

# THE Advisor<sup>TM</sup>

Bringing Buildings To Life Since 1966<sup>TM</sup>

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a  publication



 NATIONAL  
INDIAN  
GAMING  
ASSOCIATION  
**ASSOCIATE  
MEMBER**

FRESH AIR AT TWIN ARROWS | PREVENTING THEFT AT CASINOS | WHEN TRAGEDY SAVES LIVES



# WELCOME



**Dear JBA Clients, Fellow Colleagues and Industry Associates,**

Evolution – when it refers to the process of continually improving the environments people work and live in – is the perfect word to describe what JBA's Trusted Advisors™ have been doing for nearly 50 years.

The evolution of the means and methods used to engineer buildings can change when industry-leading architects introduce dynamic new design methods, when science and technology meet to deliver better ways to improve and protect the human environment, or when life-changing events demonstrate a need for new solutions.

Because our clients bring us some of the world's most complex and creative building projects, whether resorts, casinos, theatres, airports, college campuses or other large multi-use structures, our Trusted Advisors™ must tap their vast history of expertise and life experience to engineer solutions and building systems that meet the requirements of these complex projects. Our Advisors continually challenge themselves by leveraging science and technology combined with their own expertise and experience to engineer more advanced, safer buildings that minimize the impact on the environment and optimize interior environments for those who live, work and play in and around these amazing structures.

In this issue we will look at projects that implement new means to deliver a better indoor environment, see how technology is used to minimize risk, and examine how one terrible event forever changed the way fire protection is engineered for large scale buildings. Through projects and events like these, the professionals at JBA continue to evolve, learning from the past, leveraging their experience and implementing the latest technology when Bringing Buildings to Life™.

Respectfully,

**Jim Gist**  
CSMO, JBA Consulting Engineers

*Jim Gist, an innovative, inspired and forward-thinking executive, joined JBA in 2011 as Chief Sales and Marketing Officer. Jim is responsible for integrating JBA's innovations, sustainability message and exemplary client service philosophy throughout the company worldwide. Jim can be reached at [jim.gist@jbace.com](mailto:jim.gist@jbace.com)*

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**THE**  
**Advisor**™

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**Mathew Meade**  
Drafter/CADD Operator  
Technology  
Las Vegas



*Top: Stephanie Chavez, Jim Gist  
& Brad Geinzer; Bottom-left: Vic  
Sibilla; Bottom-right: Nick Icamina*

## JBA TO ATTEND NIGA 2014

BOOTH NO.1143

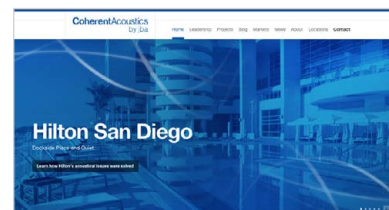
If you're heading to NIGA May 11-14 please stop by the JBA booth to meet two of our Trusted Advisors™, Vic Sibilla and Nick Icamina. As Director of Operations Orange County, Vic has more than 22 years of engineering expertise. Nick Icamina will be attending NIGA this year to consult with our existing clients about the latest in Technical Operations and how to maximize your security and surveillance means and methods. Contact Nick at [nick.icamina@jbace.com](mailto:nick.icamina@jbace.com) to set your appointment today.

JBA has participated at NIGA for the last three years and we have extensive experience in National Indian Gaming Resorts & Casinos, including but not limited to the following:

- Barona Resort & Casino – Lakeside, CA
- Black Oak Casino – Tuolumne, CA
- Dry Creek Rancheria – Santa Rosa, CA
- San Manuel Casino – Highland, CA
- Thunder Valley Casino – Lincoln, CA
- Twin Arrows Casino – Flagstaff, AZ
- Wildhorse Casino – Pendleton, OR
- Choctaw Casino Resort – Durant, OK

## JBA EXPANDS ONLINE

LAUNCHES TWO NEW DISCIPLINE FOCUSED WEBSITES



JBA recently expanded our presence online with two new expertise focused sites filled with extensive details on Fire Protection Services and Acoustics.

