

## first person



## INTERVIEW

## Rick Creviston

Director of Engineering  
Hyatt Regency St. Louis at The Arch  
<http://www.hyattregencystlouis.com>

Every hotel undergoes a renovation or some form of capital expenditures sometime during the useful life of a property or building system. Property renovations provide a number of challenges to you and your staff. These challenges can range from coordinating noisy roof repairs and out-of-service elevators to providing on-site supervision. Renovations are often an inconvenience to both you, your staff and your guests and can go on for months adding stress and reducing your personal down-time. However, there are several key factors that contribute to a 'successful' renovation including good project management skills, competent subcontractors, reliable and trusted suppliers and, perhaps most important, your ability to communicate the project

I recently had the pleasure of staying at the Hyatt Regency St. Louis at the Arch and couldn't help but notice the beauty of Hyatt's recently renovated hotel. I remember the property when it was an Adams Mark, and I have to say one sees and feels the "Hyatt Touch" through out the entire property. Every detail is perfect. I am pleased to be interviewing Rick Creviston, Direc-  
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*Hyatt Regency St. Louis at The Arch*

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**DC Hotel Engineer's Luncheon**

**Who:** National Association of Hotel & Lodging Engineers

**What:** Hotel Engineer's Luncheon  
 'Bring along one of your staff'

**When:** 12:00 PM - December 8th, 2011

**Where:** Madison Hotel 1177 15<sup>th</sup> St. Wash. DC

**Directions:** [Dupont Circle, Farragut North & McPherson Square Metro Stops](#)

**Sponsored by:** Grainger Industrial Supply - Free Tool Giveaways

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**Federal Energy Legislation Affects Hotel Lighting Products**

Recently passed federal energy bills set new minimum efficiency levels for many common lighting products. Light sources or ballasts that do not meet these standards cannot be produced for sale in the United States. Many fluorescent and incandescent lamp types are impacted in 2012. Hotels currently using these common lamp types will need to convert to more efficient lighting technology.

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www.Lightbulboptions.org

# As I See It



I am proud to say 2011 has been a very successful year. However, we are still growing and we need your help now more than ever. NAHLE is a trade association developed with your professional development foremost in mind. We completed our Certified Chief Engineer study guide this summer. NAHLE is now partnering with the American Hotel & Lodging Educational Institute to publish and distribute our study guide. AHLEI will also be administering our on-line testing. It is an open book test and I just passed it, so I know you can. Our curriculum is unique in that it is 'hotel centric.' By this I mean

it has been developed for hotel properties that operate 24/7 365 days a year and are often mixed-use properties with laundry, restaurants and various other retail occupants in addition to your guests. NAHLE's curriculum has been developed by hotel engineers for hotel engineers. So, go to [www.nahle.org](http://www.nahle.org) or our partner, AHLEI, for your professional development. And, remember, NAHLE is "Committed to Engineering Excellence."

We also have our first regional educational seminar planned for the DC area this December 8th at the Madison Hotel. General Electric (GE) will be the keynote speaker discussing the operational impact of the new federal legislation affecting incandescent lighting in hotels. The meeting and lunch are sponsored by Grainger, a distributor of GE, Phillips and Sylvania lighting products. We are planning other educational seminars, so if you'd like us to come your way please contact NAHLE.

We are pleased to say that our newest strategic partner, Capstone Turbine Corporation, sponsored NAHLE's first printing and mailing of Lodging Engineer. We mailed our last issue to over 4,000 hotel properties and have expanded our database to well over 10,000 recipients. You can read our last issue by accessing [www.nahle.org](http://www.nahle.org) and locate a CapStone distributor if you are considering a CHPC project at your property. Our goal is to print and mail a free copy to every engineer that joins.

We are also trying to ramp up to six issues a year. 2012 may only go quarterly, but eventually we plan to print and mail a copy of Lodging Engineer to each of you every other month. So, if you have an article, know a vendor who may have a story of interest or would like to be interviewed as our 1st Person, please contact NAHLE.

And, after much deliberation we have decided to give Hotel Engineer Memberships away for FREE! Look for further announcements on our website in 2012 for details. Members get a significant discount off the CCE program.

Thank you for another great year... And please join NOW! Or better yet, wait until 2012 for your free membership.

Best regards,

Robert Elliott

President & CEO

National Association of Hotel & Lodging Engineers

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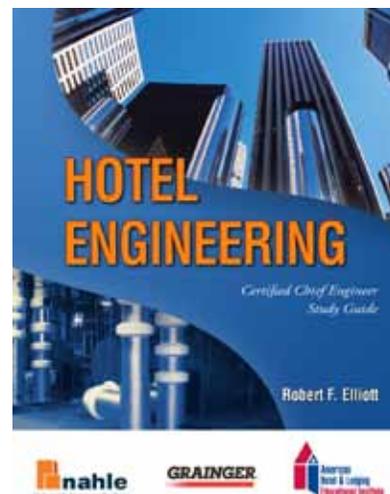
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## NAHLE Announces Certified Chief Engineer Program

NAHLE is proud to announce that their CCE study guide is complete and may be purchased from NAHLE's website or from our partner the American Hotel & Lodging Educational Institute.



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# Fire Safety & The Lodging Industry Mission Accomplished ??

