COVER STORY

Staying Sustainable

From guest demands to dolphin tanks, hospitality facilities face challenges going green. Here's how FMs make it work

by casey laughman, managing editor

At the Mirage Hotel and Casino in Las Vegas, 100 degree days are common and below freezing nights are not out of the question, so the building systems have to be able to handle extreme temperature swings in an efficient manner.

With more than 3,000 guest rooms, the hotel places a wide range of demands on the HVAC, hot water, and lighting systems at any given time. Gaming commission regulations also require robust, reliable lighting and security systems on the casino floor, which in turn draw heavily on an overworked electrical grid in a city carved out of the desert.

And then there s the dolphin tank.

At facilities such as the Hyatt Regency Pier 66, changes in sustainability programs were often brought about by guest interest.

A dolphin tank that must be kept at 72 degrees is one of the challenges the Mirage Hotel and Casino in Las Vegas faces in its energy-saving efforts.

PHOTO COURTESY MGM MIRAGE

"We have 2 million gallons of water out there and we've got 10 dolphins swimming around," says John Leslie, manager of energy and automation, MGM International. "We have to keep that water 72 degrees, and it has to be 72 degrees if it's 120 outside and it has to be 72 degrees if it's 20 outside."

Guest Comfort

While not every facility manager or energy manager in a hospitality facility has a dolphin tank to deal with, sustainability challenges overall are similar in those facilities. Guest comfort has to be a priority, so there will always be a certain amount of energy and water that can't be saved without telling guests they can't crank the thermostat down as far as they want or take an endless shower. But that doesn't mean there aren't improvements that can be made, and many big-name hotels have ongoing sustainability efforts that focus on efficiency in a way that boosts the bottom line while still fulfilling their primary mission.

The No. 1 consideration for a hospitality facility is to keep guests happy, because energy savings don't matter if nobody's willing to book a room. So, when setting up systems to account for times that guests are not in the room, hotels have to be careful not to go too far, says Lenny Jachimowicz, vice president, engineering, Marriott International.

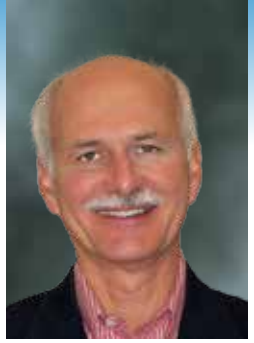
"If you set back five degrees, that's probably too much," he says. "We want to make sure we're saving energy and we're prudent about that; at the same time, we're balancing that with customer comfort. We have learned that's not the best place to be over-aggressive, so we may take a two-degree setback instead of a four or five," even if it costs a little bit more in energy.

One way to account for the impact of guests is by tracking the times when they create the most demand. In many hospitality facilities, there are dramatic spikes at certain times of the day. By building those into planning, a facility manager can provide what is needed gradually instead of having to ramp up quickly, says Randy Gaines, vice president, engineering, housekeeping, laundry operations, Hilton Worldwide. "We know the peaks and valleys," he says. "We know that everyone gets up at 7 a.m. and they take their shower and we need hot water then."

Guests can sometimes help drive positive change as well, says Brigitta Witt, vice president, corporate responsibility, Hyatt Hotels and Resorts. As other hospitality companies do, Hyatt offers the option of not having towels and linens washed every night, something that guests often asked for.

"When we didn't have a global program like that in place, we would actually get feedback from our guests saying 'we

Randy Gaines
vice president, engineering, housekeeping, laundry operations, Hilton Worldwide



Lenny Jachimowicz
vice president, engineering, Marriott International

Bob Holesko
vice president, facilities, HEI Hotels and Resorts

Brigitta Witt
vice president, corporate responsibility, Hyatt Hotels and Resorts

don't want to have our sheets changed and our towels changed daily,'" she says.

Tracking Usage

Over the last few years, much of the industry has moved from words to action, says Bob Holesko, vice president, facilities, HEI Hotels and Resorts, which manages 43 hotels in 16 states under the Marriott, Starwood, and Hilton brands. As customers and employees have become savvier, simply saying that facilities are sustainable — as long as nobody looks too closely — isn't enough. Hotels have to be able to demonstrate that their sustainability efforts are actually having an effect.

"All the main players have sustainability objectives and programs in place that are valid," as opposed to the "greenwashing" that occurred in the past, Holesko says. "They are stated goals and they're based on measuring the data that's available, so there's no more faking it. You either are reducing your carbon footprint or you're not. You're either benchmarking or you're not."