For complete details visit:

**COHERENT ACOUSTICS BY JBA**  
[www.coherentacoustics.com](http://www.coherentacoustics.com)

**JBA'S FIRE PROTECTION WEBSITE**  
[www.jbafire.com](http://www.jbafire.com)

### DO YOU HAVE WHAT IT TAKES TO BECOME A WORLDWIDE TRUSTED ADVISOR™?

Be part of something great. Be part of an authentic team of engineers and technologists. Visit the Career page of our website for a list of positions currently available: [www.jbace.com/about/careers](http://www.jbace.com/about/careers) to find out if you have what it takes.





# CLEARING THE AIR

JBA LEADS EFFORT TO IMPROVE CASINO'S AIR QUALITY



## A player survey in the 2013 American Casino Guide listed smoking as one of the top five complaints guests have about casinos.

The guide suggests that in some casinos, “ventilation systems are no match for the ashtray odor.” Given that a large portion of players smoke, operators are reluctant to ban the practice altogether, yet the most state-of-the-art properties work hard to accommodate non-smoking as well as smoking guests.

Such is the case at the new Twin Arrows Navajo Casino Resort outside Flagstaff, AZ. The owners asked if the design team could eliminate the odor of tobacco from the casino floor and the adjoining food court, while at the same time minimizing non-smokers’ awareness that cigarettes are present in the facility.

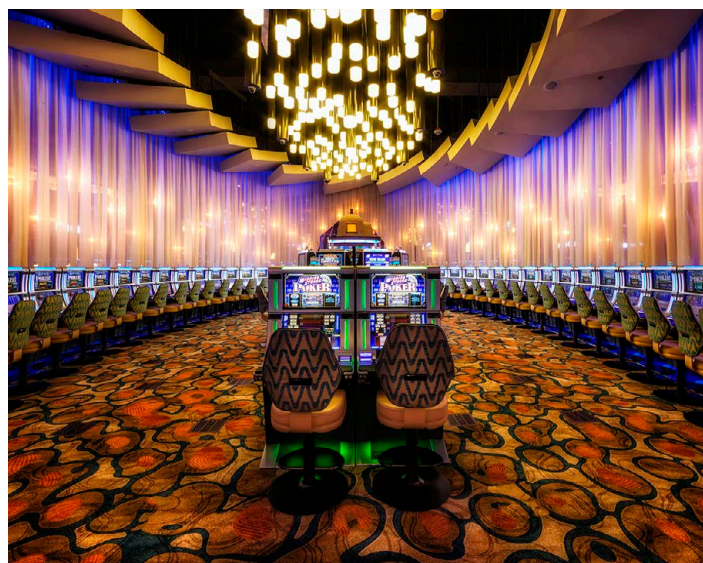
“There really are two distinct concerns,” explains Ron Edwards, the Director of the Las Vegas JBA office and the lead engineer on this project. “Of course, we needed to reduce the smells and contaminants of the smoke as much as possible, but the owners asked us to address the perception of smoky air as well, since it can also affect the comfort of many guests.”