By Tom Daly

The Hospitality Security Consulting Group LLC

<http://www.thehscg.com>



If you follow the issue of firesafety in hotels and motels, you might conclude today that the lodging industry's historical problem with fires has largely been eradicated. Your conclusion would be partially correct.

To that point, first let's review the good news.

**Hotel Fires** - From the lodging industry's worst years in the early '80s when more than 12,000 fires struck the approximately 2.1 million U.S. hotel rooms each year causing some 150 fire deaths and 750 fire-related injuries annually, in 2010 (latest figures available) there are less than 4,000 fires, 11 fire deaths and 150 fire injuries each year in our nation's hotels and motels. And, not to be omitted from this analysis, the number of hotel rooms has grown to more than 4.7 million. As such, looking at the rate of fires per 100,000 hotel rooms each year, the improvement is staggering and dwarfs any similar improvement in any other occupancy group over the same three decade period.

**Codes and Standards** - Some code writing organizations, which shall remain nameless, are quick to claim credit for the reduced number of hotel fires citing the changes to their codes and standards affecting hotels which are adopted by local governments in their building and fire codes. Nothing could be further from the truth. No smoke detector or fire sprinkler ever prevented a fire from starting in a hotel.

Further, new or revised codes and standards rarely, if ever, are applied retroactively to existing hotels and other lodging establishments. For example, the International Fire Code, the predominant code adopted by states and localities to form their fire codes, specifically applies its 'con-

struction and design' provisions, including firesafety requirements, to 'Structures, facilities and conditions arising after the adoption of this code'.

**Hotel Chain Firesafety Standards** - The establishment of corporate firesafety policies by major lodging chains including Hilton, Marriott and Sheraton (now Starwood) in the '80s and their enforcement over the ensuing decade played a large role in reducing the outcome of fires that did occur in their properties. No hotel fire deaths have occurred in any of those chains' properties once their firesafety policies were fully implemented in the early '90s. These corporate firesafety policies, which largely mandated full sprinkler protection and fire alarm systems for all hotels along with smoke detectors in all guest rooms, were made applicable to all new and existing hotels, including franchised properties. More than \$1 billion was voluntarily spent on improved hotel firesafety by the industry to reduce the threat of fire to guests and employees.

Additionally, those policies often required enhanced fire resistant requirements for such items as mattresses and upholstered furniture purchased from those chains'

expertise in most lodging establishments rests in the engineering department and in its Chief Engineer or Director of Property Operations. They largely teach the rest of the staff the basics of fire inspection techniques, emergency evacuation procedures and, where designated and trained, how to operate basic fire extinguishing equipment such as fire extinguishers and fixed fire extinguishing systems as are found in hotel kitchens. They also are responsible for testing and maintaining fire alarm systems, fire equipment and are often the liaison between the hotel and the local fire department.

Good firesafety policies and procedures married to correct training and diligent enforcement have made most, but not all, of the lodging industry the poster child for firesafety. Notwithstanding these successes, the remaining fire problem is almost exclusively focused on older limited-service hotels and motels. A bit of firesafety advice—don't stay in such establishments—ever. There are plenty of new limited service hotels in virtually every major lodging operator's family of brands at all price points to satisfy your needs. Those properties will have all of the requisite firesafety features

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***“The lodging firesafety threat which remains today can be laid at the feet of slumlord operators of mostly older limited service low-rise hotels.”***

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supply management resources. Historically, those items were among the 'item first ignited' in hotel fires as reported in NFPA fire statistics.

Almost all hotels constructed after the late '80s were required by newly revised building codes to have automatic sprinkler systems in all areas along with fire alarm systems and smoke alarms in each guestroom.

**The Critical Player** - The Hotel Engineer - At the hotel level, the reduction in the number of fires is largely attributable to lodging industry engineers. The firesafety

to limit your risks, if not eliminate them altogether.

**The Fire Next Time** - Now for the bad news. The lodging firesafety threat which remains today can be laid at the feet of slumlord operators of mostly older limited service low-rise hotels. Those hotels were largely built prior to code changes in the late '80s which mandated fire sprinkler systems in all newly constructed hotels, along with smoke detectors in guest rooms, fire alarm systems and related emergency procedures, training and strict maintenance of fire equipment and systems. Those operators have

not upgraded firesafety equipment and systems in their properties nor have they adopted their own firesafety policies for their owned, managed or franchised hotels which would address this failing.

Lodging fires over the last two decades have resulted in multiple loss of life:

San Diego, CA – three stories – 2 civilian deaths – 12/17/2004

Reno, NV – three stories – 12 civilian deaths – 10/31/2006

Reno, NV – two stories – 2 civilian deaths – 12/10/2007

plementing the 'Hotel and Motel Firesafety Act of 1990' <http://www.usfa.dhs.gov/applications/hotel/> provides some information, but not all hotels have bothered to register and few travelers know about this resource. Your best bet is to call the hotel and ask to speak with the General Manager or Chief Engineer. Be specific, especially as it relates to sprinkler systems, as fire deaths in sprinklered hotels are unheard of.