One of the key changes has been the ongoing expansion of usage of the Energy Star Portfolio Manager program, which gives facility managers the ability to not only track energy use across a portfolio of facilities of different sizes in different areas, but compare those facilities to similar facilities to see how they are performing. As of September 2012, more than 1.8 billion square feet spread across more than 9,000 hospitality facilities was being tracked in the program, giving facility managers an in-depth data set to use for comparison purposes.

"The No. 1 thing I check when we take over a hotel is, 'Are you on Energy Star Portfolio Manager?'" says Holesko. "There's no cost to that program. If they say 'no,' then they have no way to measure their results. If you're not measuring it, if you're not tracking it, you have no way to determine what you're doing."

Tracking usage not only helps identify areas for improvement, but also helps justify investments to improve efficiency, says Michael Bendewald, consultant, Rocky Mountain Institute.

"What you've got to do up front is say 'OK, this is what I want to do in my building. This is the purpose of gathering this data, and this is the analysis I want to do with that data,'" he says. From there, data can also help make the argument for capital spending on something like a chiller by showing the extra benefits from replacing it, even if it's early, Bendewald says.

From a capital standpoint, data doesn't just help facility managers make the argument for a big investment. Smaller, yet still expensive equipment can have a big payoff, says Leslie, but a facility manager has to be able to demonstrate the savings. In his case, peak demand charges in Las Vegas are extremely high, so investing in variable-frequency drives (VFDs) on two of the six chillers at

More Room to Keep Going Green in Hospitality Industry

While the hospitality industry has made great strides in its sustainability efforts over the last few years, there are still opportunities for improvement, says Michael Bendewald, consultant, Rocky Mountain Institute, a non-profit energy consulting firm and think tank. According to Bendewald, the industry spends nearly $8 billion annually on energy costs, but is often limited in how aggressively it approaches efficiency due to concerns about occupant demands.

"People demand services, not energy," Bendewald says. "So the question is 'how can hotels provide the same, or often better, services with reduced energy use?'"

One reason the hospitality industry offers a lot of potential is the similarity in design across portfolios. While there are likely substantial differences in design between a hotel in Manhattan and a hotel of the same chain in Phoenix, for the most part, buildings of the same chain will be very similar. So instead of having to evaluate each building from scratch, facility managers can test strategies and products in one or two facilities, then roll them out across the chain.

"For example," says Bendewald, "perhaps the most energy efficient window type is operable in order to enable natural ventilation during fall and spring months, which saves energy costs as well as improves indoor air quality and guest comfort."

By testing those windows in one or two locations, facility managers can determine if they're feasible across the portfolio without having to test them at each site. Conversely, if operable windows or another tactic don't work in a mild climate, they can be dropped from consideration in more harsh climates.

The Rocky Mountain Institute has been involved in a number of large-scale energy efficiency projects since its inception in 1982, including an in-depth energy retrofit project at the Empire State Building.

— Casey Laughman, managing editor

At the Grand Hyatt Dubai, a 37-acre complex that includes commercial and residential buildings, collecting condensation from air conditioning units and reusing it has led to saving as much as 30,000 gallons of water a day.

the Mirage helped mitigate some of those costs.

"When you start a 1,500-horsepower motor," during peak demand, Leslie says, "you're going to have a $10,000 addition just for that one start."

With the VFDs, the chillers can be started slowly when needed during peak demand times. As Leslie says, if firing up a chiller at full bore is equivalent to flooring your car and using the brakes to control your speed, VFDs allow you to actually manage the acceleration with the gas pedal. That flexibility has led to substantial savings.

"It would normally cost about $1,800 a day to run one of those machines," he says. "By coming up with our own controls and adding this machine to a couple of our chillers, we've been able to save about $20,000 a month off our electrical bill with just two of these machines with drives on them."

Going to Work

While guests sometimes offer new ideas, they come and go constantly, are generally only on the premises for a short period of time, and don't exactly expect to be asked to be part of conservation efforts beyond deciding whether they want their towels washed every night or not. Employees are a constant, and even employees outside of the facilities staff can play a big role, says Gaines.

> Asking employees to focus on the little things like turning off unneeded lights can make a big difference in energy savings.