### A Flagship Resort

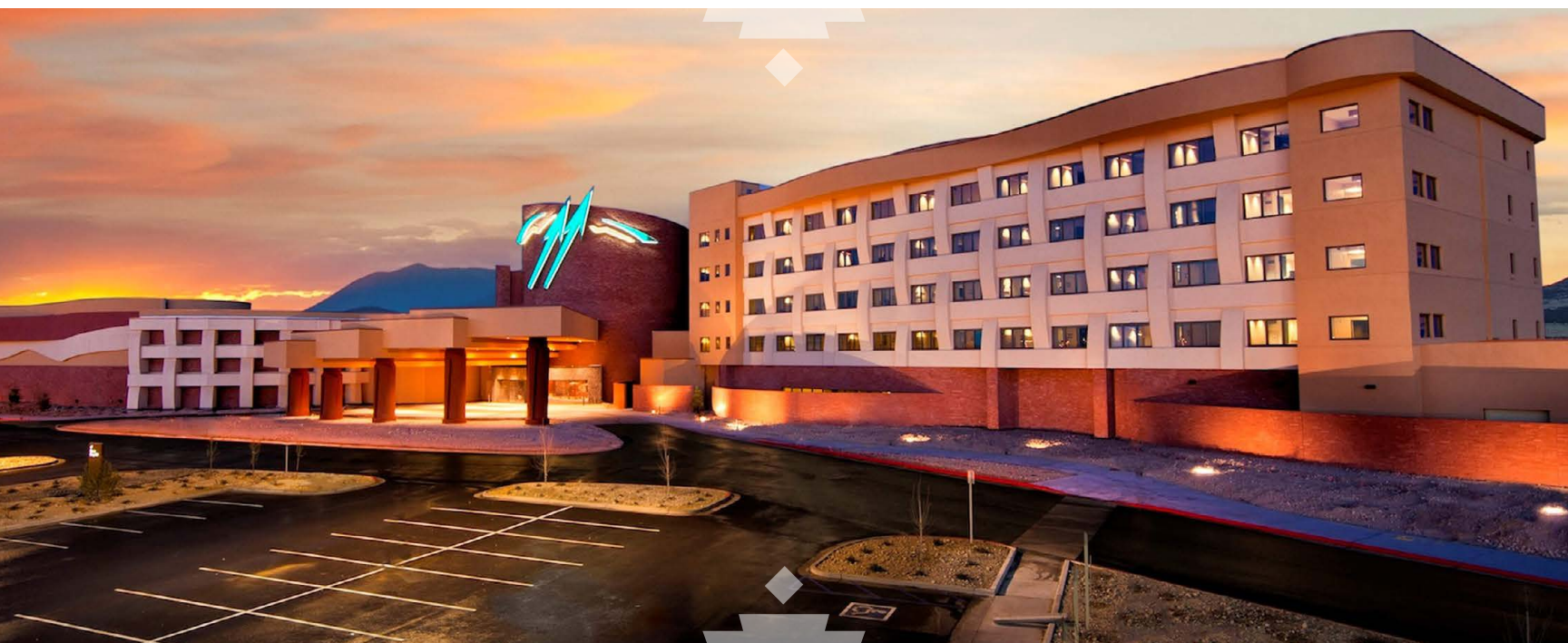
The Twin Arrows Casino Resort is an exceptionally beautiful property that opened last May. The Navajo Nation Gaming Enterprise has worked very hard on its development, and the sleek, contemporary Southwest design that reflects important elements of tribal culture. As with a traditional Navajo Hogan (or home), the casino entrance faces east. The resort also showcases paintings and sculptures from 33 Navajo artists as well as featuring details crafted into the carpet that represent moving water.

The 270,000 square foot resort reflects the latest thinking in entertainment as well. Its casino includes more than 1,000 slot machines, table games and the region’s premier poker room; there are six restaurants including a steak house, seafood bar, food court, cafe, coffee bar and sports bar, plus 90 luxurious sleeping rooms, a conference center, pool and fitness center. A second hotel tower is already under construction with 110 more rooms set to open this spring.

JBA’s Trusted Advisors™ provided BIM, mechanical, electrical and plumbing designs for the property, that features a state-of-the-art air handling and distribution system.







### Air Quality and Sustainability

To address the casino air quality itself, Edwards and his team at JBA provided an underfloor supply air distribution system with exhaust air exiting through the ceiling. "In a traditional system, you have both the air supply and the exhaust registers overhead. Here we set the supply air low and the return air high, thereby taking cigarette contaminants, smoke and the heat from various sources in the room, drawing it up into the ceiling away from the guests and exhausting it outdoors. We also use 100% outside air so that the guests are not indirectly exposed to smoke and smells through a return air system."

In addition to the advantages of increased airflow upward away from the occupants, an underfloor system requires less power for fans, removes most of the heat generated from ceiling-mounted lights before it impacts air conditioning, and turns the floor slab into an active thermal mass, reducing the load on cooling or heating units. One potential problem, however, with any system using 100% outside air is the cost of cooling or heating that air before it circulates through the facility. That was a special concern at Twin Arrows, given that the Navajo Nation had asked JBA to design to LEED and Green Globes energy standards. "We did an initial and operating cost analysis," Edwards explains. "We ultimately concluded that recovering energy through the use of enthalpy energy wheels would allow us to meet both the indoor air quality and the sustainability targets of the owners."

An enthalpy wheel or "total energy heat wheel" is a large, slowly-rotating honeycombed wheel made of energy-absorbing material. The air handling system passes exhaust air and incoming outdoor air through the wheel in opposite directions without cross contaminating the air streams. The warmer airstream rejects energy into the material in the wheel in one half of the rotation, and then it releases that energy to warm the cooler airstream in

the other half. Such systems can dramatically decrease the energy needed to cool hot outside air in the summer or heat cold outside air in the winter.