Hilton, Marriott and Starwood have set a high bar for firesafety. Staying at one of their brands is a safe bet. But no matter how much fire equipment and systems are present in hotels, it is the hotel engineer that is key to maintaining same, so that when called upon everything works as intended. The training, inspections and drills most engineers provide and supervise are critical to ensuring a safe lodging experience. ■

*Thomas G. Daly, MSc., CSP is the former Vice President Loss Prevention for Hilton Hotels Corporation and past Chairman of the NFPA Lodging Industry Section. He was the lodging industry's key witness at Congressional hearings considering the 'Hotel and Motel Fire Safety Act of 1990' P.L. 101-391. He is currently a Managing Member of The Hospitality Security Consulting Group, LLC [www.thehscg.com](http://www.thehscg.com).*

***“No matter how much fire equipment and systems are present in hotels, it is the hotel engineer that is key to maintaining same, so that when called upon everything works as intended.”***

**MULTIPLE LOSS OF LIFE IN HOTEL FIRES IN THE UNITED STATES 1990-2010**

Miami Beach, FL – three stories – 9 civilian fire deaths – 4/6/1990

Chicago, IL – four stories – 21 civilian fire deaths - 3/23/1993

Bowling Green, KY – two stories – 4 civilian deaths - 1/6/1996

Greenville, SC – three stories – 6 civilian deaths – 1/25/2004

Hoover, AL – two stories – 4 civilian deaths - 1/16/2010

Clearly, the lack of corporate firesafety policies among some lodging system operators constitutes a clear and present danger to the traveling public. So how does a traveler find out if a hotel has comprehensive fire protection equipment, systems and emergency procedures? Good luck finding basic fire safety information, such as whether the hotel is equipped with fire sprinklers and smoke detectors, on chain websites.

The U.S. Fire Administration's website im-

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**INTERVIEW WITH Rick Creviston**

continued from page 1

tor of Engineering, Hyatt Regency St. Louis at the Arch in this month's edition of Lodging Engineer.

**HOW DID YOU COME TO GET INVOLVED IN THIS PROJECT FOR HYATT?**

I started with Hyatt Hotels in 1976 at the Hyatt San Francisco as a part-time dishwasher, then assisting the executive steward and within a year became an engineer. I had done a lot of work earlier on aircraft and automobiles and when Hyatt offered the opportunity to join their company I never looked back. I was transferred to the Hyatt Regency in Monterrey, CA and then became the Engineer for the Hyatt St. Louis at the historic train station in 2004. Hyatt took over the Adams Mark in 2009 and converted it to the Hyatt Regency St. Louis at The Arch, a spectacular location.

**THE CURB APPEAL IS PERFECT. IT LOOKS LIKE A BRAND NEW HOTEL. CAN YOU GIVE US A BRIEF OVERVIEW OF THE PROJECT?**

Hyatt undertook a complete renovation of all the public spaces and 950 guestrooms, including partial infrastructure changes to the first three levels of the lobby. All 910 guest rooms and bathrooms were gutted and completely renovated. We modified the heating system and upgraded and replaced the electrical and cable systems, elevators, fire alarm and sprinkler systems.

**DID YOU HAVE INPUT INTO THE OVERALL MASTER PLAN?**

The owners, Chartres Lodging Group, LLC over saw the plan, while I assisted in developing, implementing and coordinating the modification for tonality and services. My engineering staff of 18 helped on a day-to-day basis while our Managing Director, Greg Saunders, helped to integrate the project with hotel operations and the staff.

**WHAT WAS THE BIGGEST CHALLENGE YOU FACED?**

The biggest challenge we faced was conducting a total renovation while keeping the hotel open at all times, no interior space went untouched.

Another challenge, and maybe the largest, was completely modifying the three-story multi-level entrance lobby while the hotel

was in operation. We ushered customers through the construction zone with partitions and signage during the build-out that consisted of four phases. We were constantly placing temporary walls to reduce the noise impact from constant jack hammering, sawing and hammering when the hotel was hosting meetings and conferences in the 24,000 and 18,000 sq/ft. ballrooms that opened into the three-level lobby.

**HOW DID YOU MINIMIZE THE IMPACT FROM THE CONSTRUCTION FOR 18 MONTHS?**

Flow charts are a handy tool to overlay with the business operations. They will immediately show you in advance where you are going to have conflicts. I developed, long-range, detailed, project schedules, that coordinated with the sales and catering staff so we could avoid or at least minimize the impact of the noise on meetings and events. Noise was a problem day and night. You have to look for opportunities to manage the workflow. I found it was critical

for a comfortable stay.

Then we coordinated the workflow so as to minimize the impact on our guests. Guestroom floors with 85 rooms each were done in a sequence of three floors at a time. We started at the top floor. When it was completed we kept a floor as a barrier, above and below to reduce the noise and impact on guests as we work our way down the building. The bottom floor was stripped, the middle floor renovated and the top floor was ventilated and prepared for occupancy. Plus the top floor acted as a barrier to the floors above.

**HOW DID YOU COORDINATE WITH THE RESERVATIONS DEPARTMENT?**

There are only a certain amount of rooms available on any given day. We planned with hotel management to take 250 rooms out of inventory so sales could book to the true available capacity. This advance planning worked reducing the impact on our guests and helping the hotel to generate revenue while under renovation.

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*“The biggest challenge we faced was conducting a total renovation while keeping the hotel open at all times . . .”*

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to hold contractors accountable to agreed upon work schedules, even though they were reluctant, they quickly learned to care about the guests as much as I did.

