

ISSUE

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Lodging Engineer

1st Person



Ryan Napier
Corporate Director
of Facilities, Crestline
Hotels & Resorts

How to Get Ahead of the Zika-Virus-Carrying Mosquito This Summer

HVAC Summer Preventive Maintenance

Guest Room Modifications To Resist Bed Bug Infestation

Recycling Thermostats Protects Us All

Cloud-Based Maintenance Systems May Be The Next Game Changer

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AS I SEE IT

Robert Elliott, President, NAHLE



I have been very busy these past few weeks assisting my daughter in a move to Greeneville, Tennessee, to participate in a one year cooperative experience at the John Deere plant (which builds noncommercial zero-turn lawnmowers). I have served as moving company, cleaning crew, driver, caterer, maintenance crew, and confidante.

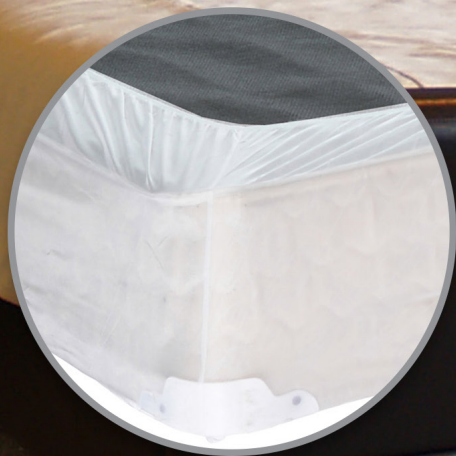
While in Tennessee, I had the opportunity to reflect on the importance of work-cooperatives and internships. Cooperatives and internships have become a strategic channel for developing specialized training in today's economy and this rings true for the hospitality industry as well. Individuals with practical experience, aligned with specialized education, have a much better chance landing a full-time position in their field of choice. I also had the opportunity to watch ABC's 'The Bachelorette.' and you can imagine my surprise to realize how well read *Lodging Engineer* is when I recognize our recent 1st Person interview featured the Nemaquin Woodlands Resort in Farmington, PA. I can't wait to hear the other show, 'Hotel Impossible,' recommend that hotel engineering staffs become NAHLE certified. But, that is probably a few episodes away...If I had a handy smiley face or 'lol' to insert I think now would be appropriate.

For a future industry employee the benefits of an internship are many. Besides getting a foot in the door with a potential employer and looking good on an application, cooperatives and internships have other advantages.

Advantages of Internships and Work-Cooperatives:

- The opportunity to "test drive" a career (Would I be happier in marketing or advertising? Am I more comfortable working with my hands or do I prefer sitting behind a desk?)
- Chances to network
- Establishing relationships with mentors
- Possible college credit or certification
- An introduction to the field's culture and etiquette (Are clients addressed by their first name? Are jeans appropriate for Casual Friday?)
- Accumulating new skills
- Gaining a real world perspective on an occupation (How much overtime do employees really work? How much time is spent behind a desk versus in the field?)
- ...and most importantly, building personal confidence in the field and one's self. (*continued on page 12*)

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1st Person Interview **Ryan Napier** *Corporate Director of Facilities, Crestline Hotels & Resorts*

by Robert Elliott

with many ties to the community. Our office here has a lot to offer in the form of proximity to many of the hotels we manage, beautiful beaches, and a variety of attractions.

I started my career right out of high school as a construction electrician while doing my electrical apprenticeship. My first hospitality position was actually with Marriott International. I held several positions with Marriott and Ritz-Carlton throughout the Caribbean before moving to Colorado for a multi-unit position with Vail Resorts. An opportunity as the Regional Director of Facilities with Crestline came available in the summer of 2010 and I knew it would be a great fit for me. It was based in an area that I know and love and gave me the chance to oversee 13 engineering divisions across Virginia and North Carolina. My position simply grew as the company did. Crestline has given me the ability to expand my understanding of the overall business by allowing me to assist with its operational needs during the extensive growth we have undergone in the past couple years.

Ryan, your official title is Corporate Director of Facilities. Your quick rise to this position undoubtedly speaks to your management skills and success in past accomplishments. I understand you began your career as an Assistant Chief Engineer for a Marriott property in Puerto Rico and then moved to Ritz Carlton before you started with Crestline. What were

Ryan, first off I want to thank you for your time and agreeing to be featured in Lodging Engineer. I remember the first time we spoke on the phone and you described an office with a view of Virginia Beach. Most people aspire to a window office, but a view of the ocean... I guess that's why we have vacations. You mentioned to me that your first stop after high school was to enter the job market. I am sure a lot has transpired since those initial days out of school. Was Crestline your first employer?

It is certainly my pleasure to speak to the readership of Lodging Engineer! Having the privilege to work in Virginia Beach has been great for me both personally and professionally. I am a Hampton Roads local



*Courtyard Virginia Beach Oceanfront South 25th Street
Management by Crestline Hotels and Resorts.*

some of the challenges as you literally ascended the corporate ladder of success? Do you have any recommendations for our readers that may aspire to become a Chief or Director of Engineering?

Flexibility, in many different facets, is critical to being able to grow within the engineering discipline. I was fortunate enough to have the ability to travel and relocate very easily at the beginning of my hotel career. This opened such as Puerto Rico, St. Thomas, and Breckenridge, Colorado. I was able to search for positions that were a great fit for myself and my employer without the restriction of needing to be in any particular area.

Staying flexible in your job is also very important and being willing to take on new tasks and responsibilities in order to grow your knowledge base. This goes well beyond engineering specific tasks. It is important to

learn how the front desk and housekeeping departments operate and how your decisions can impact them. We all need to remember that we are hoteliers first, then engineers.

