes (state, local, or foreign) you paid on real estate you own that was not used for business.

Home Mortgage Interest:

A home mortgage is any loan that is secured by your main home or second home. It includes first and second mortgages, home equity loans, and refinanced mortgages. A home can be a house, condominium, cooperative, mobile home, boat, or similar property. It must provide basic living accommodations including sleeping space, toilet, and cooking facilities. However, if you took out any mortgages after October 13, 1987, your deduction may be limited. (See IRS Pub. <https://www.irs.gov/pub/irs-pdf/p936.pdf> for details).

Mortgage Insurance Premiums:

You can deduct the qualified mortgage insurance premiums you paid under a mortgage insurance contract issued after December 31, 2006, in connection with home acquisition debt that was secured by your first or second home.

Investment Interest:

Investment interest is interest paid on money you borrowed that is allocable to property held for investment. It does not include any interest allocable to passive activities or to securities that generate tax-exempt income.

Gifts to Charity:

You can deduct contributions or gifts you gave to organizations that are religious, charitable, educational, scientific, or literary in purpose.

In addition your Churches, mosques, synagogues, temples, etc, qualified charitable organizations include-

- Boy Scouts, Boys and Girls Clubs of America, CARE, Girl Scouts, Goodwill Industries, Red Cross, Salvation Army, United Way, Veterans' and certain cultural groups.
- Most nonprofit educational organizations, such as colleges, but only if your contribution isn't a substitute for tuition or other enrollment fees.
- Nonprofit hospitals, and organizations whose purpose is to find a cure for, or help people
- Federal, state, and local governments if the gifts are solely for public purposes.

Your contributions could be in cash, property, or out-of-pocket expenses you paid to do volunteer work.

Cash Contributions:

You can deduct cash gifts/donations to qualified organizations. However, for gift of \$250 or more, a statement from the charitable organization showing details of the contribution is needed. If you made a gift and received a benefit in return, such as food, entertainment, or merchandise, you need to reduce gift deduction by the value of the benefit received.

Travel Expenses for Volunteer Work:

If you drove to and from volunteer work, you can take the actual cost of gas and oil or 14 cents a mile. Add parking and tolls to the amount you claim under either method. But don't deduct any amounts that were repaid to you.

Gifts Other Than Cash:

If you gave used items, such as clothing or furniture, deduct their fair market value at the time you gave them. If the amount of your deduction is more than \$500, you must complete and attach Form 8283.

If you deduct more than \$500 for a contribution of a motor vehicle, boat, or airplane, you must also attach a statement from the charitable organization to your paper return. The organization may use Form 1098-C to provide the required information. If your total deduction is over \$5,000 (\$500 for certain contributions of clothing and household items (discussed next)), you may also have to get appraisals of the values of the donated property.

If you gave property, you should keep a receipt or written statement from the organization you gave the property to, or a reliable written record, that shows the organization's name and address, the date and location of the gift, and a description of the property. For each gift of property, you should also keep reliable written records.

“You can deduct the cost of a computer if you bought it exclusively to take NAHLE’s CCE or CDOE training.”

Job Expenses:

You can deduct any job related expenses not reimbursed by your employer. Examples of such expenses are:

- Any travel, transportation, meal, or entertainment expenses for your job.
- If you use personal vehicle to travel to main place of work to job sites, you can deduct 57.5 cents per mile of work related travel. This includes miles if you drive to a hardware store to get parts, or to job sites to make repairs.
- Safety equipment, small tools, and supplies needed for your job.
- Uniforms required by your employer that aren't suitable for ordinary wear.
- Protective clothing required in your work, such as hard hats, safety shoes, and glasses.
- Physical examinations required by your employer.
- Dues to professional organizations and chambers of commerce.
- Subscriptions to professional journals.
- Fees to employment agencies and other costs to look for a new job in your present occupation, even if you don't get a new job.
- Job related educational expenses - You may be able to deduct work-related education expenses (including tuition, books, supplies, lab fees, and similar items, transportation and travel costs) paid during the year. This includes expenses for NAHLE's CCE training, cost of purchasing and maintaining your uniforms or work clothing, special boots, tools.
- Cost of computer if you bought it exclusively to take NAHLE's CCE or CDOE training or to take online courses.

For details see (<https://www.irs.gov/taxtopics/tc513.html>)

Business Use of Your Home:

If you use part of your home for business, you may be able to deduct home office related expenses. For details, including limits that apply (details see <https://www.irs.gov/taxtopics/tc509.html>)

Miscellaneous Deductions:

You may be able to deduct your expenses related to produce or collect taxable income and manage or protect property held for earning income. Examples are:

- Related legal and accounting fees.
- Custodial (for example, trust account) fees.
- Clerical help and office rent.
- Your share of the investment expenses of a regulated investment company.
- Convenience fee charged by the card processor for paying your income tax (including estimated tax payments) by credit/debit card.

Other Miscellaneous Deductions:

You may be able to deduct following expenses as other expenses (For more details, see <https://www.irs.gov/pub/irs-pdf/p529.pdf>)

- Gambling losses but only to the extent of gambling winnings reported on Form 1040, line 21.
- Loss from other activities from Schedule K-1 (Form 1065-B), box 2.
- Federal estate tax on income in respect of a decedent.
- A deduction for amortizable bond premium
- Impairment-related work expenses of a disabled person.

Please note that this is a general overview. Tax laws are cumbersome, complicated and constantly changing. Furthermore each taxpayer is different and some of the deductions may not be available to you depending on your unique situation. I urge you to be proactive and take advantage of all the deductions legally available to you.

About the Author:

Jit.tandon@verizon.net

Author is an Income tax consultant and professional with more than 30 years of tax preparation and tax consulting experience. He also is a principal of Tandon & Associates, LLC, a tax preparation company in Northern Virginia. He is licensed Enrolled Agent with Internal Revenue Service (IRS) and has unlimited rights to represent taxpayers before the IRS. Mr. Tandon is also a Wealth Manager with Ficadenti Tandon Asset Management, Inc, (www.FTAMinc.com) a Register Investment Advisory firm located in Mclean, VA.

© 2016 Tandon & Associate, LLC, All rights reserved. No part of this article may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law. For permission requests, write Jit Tandon, Tandon & Associates, LLC, P O Box 5026, Springfield, VA 22153