Managing staff worked to our advantage during the project. We asked a lot of our staff. We were fortunate to begin at the start of the major downturn in the economy. This helped us to maintain staffing and maximize performance. My engineering and maintenance team were able to contribute their labor by absorbing a lot of jobs including stripping rooms in preparation of renovation and installing many of the components.

**HOW DO YOU MANAGE ALL THIS CONSTRUCTION ACTIVITY WITHOUT IMPACTING THE GUESTS?**

First, no surprises. The guest has expectations so the hotel let them know in advance the hotel was being renovated. Second, acknowledge they may be unconvinced. Upon arrival we made a big effort to put out signs “pardon our appearance” to inform guests upon entering the hotel that it was under renovation and that we are doing our best to make sure they had a com-

**HOW DO YOU CONTROL THE FLOW OF ODORS AND DUST, ESPECIALLY WHEN PAINTING?**

We painted on one floor at a time and used water based paints so it reduced the impact on the guests. We took advantage of the building's design, managing the ventilation which reduced the flow of odors and dust. We had very few complaints.

To manage the elevators we sealed off the floors by placing a thin sheet of plastic over the elevator doors on the floors we were working on so odors and dust would not travel through the elevator shafts. We also attempted to obscure the construction floor elevator buttons so guests could not push them. This, plus carefully managing the airflow, worked well although sometimes the odors would find their way up the elevator shafts.

**WHAT WERE SOME OF THE UNFORESEEN CHALLENGES?**

Dumpster battles. This was something I did not anticipate. During the project there was a steady flow of materials going into the dumpsters that were pulled daily. I dis-

covered contractors dumping environmentally inappropriate materials that reflected on the hotel materials. We learned we had to watch the trash flow from fluorescent products to paint thinners. If it is on my loading dock it reflects on our property.

The seasons impacted the project as we transitioned seasons over the 18 months. Each season brought its challenges. During the winter the volume of materials

system, drain it, make the modifications and then have it completely refilled, tested and operating by 5 PM each evening. It was a lot of repetitive work, but we never went through a night without a fully operational sprinkler and fire alarm system.

You mentioned some major noise or “sonic booms” coming from the garage. Tell me about that.

Repairing the three-story underground ga-

quency drive for savings. All components that came off one of the original chillers were moth balled with a full set of back parts to maintain the original chiller. The retrofitted chiller became the “B” chiller and is run on backup on intervals. The retrofitted chiller reduced energy by 40%. We worked with Johnson Controls in creating the plan and they contracted the work. It took six months with absolutely no impact on the guests, what so ever.

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***“We took advantage of the renovation to install new, energy efficient lighting throughout the hotel.”***

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coming in and out of the building made it difficult to manage the back of house, especially at the loading docks when it dropped to freezing. That and the constant flow of large quantities of materials disrupted deliveries at the loading docks. We could manage this when the temperatures were 40 and above, but once it got below freezing we really began to have problems. Besides everything getting wet and frozen, deliveries took longer, the doors were constantly open, freezing everything including the kitchen staff. Plus the fumes became a problem from the idling trucks.

We tried to schedule deliveries as efficiently as possible and keep overhead doors closed, but it did not help. The swinging type doors we had were ineffective so we replaced them with high-speed roll up vinyl doors with auto-motion sensors that would open and close in 2 seconds. These high-speed roll up doors are really nice and did the job keeping out the frigid air and moisture. We also brought in natural gas powered heaters to stabilize the temperatures.

Summer posed fewer problems, the building can handle the heat, but we were concerned about the excessive humidity from construction. To remedy this we had installed a terminal reheat system in the intake ductwork that helped to keep a dry environment.

***DID YOU HAVE TO SHUT DOWN ANY BUILDING SYSTEMS?***

Occasionally we had to shut down power, but modifying fire sprinklers while the hotel was operating was a real challenge. The sprinklers, as you redesign space have to be altered and modified. All our lower level sprinklers had to be shut down and reloaded. For 150 days we had to shut down the

rage brought its own set of problems. The garage decks had been spalling for many years. We used hydro blasting equipment that could blast away 8 inches of weak or deteriorated concrete. Then we would follow up with concrete forms and new cement. It was a noisy operation. We would get sonic booms when the water punched through the floors because the water is traveling with such velocity that when it punches through it would release a sonic boom. Everyone had to wear protective equipment, hard hats and earplugs. It was a headache, but it accomplishes in ten seconds what a man could do in a couple of hours with a jackhammer. After re-pouring we sealed the decks with clear liquid concrete sealer.

***WHAT IMPROVEMENTS TO ENERGY CONSUMPTION DID THE RENOVATION TARGET?***

**In-Room Sensors** - We installed network thermostat systems in the hotel rooms, designed to detect occupancy through motion and set back temperatures based on occupancy. In room energy consumption was reduced. When the room is empty the system reduces the energy consumption and stops exhausting make up fresh air.

We were concerned about the effect the system would have on humidity control in the bathrooms. It had no negative effect and that holds true today. We worked with the Telekonet, smart energy system from Milwaukee WI. They provided the in-room sensor system that is very effective in conserving energy.

**Chillers** - We replaced one chiller and retro-fitted the other 1200 ton chiller to an R-134 Freon system which enabled us to run condenser waters at a variable fre-

**Heat Exchangers** - We installed plate and frame heat exchangers, compact Polaris with high capacity to provide free flowing water during the winter months. Free cooling uses tower water at 40 degrees to cool the chilled water loop.