Understanding the mechanics of equipment is a key function, but understanding the impacts of the equipment on a guest experience is what separates us from other facilities related professionals. Developing the mindset of customer service is what makes a great engineer in our business.

Can you tell our readers a little about what you do and the responsibilities associated to your job title?

One of the best parts of my job is that there is nothing monotonous about it! My work varies day-to-day based on the needs of the operations. We currently manage 106 hotels in 28 states and D.C. that are comprised of both full and select service. Our vast reach and the array of different brands we manage creates many unique opportunities that call for creative solutions.

Staying flexible in your job is also very important and being willing to take on new tasks and responsibilities in order to grow your knowledge base. This goes well beyond engineering specific tasks. It is important to learn how the front desk and housekeeping departments operate and how your decisions can impact them. We all need to remember that we are hoteliers first, then engineers. Understanding the mechanics of equipment is a key function, but understanding the impacts of the equipment on a guest experience is what separates us from other facilities related professionals. Developing

the mindset of customer service is what makes a great engineer in our business.

I think your rise to your current position speaks to your many skills and knowledge, but one thing that perhaps stands out to me is your love for technology and understanding of how to make technology's many forms and attributes work for you. I remember when I was working for a major hotel management company and we developed a software system that tracked renovations and capital improvements. Our problem was that the software literally automated functions that in the past were done by staff. Any time you even threaten to become more independent the pushback from those that want to protect their comfort zone can be surprising. How do you feel that technology is impacting the hospitality industry as a whole?

The evolution in technology is also rapidly entering the guest room. Room automation, audio visual features, mechanical equipment automation, and even shifting key/lock functions are taking place daily. Engineers throughout our industry need to stay in tune with these advancements. These components will inevitably need maintenance and sometimes fail. Having a familiarity with how it functions allows for proper troubleshooting and repair.

There are many training resources available online that I highly recommend for all levels of staff. It can be as simple as subscribing to facility related publication such as Lodging Engineer or even taking classes at your local community college.

“Developing the mindset of customer service is what makes a great engineer.”

Technology is here to stay. It's not something that should be feared, but embraced. Understanding of the latest advancement and changes in technology across the board is vital to being successful. I certainly do not feel that systems are being designed or utilized as a staff replacement. The goal is to allow the staff to be more efficient and effective. Preventive maintenance programs are a great example. The technology is not intended to replace the preventive maintenance tech, but rather designed to allow for documentation without manual input. It also can assist in record retention without the necessity for wasting valuable real estate with mountains of paperwork. The objective is simple, more time performing the work and less time writing about it.

There appears to be a shift in the hospitality industry with a much greater focus on capital expenses and planning. A part of this shift is undoubtedly attributed to savings in energy management as well as the new roles of technology and its application. Would you speak to our readers about technology and its impact on travel?

Hospitality adjusts to customer demands. Technology is becoming a more important part of our guests' everyday lives. We utilize it for communication, entertainment, and performing essential functions of our daily routines. We see this being incorporated into the hotels to create a unique and comfortable environment. We have many different

generations of travelers staying in our hotels with varying degrees of technological proficiency. Many brands and owners are trying to find the happy medium of being on the cutting edge while remaining comfortable to those less familiar with the latest trends.

Capital expenses are used primarily to enhance the facility or replace vital components of the building. A solid understanding with your specific owner/management companies' CAPEX policy is very important. The application protocol and even the criteria for qualification can vary greatly.

Energy efficiency is extremely important in our industry. Utility costs are typically the second most expensive item in any hotel operation behind labor. The advancements in lighting have been astounding in the past 10 years. LED technology has become much more affordable and improvement in color quality make it a viable option for many properties. The utilization of frequency drives and automating certain pieces of equipment can also have a significant impact on overall cost of operation. You should always check with your local power company and municipality when performing any energy efficiency project. Many power companies offer energy efficiency rebates that can assist in lowering the return-on-investment (ROI) timeframe.

Engineers always want to consider and present any project that can increase the profitability of the hotel to their general manager or corporate engineering contact.

An old adage in the world of promulgating standards goes something like this: "The good thing about standards is there are so many to choose from." And to that thought, one can easily say the same holds true for technology in the hospitality industry. Choosing the right technology and having a champion to help sell its implementation can be just as challenging as being able to understand its benefits and utilize its processes. Can you tell us a little about how you embrace a technology and its utilization?

There is definitely no right or wrong when it comes to choosing what technology to utilize. It's really all about finding what works best for you. There are already endless options out there and they are getting faster and more powerful every day.

Technology allows me to be in multiple places at once: I can be on a call while composing an e-mail simultaneously, I can get critical information at a moment's notice through text and I can watch a video about a piece of equipment that I am unfamiliar with. I use technology to stay in touch with friends and family, organize my day, take pictures to capture memories, and even use it instead of credit and debit cards. And that's just my smart phone.

As I See It

cont'd from page 6

What's in it for employers?

Most job applicants put their best foot forward on paper. Their applications usually have passed through many hands to make them as appealing and professional as possible and nearly every job seeker picks references who will say positive things about them.

Employers do not create cooperatives or internships just simply to be nice to students and others interested in a certain career. While an interview or a company test can add to what an employer knows about a person, a cooperative or an internship helps an employer evaluate how an individual would fare in the actual workplace. Many companies develop an internship pool and hire from that group. Employers not only seek potential employees with experience, but experience within their company.

What does this mean for the hotel engineer with a NAHLE certification?

Companies that devote time and resources to finding, selecting, and training employees are looking for a return on their investment. The benefit might be in the present or it might be in the future. Certification narrows the education gap and helps advance the profession. Certification helps employers evaluate potential new hires, analyze future job performance, evaluate current employees, and motivate employees to enhance and broaden their current skills and knowledge.