When it comes to the environment, employees leave a big footprint, Gaines says. "Employees are aware of their footprint and it yields a lot of returns," he says. "As a result, they're watching their fellow employees and holding each other accountable because they understand that every little bit counts."

With employees outside of the facilities department, it's often the little things that make a big difference, such as getting employees in the habit of turning off lights and checking thermostats in unoccupied meeting rooms, as well as having them remind each other to keep an eye out for potentially wasteful use.

A side benefit of involving non-facilities employees in sustainability efforts is the force multiplier effect, Witt says. Every little bit helps, so when employees take these lessons home, it can expand out the effect of sustainability efforts.

"Ideal for us would be if we give a housekeeper the tools to minimize the amount of water that she uses when she cleans the bathroom, then that person in turn goes home and teaches her kids to turn the tap off when they're brushing their teeth," she says.

Holesko also stresses the importance of training employees outside the facilities staff on what they can do to

Hilton's Avenue of the Americas location in New York City uses a vegetative roof as a local complement to the company s nationwide sustainability plan.

help. When he was the chief engineer at the Buffalo Marriott, he would conclude each briefing of a new employee by pulling out a $100 bill and offering it to the employee if he or she could answer "yes" to the following question:

"I would say, 'How many of you, when you left your home or apartment today, left your oven on, your refrigerator door open, the air conditioning cranking and every light in your house or apartment on? Because that's what happens in our hotels.'"

Nobody ever claimed the $100, but the point stuck. By keeping an eye on the lights, turning down — or off — ovens that weren't in use, and not propping open cooler doors, employees with no energy management experience or responsibility could help contribute to big savings.

Balancing Act

On the operations side, facility management staff has a large role to play as well. The first thing they have to do is understand that it is a balancing act when it comes to what guests want versus sustainability efforts.

"You want to continue to give people a comfortable, acceptable shower without sacrificing using more water," Jachimowicz says.

Getting to that point of balance sometimes requires breaking some old habits. The difference between a domestic water temperature of 135 F and 130 F water in a holding tank is a substantial amount of energy use. But when it's ingrained that 135 F is the right temperature, it requires some cajoling to change people's minds, Holesko says.

"We had chief engineers, some of whom had been there five, 10, 15 years, and they were convinced that their settings had to be at this point," he says. "I'd say, 'Hey, just drop that domestic (hot water) two degrees and see what happens.'"

Witt points out that creative thinking can pay off, especially at facilities in extreme climates such as the Grand Hyatt Dubai, a 37-acre complex that includes the hotel, apartments, and conference and business facilities.

"They're using the condensation that results on top of air conditioning units — because it's hot outside and cold inside — and they're putting that

At the Drake Hotel in Chicago, water is served in pitchers instead of bottles and no linens are used on meeting room tables.

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into their cooling towers, and they're saving up to 30,000 gallons of water a day," she says.

Even little steps can make a big difference, Gaines says.

"We used to put bottled water in every one of our meeting spaces. Now we're using water coolers," he says.

Looking Forward

Waste is one area with the potential for big improvement. In many cases, hotels end up throwing out a lot of waste that could have been recycled. The reason is a lack of local support for recycling programs, Jachimowicz says.

"We would move forward with recycling if the local trash haulers had the ability to do that today," he says. "We're recycling at 60 percent of our properties. We'd like nothing better than to get that number up. Short of separating it and hauling it ourselves — and we're not in the trash-hauling business — we're at the mercy of the local haulers."

One way to work around the recycling challenge, Gaines says, is to reduce potential waste brought in the door in the first place. "We eliminated the USA Today," he says. "That's huge. All those newspapers? They're gone.

At the Waldorf Astoria in New York, night and overnight staff walk the hotel with checklists to ensure that lights and HVAC aren't running unnecessarily.

Everybody's reading it on their iPad."

When it comes to future improvements, one of the biggest is continuing to provide engineers and other front-line personnel with the tools they need to track and manage energy and water usage in an efficient manner. While Portfolio Manager has been a big step, Jachimowicz is looking down the line to a setup that allows for not only tracking, but also active participation in facility operations from more experienced personnel to quickly head off potential issues or preventing them from becoming a recurring problem.

"The vision someday is to have a networked operating center somewhere that would be looking at our bigger buildings and how they're performing," he says, "and then letting the operators know, mentoring the operators, training and developing the operators on anomalies that take place so that we can prevent it from happening again." ■

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