**Reduced Kitchen Exhaust** - We did some interesting work in the kitchen by putting in controls on all the exhaust hoods and make up air vents. We installed the Melink Exhaust Hood Control System that runs a laser beam across the hood entrance. As a the amount of smoke and particulates increase the system advances the speed to keep up with the increase in smoke. This reduced exhausting interior air unnecessarily for endless hours.

**Lighting** - We took advantage of the renovation to install new, energy efficient lighting throughout the hotel. At the time flo-



rescent lighting was the dominant choice in energy efficient lighting. We may have considered LED technology but LEDs were not putting out sufficient lighting for guest rooms. We installed compact fluorescent lights in all the guestrooms, desks got one 34 -40 watt, accents at 23 watts, entry way overhead 13 watts and the bathroom lights are 19 watts. We did install LED lights in the exit signs.



**WHAT WAS YOUR BIGGEST CHALLENGE DURING THE PROJECT AND HOW DID YOU RESOLVE IT?**

Our biggest challenge during the renovation project was to constantly reinforce the reason to staff and contractors that we are in business to take care of the guest. We lived through it and weathered the challenges by carefully planning ahead and adopting an attitude that day to day business comes first and the comfort, care and satisfaction of the guest was the purpose of our work.

**WHAT ADVICE DO YOU HAVE FOR COMMUNICATING WITH DEPARTMENTS AND UPPER MANAGEMENT?**

“If someone doesn’t understand the problem at hand, then you have failed to communicate or you’re wrong. Don’t discount the fact that you might be wrong. Either one is a real possibility. There is more than one way to skin a cat, but don’t get tunnel vision and quit listening to others because they may have good ideas and legitimate objections to your ideas or, they might be right?

**“If someone doesn’t understand the problem at hand, then you have failed to communicate or you’re wrong.”**

**IN CONCLUSION, HOW DID YOU KEEP EVERYONE MOTIVATED TO GET THE JOB DONE AND CARE ABOUT THE GUESTS?**

During the renovation it was very difficult and frustrating at times. “It is important to understand the tail can’t wag the dog.” The hotel operations are the priority and during any difficult project smart engi-

neers understand the guest is the priority. It is our job to support the business operation. If you alienate your customer base you won’t need to renovate your hotel. ■

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# Department of Energy Phases Out Incandescent Lighting



Since lighting accounts for about 22% of all electricity consumed in the U.S., a switch to more energy efficient lighting will help reduce both the amount of greenhouse gases resulting from the production of electricity and our nation's dependency on petroleum. In an effort to conserve the nation's energy resources, the U.S. Government has passed multiple legislative acts that will affect the use of electrical lighting in hotels, commercial buildings and residences, benefiting both the economy and the environment. The Department of Energy is responsible for interpreting Congress' legislation into enforceable energy efficiency standards. These new standards have the force of law and become effective July 14, 2012 beginning with phasing out the manufacture of energy inefficient incandescent bulbs and some halogen and linear fluorescent lamps.

**What do DOE's energy efficiency standards say and how will it affect you?** Between 2012 and 2014, standard A-line 40- and 100-watt incandescent light bulbs

***These new standards have the force of law and become effective July 14, 2012...***

must use 30% less energy, but produce the same light output as the incandescent bulbs most of us use today.

**What does this mean for you?** While you won't be required to throw out your existing bulbs, you may be surprised when trying to find the same replacements at the store. Af-

ter 2012, you'll find that these bulbs will have to be replaced with energy-efficient options, such as Halogen, CFL and LED light bulbs.

**How much energy can energy-efficient lighting really save?** The most common alternative to incandescents used today is the CFL. While the upfront investment is more for these bulbs, the cost is more than offset in money savings and product longevity.

### Incandescent A19 Lighting Legislation

The standard A19 incandescent bulb can no longer be manufactured for sale in the U.S. based on the following schedule\*:

§ January 1, 2012: 100-watt

§ January 1, 2013: 75-watt

§ January 1, 2014: 60-watt, 40-watt

Retailers and distributors may still sell these bulbs until their inventory is exhausted. Lamp manufacturers may also sell off their existing inventory. Consumers may continue to use existing incandescent bulbs. Most specialty and decorative lighting sources are not regulated and will continue to be sold. Note: The State of California will begin their phase out schedule one year earlier.

### Reflector Legislation

In addition, all incandescent R20, R30, R40, BR30, BR40, and BPAR reflector bulbs must meet halogen efficiency levels except:

§ Lamps rated at 50 watts or less that are ER30, BR30, BR40, or ER40

§ Lamps rated at 65 watts that are BR30, BR40 or ER40

§ R20 incandescent reflector lamps rated 45 watts or less

### Linear Fluorescent and Halogen Legislation

The Department of Energy announced new efficiency standards for linear and U-shaped fluorescent lamps and halogen PAR lamps. The new standard will become effective on July 14, 2012 and will implement lumens per watt (LPW) regulations

for linear fluorescent and halogen PAR lamps. The new regulations will affect the following fluorescent and halogen bulbs\*:

§ All standard 4-foot T12 bulbs eliminated

§ Most 8-foot T12 bulbs eliminated

§ Some 4-foot T8 bulbs eliminated

§ All standard halogen PAR38, PAR30, PAR20 bulbs within the 40 watt – 205 watt standard eliminated

§ No changes for T5 bulbs

There are exclusions to each of these regulations. The regulation dates are when the products can no longer be manufactured. Inventory built prior to the cut-off date can still be sold. Information is subject to change.