Certificate holders benefit too. Certification gives recognition of competency, shows commitment to the profession, and helps with job advancement. The certificate holder gains practical skills for the job, as it focuses on the knowledge and skills needed to perform real-world job responsibilities. Through certification, you prove your technical skills through the series of tests. Starting and completing the certification process is probably one of the most valuable parts of obtaining a certificate. This shows your employer your determination and ability to complete a task as well as your desire and quest for additional knowledge within your field.

And remember all sorts of opportunities exist for motivated individuals and interested companies to enter into a mutually beneficial relationship.

I hope my daughter looks back on her cooperative experience with John Deere as a hands on learning experience. And, I'm also hoping Santa will give a little more credence to this year's Christmas list than years' past as I have my eye on a new Gator in JD Greene? Back to my conclusion, I believe my daughter's internship will not only provide her hands-on practical experience, but also test her commitment to her chosen field of study and inspire her as she completes her college education. Last summer NAHLE hired an intern. So if you are reading this and interested in hospitality, a student, live near Alexandria's Old Town area and, above all, are still looking for work this summer...drop me a line:

robert.elliott@nahle.org.



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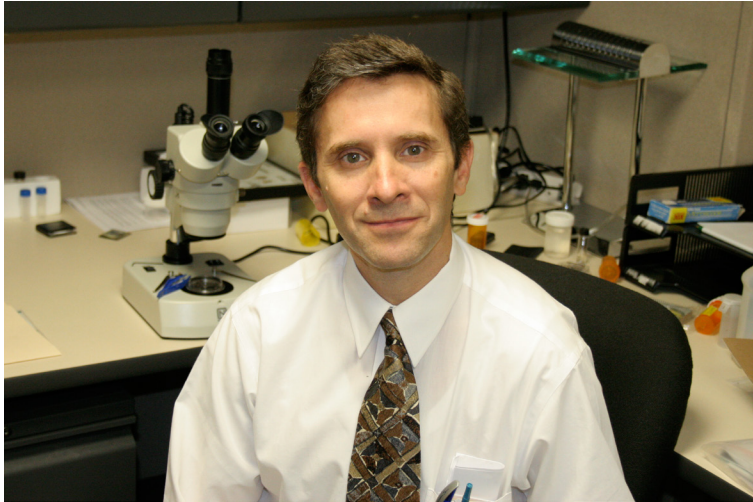
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How to Get Ahead of the *Zika-Virus*-Carrying Mosquito This Summer



Ron Harrison, Ph.D.

Director of Technical Services, Orkin, LLC

Mosquitoes have always been a concern during summer – particularly when preceded by warm, wet springs as most of the country experienced this year. But mosquitoes are making even more of a buzz this year due to the spread of the Zika virus. Since mosquitoes can be more than just a nuisance, it's

Zika cases were limited to parts of Africa and Asia, but more than one million cases have been reported in Brazil since 2015 and the World Health Organization (WHO) has noted the virus is spreading to many countries.

The Zika virus, which can cause microcephaly, a condition in which babies are born with small heads and incomplete brain development, is not the only health threat associated with mosquitoes. Other mosquito-born diseases include the chikungunya and dengue viruses, West Nile virus and malaria. So, fighting these breeding, biting threats is of paramount importance.

What can you do at your hotel to help prevent a mosquito infestation? How can you make your hotel inhospitable to mosquitoes in general? You can begin by contacting your pest management provider about creating an Integrated Pest Management (IPM) plan for your property. IPM is a customized and proactive approach to pest control that focuses on reducing

Mosquitoes continue to make national news as more information about the Zika Virus is discovered.

important to understand how to fight against them in and around your hotel or resort.

Zika is a virus that spreads to humans primarily through the bite of the Aedes mosquito (also commonly known as the yellow fever mosquito). Prior to 2015, known

conducive conditions in an ongoing cycle of assessing the issues, implementing corrective actions and monitoring for improvements. Your pest management professional will be able to identify the most efficient and effective control methods for mosquitoes surrounding your property.



Here are some tips to help guide your efforts:

Watch out for still water and heavy vegetation

There are two ways to help prevent mosquitoes on your property. The first is removing breeding conditions. Standing water is the mosquito's preferred breeding ground. In fact, mosquitoes only need a few inches of standing water to breed, so it's important to be vigilant against even small amounts of standing water.

- *Remove standing water in gutters, buckets, saucers under potted plants and other containers.*
- *Change water weekly in bird baths and keep water circulating in swimming pools, fountains and fish ponds.*
- *Work with your pest management professional to treat water on the property with products that use insect growth regulators or bacteria to target mosquito larvae and inhibit their development.*

The second way is reducing existing adult mosquito populations.

• *Thin out and trim vegetation. When mosquitoes aren't looking for their next bite victim, they hang out in tall grasses and heavily vegetated areas. Reducing these areas will help prevent mosquito populations.*

• *As part of an IPM plan, non-chemical, prevention methods are preferred, but if they fail and mosquito populations grow, consult your pest management professional about treatments that may be appropriate on your property.*

Eliminate points of entry to your hotel

Mosquitoes can enter hotel properties through many ways. Exclusion is a key component of IPM and will help form a barrier against mosquitoes.