### Legislative Background

The Energy Policy and Conservation Act of 1975 (EPCA) established an energy conservation program for many consumer appliances. The Energy Policy Act of 1992 (EPACT) amended the EPCA by setting minimum lamp efficiency standards for some general service fluorescent lamps and incandescent reflector lamps. The Act also gave the Department of Energy (DOE) authority to write new standards or amend existing standards if they were warranted. On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. The Energy Independence and Security Act of 2007 is an energy policy law that consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy. Among its many provisions, EISA implements new efficiency standards for certain incandescent lamps and directs the Department of Energy (DOE) to undertake new energy conservation standards rule-making for incandescent reflector lamps and general service fluorescent lamps.

### Notice of Proposed Rulemaking (NPR)

The original NPR by the Department of Energy's Office of Energy Efficiency & Renewable Energy was published in the Federal Register April 13, 2009. To view the NPR;

See: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/pdfs/fl\\_incandescent\\_stdts.nopr.pdf](http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/fl_incandescent_stdts.nopr.pdf). ■

# How to Evaluate and Explain ROI for HVAC Equipment

By Marc Rouse

Distributor Development Manager

Capstone Turbine Corporation



HVAC (heating, ventilation, and air conditioning) systems have a greater impact on guest comfort than any other building system. While guests won't tolerate a stuffy room, lodging managers can't afford

unsatisfied customers and unruly costs derived from inefficient energy generation. Taking action to upgrade HVAC systems in today's hotels and lodging facilities can help cut energy costs and improve guest comfort—thus increase profit.

HVAC upgrades provide several benefits for hotel operations, including enhanced guest comfort, decreased energy consumption, higher reliability, longer equipment life, and overall cost reduction. Additionally, HVAC systems provide many options for increasing energy efficiency – programmable thermostats, room occupancy sensors, variable speed blowers, low pressure-drop air filters, and high efficiency chillers and boilers. The most energy efficient systems are combined heat and power (CHP) and combined cooling, heating, and power (CCHP) systems that combine an electric generator with a heating or heating and cooling system that uses the generator's exhaust heat to provide extremely high fuel efficiencies, thus

er property upgrades and improvements.

The effective and simple ROI model for HVAC upgrades shared in this article will help decision makers better understand and trust ROI information commonly provided by equipment suppliers.

## Evaluating ROI for HVAC Equipment Using Payback Model

ROI is a performance measurement that evaluates the profitability of an investment. It is calculated by dividing the money returned on an investment (savings or profit) by the cost of the initial investment. ROI is calculated and expressed in many ways; different investment types use differ-

nificant up-front capital costs (equipment and installation) and value of the capital equipment depreciates over time (equipment life). A payback model compares the total cost of an installation against the predicted cost savings, calculating how many years it will take the installation to pay for itself. For example, an HVAC system with a "payback of 4.5 years" means the system will have saved enough in energy or maintenance costs over 4.5 years to cover the initial cost of the install. Most likely, the life of the HVAC system will exceed its payback period, so from the breakeven point forward, the installation continues to generate savings. At this point, savings can be viewed as profit in the form of decreased

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***“Most likely, the life of the HVAC system will exceed its payback period, so from the breakeven point forward, the installation continues to generate savings.”***

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ent models, and calculations can become more complicated when more variables are considered, including tax rates and risk.

For simple investments, such as a savings account, the ROI represents the percentage yield on the savings account. Using a simple percentage ROI allows decision makers to compare multiple investment alternatives to determine what option is most suitable for their application.

operating expenses.

Payback ROI also can be expressed as a percentage yield on the capital investment, which is very useful for situations where an investor has the option of placing this money in an alternate investment (property purchase, advertising campaign, savings, etc.), as it allows various investment types to be compared.

HVAC upgrades often are required for more than just financial reasons. The payback model is the easiest tool to calculate other upgrade advantages – taking credit for extended equipment life, reduced costs from increased efficiency, and reduced operating and maintenance costs. For example, the payback model can justify the purchase of more expensive HVAC systems by proving how higher upfront cost provide a faster payback or better economics in the long run. For a limited facility upgrade budget, the projects with the fastest payback should be captured first.

**How to Estimate the ROI of Your HVAC**  
Regardless of the sophistication of the

---

***“More efficient HVAC systems can reduce enough costs to completely pay for the upgrade, and then continue to provide significant annual savings over time.”***

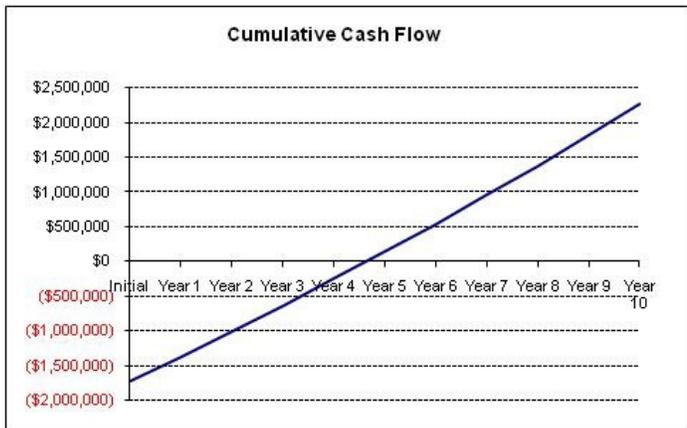
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opportunities to reduce energy costs for building climate control.

While most HVAC upgrades can be justified by improved reliability and promised guest comfort advantages alone, in many cases, return on investment (ROI) of HVAC system upgrades actually outperforms oth-

This article will explain the simplified model for the purpose of understanding how to evaluate ROI of an HVAC investment to compare it to other investment options.

The payback model is most commonly used to express ROI of an HVAC system because these systems typically have sig-



tures. These variables are highly dependent on equipment location and local programs.

The calculator produces a project payback and a ten year IRR (internal rate of return). IRR is a very useful metric when considering the best way to allocate discretionary investment dollars by allowing various investment types to be compared side-by-side as simple expected investment yields.

Using the provided tools to evaluate the ROI of HVAC equipment, it is realized that upgraded HVAC and energy saving systems often provide the highest ROI. Using these steps to evaluate investment options, the lodging and building management industry should better understand how upgrading HVAC systems is a worthy means to reduce energy consumption and costs, and make guests more comfortable. ■

HVAC technology used, the ROI calculation follows the same philosophy.

Variable speed blowers, which provide quiet and efficient operation, are a simple HVAC upgrade with energy savings that exceed initial cost. A simple calculation to determine the payback period on a variable speed blower upgrade would consider:

- variable speed blower upgrade cost
- energy cost
- hours of use per day

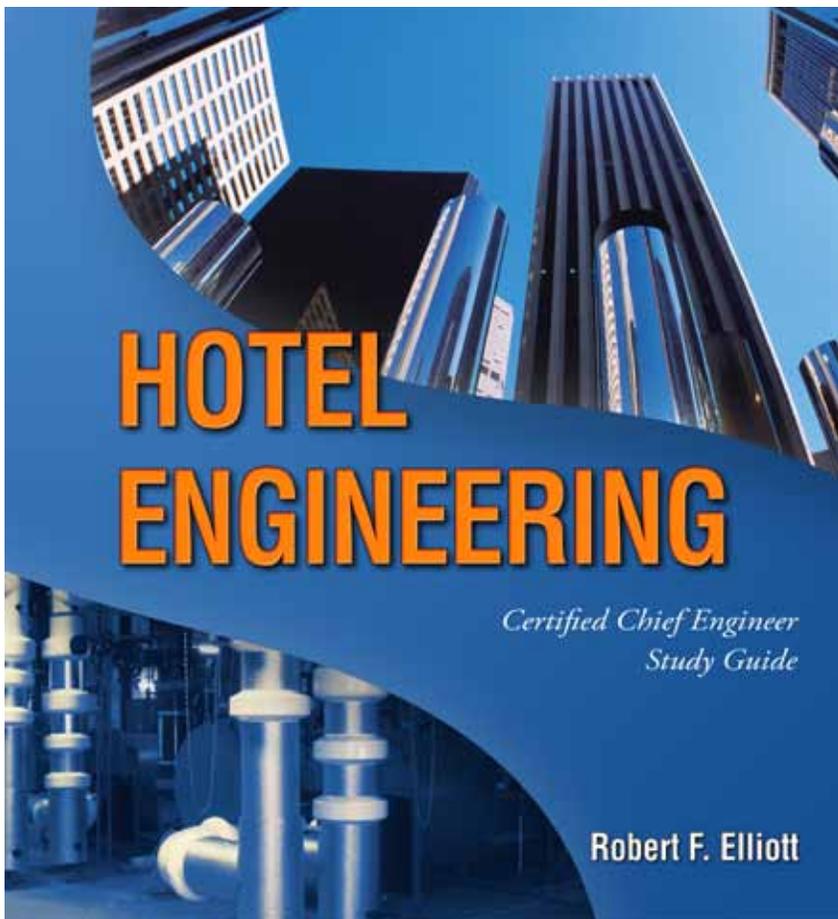
Assuming the variable speed blower uses 80 percent of the energy that the older blower used, energy savings of about \$7,300 a year for a 17,000-square-foot facility would be expected. To calculate the simple payback period, divide the installed system cost by the yearly-expected savings, which provides the number of years it would take for the investment to pay for itself. The additional years of the product life multiplied by the yearly savings are increased profits on the facility's bottom line in the form of reduced expenses.

**Economic Calculators to Evaluate ROI**

Many HVAC equipment manufacturers have developed sophisticated ROI calculators. These calculators generally are very accurate and trustworthy if the customer is aware of the assumptions used in the calculations and agrees they are reasonable. It is necessary for decision makers to review and agree with the assumptions used in payback and ROI calculations to ensure the expected cost savings will be realized.

Capstone Turbine Corporation's proprietary Economic Calculator models fuel cost; costs and savings as total installed cost; operation and maintenance cost; energy and heat savings due to onsite generation; and value added for reliability.