- *Close gaps around windows and doors with caulking, mesh and weather stripping. Don't forget about lobbies or shipping and receiving areas.*
- *Make sure that all window and door screens are in good condition.*
- *Make sure your facility has positive air flow and install air curtains to help blow mosquitoes out the door.*
- *Use air-conditioning when possible so you can keep doors and windows closed.*



- *Indoor treatments typically aren't necessary if points of entry are eliminated; however, if your property features an open-air service or shipping area or any inside environment conducive to mosquitoes (i.e., a laundry facility that keeps windows and doors open to air out the heat) consult your pest management professional about services to help reduce mosquitoes in these areas.*

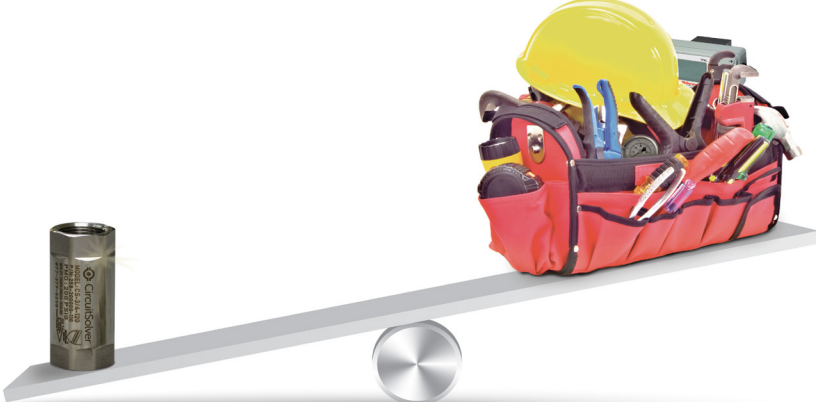
Help guests avoid mosquito bites

Arm your guests with the information and/or products they need to avoid mosquito bites.

- *Encourage guests to apply mosquito repellent. Recommend or provide a repellent that is EPA-registered and contains one of the following active ingredients: DEET, picaridin, oil of lemon eucalyptus, para-menthane-diol or IR3535.*
- *Recommend that your guests wear protective clothing such as long-sleeved shirts and long pants, even during the day when they can.*

If you begin to notice a high population of mosquitoes around your hotel property, make sure to alert your pest management provider immediately. The faster your provider can identify the issue, the sooner it can be resolved – and the faster your guests can get back to enjoying their stay at your hotel.

Ron Harrison, Entomologist, Ph. D., is Director of Technical Services for Orkin. He is an acknowledged leader in the field of pest management with more than 30 years of experience. Contact Dr. Harrison at rharrison@orkin.com or visit www.orkin.com/commercial for more information.




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HVAC Summer Preventive Maintenance



Todd Isbell

PTAC Units: Well, it's that time of year again. Summertime is heating things up as usual, but we don't have to "sweat it". Preventive maintenance on your heating and air conditioning equipment will always help save you money and the disheartening experience of going to a guest room, opening the door and knowing you could probably bake cookies in the room. If you have PTACs (Packaged Terminal Air Conditioner) it's easy to just take them out of the wall and clean them. I highly recommend using drain tabs afterwards to ensure no algae grows on the side of your building or on your balconies. I have also seen the PTAC's drain extended out of rooms that have no balconies which I think is an ingenious idea. However; if a balcony is involved, the drain tab definitely helps keep the drain pan clean, but also helps prevent unsightly green algae growth that no guest wants to see or much less have to share when using their balcony.

You will want to be sure filters are cleaned monthly. However, not only the filters, but you will also want to wipe down the cover as well. I recommend using a very soft work-bench type of brush with longer bristles that can get into those hard to reach places between the vents. It would be best to take the cover outside and hose it down if you have that kind of time. Never wash the filters OR cover in the tub because now you will have a tub drain to clear. Always work smarter not harder. While you have the cover off, check your circuit board for any burn marks or scorched looking diodes. Look at the fuses as well. Check the coils and clean them if necessary. No dust buildup should be seen on them anywhere. Dirt on the evaporator coil or anything actually placed in front of, or over the unit will reduce the amount of air flow over the coil. This reduces the heat load on the coil, so the coil temperature will drop. If the coil temperature drops below the freezing point, the coil will freeze up. The ice acts as an insulator and reduces the heat load. The result is that the compressor sees pure liquid refrigerant rather than refrigerant vapor and will no longer cool, again resulting in guest complaints.

I've seen towels, swim suits, socks, and clothing draped directly over the evaporator vent blocking the air and causing the unit to freeze up so hard the cover gets frozen to the actual unit itself. You will want to keep the thermostat set no less than 68F at any given time. The CFM (cubic feet per minute) of airflow will be determined by the fan mode I.E. fast, medium, or slow, but you can find out the average by checking 10

units that you know are clean and operating efficiently, and then averaging out the CFM of each speed of each unit.

This will give you close to the desired CFM you are looking for. An anemometer is an instrument used for measuring CFM airflow and with an Anemometer; you can measure the speed of the airflow coming out of the PTAC by holding it directly in front of the supply vent of the unit. This is important to know because sometimes the evaporator coils can be clogged somewhere you can't see which in turn will weaken the airflow and you will not be getting the correct efficiency from your unit causing – you guessed it, more guest service calls and dissatisfaction. Also the fan may be dirty or not running at full RPM's for each level of speed setting.

VFU: Now on to VFU's or "Vertical Fan-Coil Units". These are part of an intricate chiller system. Remove the cover of the unit inside the guest room, and you will see the filter, the evaporator coil, and the evaporator fan and the water valve. These work with a thermostat which opens and closes the water valve and allows the chilled (or heated) water to pass through the coils. Some systems are a two (2) pipe system; which are cool only or heat only, others have a four (4) pipe system which can cool and heat at the same time in different rooms.

Once the cover is removed take out the filter and clean the coil. This is easy with these units as they have their own evaporator drain pan right there in the unit. Also you will want to blow out this drain to ensure proper drainage during your PM process of

Safety note: be careful when working on these valves as they may be small, but they are 277 volt sometimes and will bite you if you're not careful!

There are several reasons to check the airflow on your PTAC. Anemometers can range in price from \$10 to \$1,200 and more, but for PTAC's you will only need a smaller version. The one I use also is a thermo anemometer that shows the temperature coming from the unit. Most PTAC'S these days are also controlled by a thermostat mounted on the wall instead of using the actual unit itself. Be sure the cover of the thermostat is clean and if it is a bi-metal thermostat make sure the mercury bulb is free of dust and lint.

the unit. And again use the drain tabs to ensure the drain line is kept algae free. You can use a small pump sprayer and clean the coils right in the room. Next you will want to use a small shop vac or wet vac to vacuum all the dust buildup inside the unit; walls, top, bottom and don't forget the back side of the door. Use your bench brush to clean the vents on the door as well. Now you will want to remove the evaporator fan (usually only 2 bolts); unplug it and take it outside to clean. I have spare fans and motors to replace the one I am cleaning so I don't have to go back to the room in order to save time.

When washing the fan, wrap the motor in a plastic bag to prevent water intrusion, and just hose the fan out good removing all the dust. Use air to blow out the dust in and around the fan motor. On vertical fan coil units and all my other air conditioning RTU's and such I always like to use Merv 8 filters. They seem to get more dust and pollen out of the air than others I have used and make the air more fresh and clean to breath. These filters are also 'green program' approved.

RTU: RTU (Roof Top Units) can be cleaned easily as well, just be sure not to overflow the evaporator drain and flood the room below from the supply duct work. RTU coils should be cleaned with a hose at least once a month, and in more dusty areas twice a month. Evaporator coils on RTU can be cleaned every 3 months as long as the filters are changed on a regular basis. While inspecting the RTU's also remove the electric panel and inspect the wiring. Vibrations can cause the wiring to wear and in time cause a short in the system. Examine wiring harnesses and any wires that are zip tied together to check for rubbing points. Electrical tape will rectify this issue if found as long as there are no bare wires showing.

Replace the wire altogether if bare wire is showing.

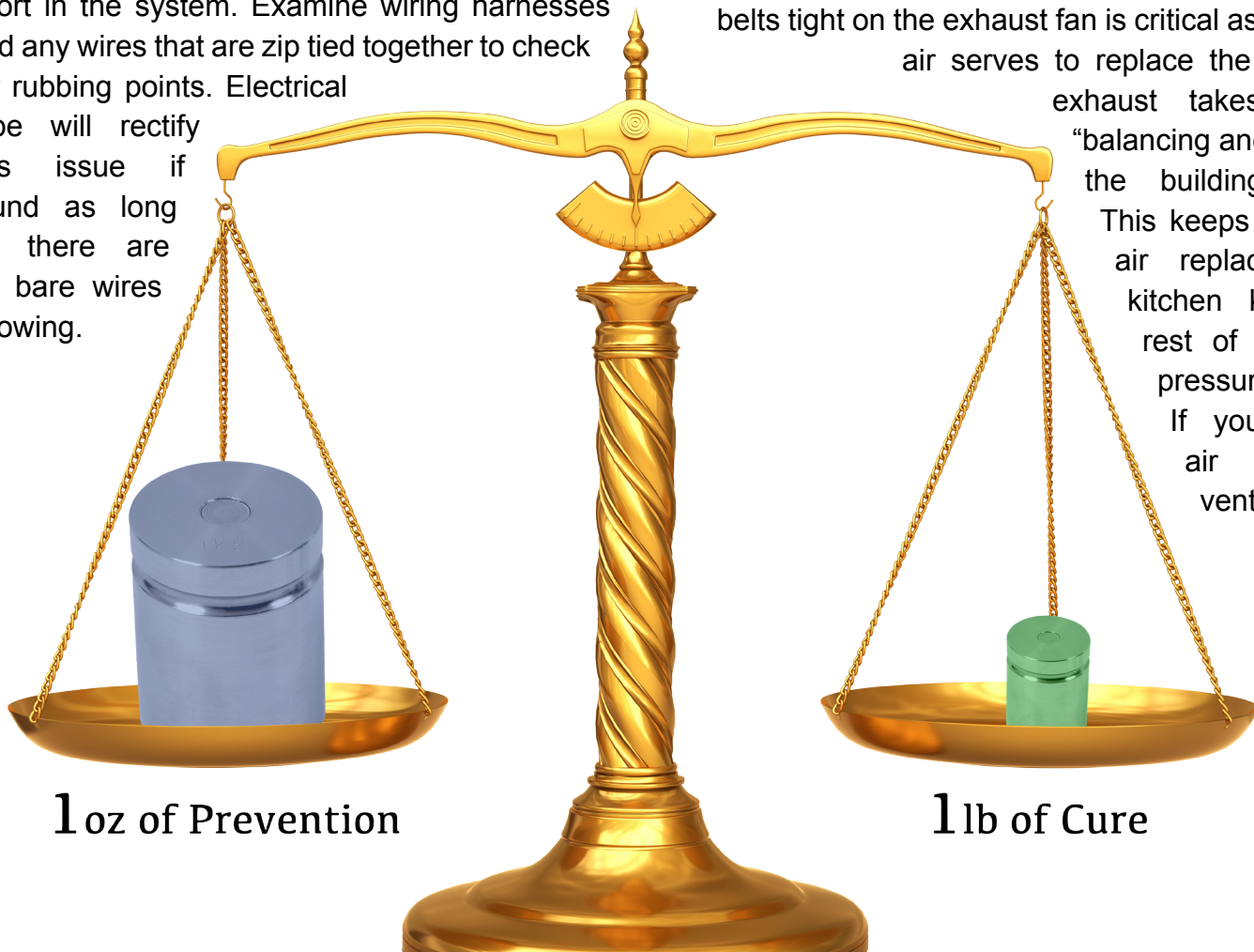
Always remember, an ounce of prevention is worth a pound of cure.