Additionally, this calculator can incorporate investment tax credits, emissions credits, depreciation tax benefits, and various electric rate tariff struc-



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# Helping Hands of International Visitors

By Manny Higazi



I would like to take the time out of our focused engineering articles and write about others that contribute to making things happen in our hotels. Recently our hotel, the Crowne Plaza hotel, participated in what it is called work study program for international students. They come from all parts of the world to USA for the summer. This program helps to give them an inside scoop of working for a company in America. These students in this program accept job offers from many American company sponsors, from McDonalds, retail stores, hotels and many more opportunities. They work and make a living like everyone else and also pay their rent with roommates nearby their work place.

I would like to speak about my property and our visitors. We had 7 Russian students. Their names were Zoya, Azniv, Tonya, Natalia, Asiyat, Ksenia and Andrey. The 6 girls worked in housekeeping and Andrey work in banquets. They have had studies on the English language and understood how to speak and write. Their contribution and timing of their arrival has helped the hotel move forward. Our occupancy at the time was high and the demand for their services has kept them busy. Their experience working here at our hotel has taught them a lot about hotel operations and respon-

sibilities. We tend to not give recognition on who has been contributing to the success of businesses. We should all keep in mind it is not just the American people that make it happen here in America. Our Russian friends have played a big role. Three out of the six girls Zoya, Azniv, and Tonya, as well as Andrey, I got to know more because they are good-natured, warm persons who asked so many questions. Many times they needed to define American English words when trying to explain their thoughts. In turn I managed to learn some

was from Volgograd. I myself can say I have learned a lot working with them because they have re-educated me about what Russia is all about. My thoughts of Russia was something like a cold place with bad weather. Now I know that there are many different places in Russia that have different climates in different regions. Keep one thought in mind, if you get the opportunity to have these special visitors come to your property make them part of our family, they are here to learn, explore, and take part in wanting to know about our

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***“We should all keep in mind it is not just the American people that make it happen here in America.”***

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Russian as well. So now I know a lot more Russian words than balalaika, vodka and samovar.

Azniv and Zoya (Zoychi) are from Krasnodar (Black Sea Coast). Their studies back at their home university Academy of Marketing and Social-Informational Technologies was translator for English and Spanish languages. Zoya also took up studies on Salsa dance classes with her club Salsa Pa-Ti with instructor Roman Kuleshin, to put a little mix in the Spanish language she studied. Tonya was from Moscow, her studies was on economics and Andrey

way of life as well as an education on business and work relations. Zoya made it a constant reminder to me that there are no polar bears in Krasnodar. Their program concluded at the end of summer and they have returned to their native land. We wish them good luck and who knows they might return to explore more opportunities here in America one day. Many businesses look forward to the next bunch next summer and are proud to be able to give this educational opportunity to students who seek to learn and explore the American world in which we live in. ■



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## UPCOMING INDUSTRY EVENTS

### National Association of Hotel & Lodging Engineers

Dec 8th, 2011 12:00 PM

GE Presents "Federal Energy Legislation Affects Hotel Lighting Products"

Luncheon Sponsored by Grainger

Madison Hotel

Washington, DC

### Puget Sound Hotel Engineers Association

Dec 8th 2011, 5:30 PM

Westin Hotel Seattle Holiday Party

Jan 19th 2012, 5:15 PM

Westin Hotel Seattle

Feb 23rd 2012, 5:15 PM

Doubletree Suites Southcenter

### Hotel Engineering Association (Houston)

Dec 21st, 2011

Christmas Party

To be announced.

### Greater Philadelphia Hotel Engineer Association

Dec 12th, 2011

Scholarship & The Heart of Philadelphia Annual Awards Luncheon

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## ADA Compliancy Required!

New regulations affect your signage in commercial facilities as well as state and local government buildings

Coinciding with the 20<sup>th</sup> anniversary of the Americans with Disabilities Act, new ADA regulations will soon take effect. And, while a probationary period has been allotted for buildings to get in line with the new regulations, facility owners and managers will need to begin the process of seeking compliancy soon in order to avoid fines.

And, while fines are a good motivator in getting you in line with new ADA regulations, compliancy is also important in order to better serve your customers. Fifteen million Americans are blind or visually impaired and 21% of those identified are ages 65 and older. With an aging population, this number is likely to increase. ADA signage is greatly needed in order to assist impaired persons with wayfinding and identification.

### **What do you need to know about signage updates?**

There is a lot of paper work to thumb through to get a handle on the new regulations in order to become ADA compliant. But, we've done the leg work for you! Here's what you need to know right now.

- **Mounting location and height** – Signs must be installed on the wall adjacent to the latch side of the door or the nearest adjacent wall. Mounting heights are 60 inches above the finish floor to the centerline of the sign. Note: your signage should



be mounted so that a person may approach within 3 inches of the sign without encountering protruding objects or standing within the swing of the door.

- **Finish and contrast** – When choosing colors and finish for your signage, go with a matte or other non-glare finish. Furthermore, signage characters must contrast with their background with a minimum contrast of 70% – either light letters on a dark background or dark letters on a light background allowing for clear visibility.
- **Raised and brailled characters** – The regulations have expanded for raised and brailled characters. New regulations require characters to be raised a minimum of 1/32 inches, upper case, sans serif or simple serif type and should be accompanied with Grade 2 Braille. Raised characters shall be at least 5/8 inches high, but no higher than 2 inches.

*Information provided by: [access-board.gov](http://access-board.gov).*

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