Also, blow out the evaporator drain lines to the roof top drains to ensure they are clear from obstruction. The less water infiltration in your building, the simpler you and your department's life will be.

KITCHEN EXHAUST SYSTEM: Another important piece of equipment to check for building balance and air conditioning is your kitchen make-up air. Your kitchen stoves and ovens have a hood exhaust system that removes air not only from your kitchen, but also from the surrounding areas such as the restaurant or lobby area as well. Should the exhaust fan fail, the smoke and smells from the kitchen will waft into the building causing guest and associate complaints. Keeping the belts tight on the exhaust fan is critical as the makeup air serves to replace the air that the exhaust takes out thus

"balancing and equalizing" the building pressure.

This keeps the exhaust air replaced in the kitchen keeping the rest of the building pressures at bay. If you see your air conditioning vents



1 oz of Prevention

1 lb of Cure

sweating more than usual first thing to check is your kitchen's make up air.

designed to prevent the passage of air, smoke and gases in the event of fire. I recommend checking

“Just remember; a clean unit is a happy unit and a happy unit always works well.”

Ventilation is also important in that most hallway vents have a bi-metal fuse-link that when it gets too hot or too brittle due to age or heat (if installed in an attic environment) can break causing the vent damper to drop blocking air flow.

The vent damper's link is a fire safety mechanism

hallway vents and dampers at least every 3 months. Usually this application is wall mounted and not ceiling mounted and can easily be spotted by the closed damper you can see through the vent opening. These fuse-links should be installed by your fire safety provider(s).



I'm gonna get you, get you, get you one way or another GOTCHA!



by Manny Mercado, CDOE

Well, well, well, what can I say, as the story title goes... yes GOTCHA I got caught. Here at the Westin Governor Morris Hotel, it was a quiet morning so far on June 3rd, 2016. Our property is well known for its many in house weddings and home to many wedding groups that have off site weddings throughout the year. We never had issues or concerns as these events take place. Our new GM, with his new set of eyes on the property, recommended we get small signs to put in each room that had a side wall-mounted sprinkler



head that reads, "DO NOT PUT HANGER HERE OR IT WILL FLOOD." That warning was given about 11 months ago and guess what? GOTCHA!

On 6-3-2016, 11:40 am I was doing work in my office and the alarms go off. I ran to the panel and it read water flow 5th floor west, I alerted my staff to respond to that floor.

As I ran up the staircase my staff replied yes we have an active sprinkler head that was hit. I immediately shut off the valve in the staircase and isolate the water flow. Yes, we had all the bells and whistles blowing including the fire department responding and hotel guests exiting to the front of the building. We had one inch of water in the bedroom. Cause of activation; someone had hung a dress on the sprinkler head.

This story makes you think, if I had put signs up in the past as I was alerted to, this could have been prevented. The water damage was about \$10,000



the valve. Water shutoffs is one of my training topics I go over every 6 months among others. What would have happened with staff who did not attend my training on shut-off locations if I was not on site? Well, we all would guess that the damages would have been much greater.

Keep in mind every water flow activation has its own story to tell. You have to investigate the cause of the flow. Once you determine if it was physically hit and not activated by fire, then if allowed by your township or local government, shut your sprinkler's water off. If it is an active fire, let the fire department make the decision when to shut it off. So now that you have read this story, put this training on your next agenda and don't get caught like I did, because then you'll have to write your story and tell us all about how it Gotcha!

and yes, I admit Gotcha! So think about tips when they are given to you, should you take it with a grain of salt or put some weight on it and see if warrants change? I was actually proactive when he first told me about the signs, but did not finish the project when told 11 months ago. This month, June, 2016; it was our mission to get it done. Each and every guest room was checked for a side-mounted sprinkler head that people think is an extra fancy robe hook. Also this experience is a lesson learned to always keep focused on projects or they will be forgotten or pushed aside.

Armed with this story, it is a good time to train your staff on where your property's shut-off valves are located. Training will help control a situation like ours and keep any damages to a minimum. It just happened to be I was the one to shut off



Recycling Thermostats Protects Us All



*Ryan Kiscaden, Executive Director
Thermostat Recycling Corporation*

Hotel engineers, as stewards of their property and their community's environment, are taking proactive steps to divert the mercury found in thermostats from finding its way into our landfills, soil, water tables, waterways, oceans and ultimately our foods. If you are replacing your old thermostats you can have a very positive impact on the environment by ensuring they are recycled properly.

Most thermostats manufactured prior to 2006 contain mercury. These thermostats contain 1,000 times more mercury than today's standard compact fluorescent light bulb (CFL). In most cases they are the largest remaining reservoir of mercury in homes and businesses today and hotel engineers can play a significant role to see that toxic mercury does not end up in the trash. When mercury from thermostats ends up in the trash, it really ends up in landfills and waste incinerators and then our rivers, lakes and streams. In a natural environment, it converts into an even more toxic form that enters plants and animals in the food chain. And while thermostats are not an obvious source of mercury pollution, they are an easy one to control.

The Thermostat Recycling Corporation (TRC), a non-profit stewardship organization, facilitates and manages the collection and proper disposal of mercury-containing thermostats. Originally founded in 1998 by Honeywell, White-Rodgers and General Electric as a voluntary venture, TRC promotes the safe collection and proper disposal of mercury-containing thermostats. Today 29 manufacturers support the program and their financial support is a reflection of their commitment to a cleaner environment. According to Christyn Zehnder, director of marketing & communications, "Our collective goal is simple: keep mercury out of the waste stream in order to protect the environment. Our network of collection sites consists of HVAC wholesale distributors and HVAC contractors. In 2006 we expanded our program to include household hazardous waste collection sites and thermostat retailers. Today more than 3,600 businesses and communities in 47 states are enrolled in our program. Since our founding we've collected over 2.1 million mercury-containing thermostats – that's kept 10 tons of mercury out of the waste stream."



Legislative Efforts Encourage Mercury Recycling:

In 2008, mercury thermostat collection legislation was passed in Vermont requiring thermostat manufacturers to establish collection programs for contractor and consumer-generated mercury thermostats with a financial incentive of \$5.00 for recycling each mercury

thermostat. You can now search the TRC website to view your state's mercury thermostat laws and collection programs. <http://www.thermostat-recycle.org/statelaws>.

from service and they are not allowed to leave them on a customer's premise. If you are installing a thermostat yourself, visit TRC's find a site page to find your nearest collection site where they will be happy to take the old mercury thermostat from you to recycle, free of charge!

If you live in any of the following states: CA, CT, IA, IL, ME, MT, NH, NY, PA, RI, or VT, all HVAC wholesalers are required to collect mercury thermostats at no cost. In all other states, participation as a collection site is voluntary.

And of course, if you are renovating your property and upgrading from a mercury thermostat by all means make sure the old thermostat gets recycled. This will help us achieve our collective goal of keeping mercury out of the waste stream and protecting our environment.

All states require the safe handling of waste mercury thermostats in accordance with both state and federal law. Seventeen states further regulate the sale and/or disposal of mercury thermostats. To download the updated Mercury Thermostat Legislation Comparison Chart click [here](#).

Author Bio: Ryan Kiscaden, Executive Director of Thermostat Recycling Corporation (TRC). In March 2016 Ryan was appointed Executive Director and joined TRC in January 2014 as the corporation's Director of National Accounts to expand TRC's network of wholesale collection sites. Ryan.kiscaden@thermostat-recycle.org



8 Guest Room Modifications To Resist Bed Bug Infestation



*Joseph Latino, president,
Allergy Technologies, LLC*

Hotel engineers can play a significant role in preventing bed bug exposure and infestation by recommending simple modifications to guest room design and decor. The design choices made by management for room refurbishing may be inadvertently creating a welcoming environment for bed bugs.

Hotel engineers and maintenance teams are well aware of the threat of bed bug infestations and know how easily these intrusive pests can be once introduced into a hotel room by anyone walking through its doors, from hotel guests to service staff or even a shipment through the loading dock. Bed bug's small size, ability to rapidly reproduce, withstand long periods between meals and nocturnal tendencies make them difficult to detect.

The effects of an infestation can have a severe negative impact on a hotel's business. Reports may land on travel websites putting hotel reputations at stake not to mention expensive treatment costs and lost revenue resulting from rooms unavailable for

rental. Reimbursement is frequently offered to guests affected and the potential negative consequence on stakeholder equity can be devastating if a guest chooses to pursue aggressive legal action.

So what does hotel room design and preventive bedding have to do with infestations? It could mean the difference between a full-blown infestation and minimizing the likelihood that a single bed bug introduced into a room ever transitions into an infestation. Adjusting current hotel room configurations, making changes in future design plans and implementing a preventive bed bug measure can assist in lowering the incidence of bed bug infestations in hotel rooms.

8 Guest Room Modifications to Reduce Bed Bug Infestation

1. HEADBOARD DESIGN

Upwards of 85% of bed bugs are found within a 5-foot radius of the bed, with headboards being notorious for egg deposits. Removing upholstery in its design would be a marked step forward in reducing harborage, given the folds and tufts (similar to a mattress and box spring) routinely found in this furniture. Also, straight design with little to no textured woodwork reduces areas susceptible to egg deposits. In addition, attention should be drawn to the backside of the headboard as this area is routinely a 'hot spot' for bed bug activity.



2. BOX SPRING DUST RUFFLES

Dust ruffles that cascade onto the floor are an easy entrance ramp for bed bugs to crawl onto bedding. These ruffles are often highly pleated and cinched making favorite hiding and bed bug egg repositories. Highly suggested are the new decorative fabric covers available that fit snugly onto the box spring (foundation).

4. MATTRESS ENCASEMENTS AND ACTIVE LINERS

Installing a mattress encasement protects the bed from penetration by bed bugs. Active mattress liners protect the mattress and/or box spring, but also the guest sleeping in the bed by killing bed bugs that come into contact with the liner. An active liner installs like a fitted sheet. Installation of this simple preventive measure can stop bed bugs introduced into the room from turning into a full-fledged infestation.

5. PICTURES

Wall coverings (e.g., pictures) that are secured with nails or other implements that puncture the wall are commonly found as harborage sites for bed bugs and their eggs. While it is probably not reasonable to suggest that pictures not adorn hotel room walls, it is recommended not placing them on the wall on which the bed and headboard rests.

6. WINDOW TREATMENTS

Draperies and most specifically valances are

“The effects of an infestation can have a severe negative impact on a hotel’s business.”

3. BOX SPRING PLATFORMS

Typical railed box spring frames are replete with ‘nooks and crannies’ that are commonly strewn with bed bug eggs when an infestation occurs. In contrast, metal box spring platforms are far less conducive toward bed bug harborage in the event that a room is challenged.

notorious sites for bed bug harborage. Design choices that use the least amount of tufting and pleating should be considered in room design to reduce the likelihood of these design elements becoming sites for egg deposits. Alternatively, wooden or other non-upholstered valances would further reduce these areas as harborage sites.

7. SEATING FURNITURE

While aesthetics and comfort are often key elements in selection, upholstered couches and chairs do pose risks for bed bug harborage. If upholstered seating is chosen, those with fixed seating and backrests (as compared to loose pillow design) are recommended.

8. LUGGAGE RACK AVAILABILITY

Guests dropping their suitcases on beds represent the most likely introduction of bed bugs onto bedding or other upholstered furniture. In lieu of a luggage rack often stowed in a closet, a hard surfaced furniture

element designed for placement of luggage is preferred and does not render an easily hidden bed bug harborage site. Operationally, a simple reconfiguration in room layout to make certain that the luggage rack is openly available, easier to inspect and utilize, would be highly advantageous.

Joseph Latino is president of Allergy Technologies LLC. Joseph's twenty-five year knowledge base as a biochemist coupled with his years of experience in medical device development and the pest control industry has enabled him to position ActiveGuard as a revolutionary product in the control and prevention of bed bug infestations. Joseph can be reached at <mailto:joseph@allergytechnologies.com>.



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Cloud-Based Maintenance Systems May Be The Next **Game Changer**



Paul Lachance
President of Smartware Group, Inc.

The hospitality industry is poised for a digital maintenance makeover. In the past, hospitality businesses relied on post-its, spreadsheets and calendars to manage day-to-day equipment responsibilities but they are becoming ineffective and costly as hotel maintenance becomes more technical and complex. The good news is that technology is rapidly streamlining maintenance management processes by providing software systems that manage and distribute data quickly and efficiently. Today, a new generation of cloud-based Computerized Maintenance Management Systems (CMMS) can digitally capture asset information in real-time to help; predict maintenance issues, improve maintenance staff efficiency, assist with regulatory compliance, and manage inventory and budgets. At the end of the day, these new systems are scalable, meaning they easily capture today's data and are also designed to capture the demands of tomorrow's data before we even know

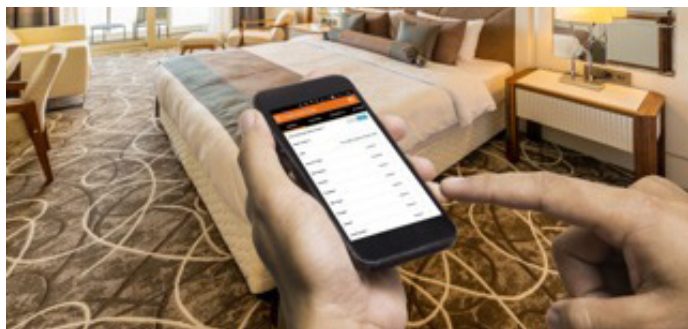
what that data is or how large its demands will be. CMMS are also easy to use and will save you time, money and a lot of headaches.

Cloud-based systems are growing in popularity because individual operators can now access the system online. The new CMMS focus on the needs of the hospitality industry and help hotel engineers successfully manage their complex maintenance responsibilities both simply and efficiently.

The general benefits of these systems include:

- Scalability to handle unlimited users, sites, and configurable reporting and automated workflow processes
- Ability to schedule unlimited preventive maintenance tasks and procedures with automatic reminders
- Capability to create, manage, and analyze work orders for optimal resource allocation
- Track and analyze equipment information and history
- Initiate maintenance requests anywhere within your organization, from an assortment of user types
- Manage and track asset and parts inventory
- Analyze historical maintenance issues to help predict future events
- Notify personnel of maintenance events through the dashboard and automatic e-mails
- Locate maintenance "hot spots" in your facility

And now, hotel engineers can access their CMMS with a dedicated smartphone or tablet device.



How does a CMMS Predictive Maintenance Work?

A CMMS can prevent maintenance issues before they occur by alerting the hotel engineer of needed updates based on the typical lifespan of an asset or the manufacturer's recommended maintenance requirements. Not every maintenance issue is entirely preventable based on a calendar schedule, though modern CMMS' can digitally monitor the actual state of each asset on the property in real time. For example, CMMS can continually track HVAC metrics, like temperature and airflow, and alert the engineer

will improve the efficiency of your facility's maintenance operations and reduce labor and inventory expenses.

- **Go Mobile:** Today's CMMS now offer a dedicated mobile app for smartphones and tablets. A CMMS mobile app can physically map out assets and work orders to efficiently manage staff time and maintenance priorities.

- **Well-managed budgets:** Recording maintenance and costs over time allows engineers to spot trends through reporting such as Asset Life-Cycle Analysis.

- **Happy and loyal customers:** Hotel customers should never have to report a maintenance issue during their stay. Hotel engineers need to ensure that all assets within a room or throughout the property, such as pools or fitness rooms, operate seamlessly during a guest's stay. With a mobile-app equipped CMMS, lodging engineers can access the system on-the-go, communicate with maintenance personnel, housekeeping and the front desk to ensure the customer's expectations are met.

Get started now. Hotels and resorts have made great

“The next frontier for maintenance professionals may well be cloud-based CMMS technology.”

before data reaches a point where a system failure might occur. Acting on an alert, the engineer may call on 3rd party maintenance contractors or replace/repair the failing part before the equipment is damaged. And this can save everyone time and money. While a calendar-based schedule can anticipate many of these problems, predictive maintenance offers a more streamlined and accurate approach to monitoring the hotel's systems and addressing problems before they occur.

Benefits for Lodging Engineers

- **Improved efficiency:** A well-designed CMMS with robust asset and equipment management

progress in the last five years conserving water and energy consumption. The next frontier for maintenance professionals may well be cloud-based CMMS technology. By taking one step at a time, you can transition your operation from traditional spreadsheets or dated software to the benefits of high performance CMMS.

Paul Lachance is president of Smartware Group, Inc., producer of the award-winning cloud-based Bigfoot CMMS. Lachance has been developing and perfecting CMMS for the maintenance professional for more than 20 years. Contact Paul directly at paul.lachance@bigfootcmms.com or visit bigfootcmms.com.

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