### Perceptions and Guest Comfort

To address problems of indoor air quality perception, the JBA team worked with the interior and lighting designers to coordinate colors and materials that would minimize the visibility of the cigarette smoke as it is drawn out of the facility.

"The problem, in many casinos, is that the designers use dark ceilings and recessed down lights to provide dramatic effects," Edwards explains. "With the system we were proposing, there would be a tendency for smoke to accumulate just below the ceiling, where it would be highlighted in the cones of light from the recessed fixtures. Thus even with good air quality at the occupied level, the guest's perception is that smoke is billowing throughout the casino and the indoor air is questionable."

The interiors team had created a series of dramatic, Navajo-themed design elements to hang below the actual ceiling and hold the light fixtures. Working with JBA, they perforated these elements, so that smoke can pass through as well as around them on its way up to the air handlers in the upper ceiling. "The key thing is not to allow the smoke to collect in one area that the light is shining through," Edwards says. The ceiling is both dramatic and functional, adding visual impact to the gaming areas while at the same time helping nonsmokers feel at ease.

The owners of the property, the Navajo Nation Gaming Enterprise, are pleased with the finished resort's functionality and beauty, while guests appreciate the opportunity to experience Navajo culture in such an inviting and refined resort. ♦



## MEET RON EDWARDS

JBA Trusted Advisor™



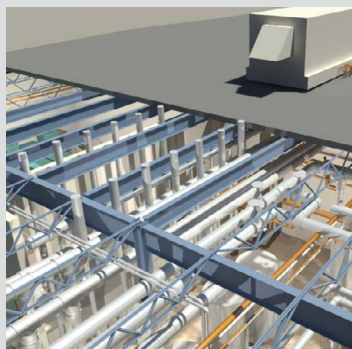
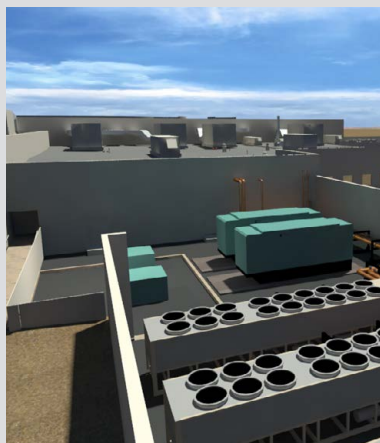
Ron Edwards, the Trusted Advisor™ who served as the lead engineer on the Twin Arrows project, has over 20 years of experience as a mechanical engineer, project manager and project director, including more than four as the Director of JBA's Las Vegas office. Mr. Edwards has been working with Building Information Modeling (BIM) since it first gained widespread acceptance in the construction industry. It was a crucial part of the Twin Arrows designs.

"I enjoyed the chance to consult on this beautiful resort," he says. "The client is obviously very conscientious, concerned about the environment and the health of their guests. Kudos to them for bringing up the smoking and sustainability issues early in our discussions, more than two years ago."

## BUILDING INFORMATION MODELING: TWIN ARROWS

In a project as innovative and complex as Twin Arrows Resort, any tools that help the designers and engineers work more closely together are welcome.

For that reason, the design team used Building Information Modeling (BIM), a process in which the architects create an extremely detailed 3D computer model of the structure, and then the engineers, lighting designers and others all add their systems.



BIM allows a facility's designers and engineers to fit component of the project together in a virtual environment to maximize the coordination of all the active building systems and minimize construction delays. Properly utilized, BIM can increase productivity through the reduction of design conflicts that might otherwise be overlooked before construction.

"For us," Ron Edwards explains, "the main advantage is that BIM allows us to give a better coordinated package to the contractor, resulting in fewer RFIs [or 'requests for information'] and a smoother construction process."



# WHY GAMBLE WITH THEFT

HOW CASINOS ARE  
FIGHTING BACK



It's something every casino owner and operator must face: the element of temptation felt by many players and staff, given the large amounts of cash on premises.

To minimize temptation and to help deal with its aftermath, most casinos employ a large security staff supported by an extensive video surveillance system.

Government agencies also get involved, setting minimum standards for casino security, although in most cases these minimums are exceeded by operators.

Developing a security standard is an art and a science. How can you be sure that your security and surveillance system is adequate to protect your guests, your assets and your staff?

### **Creating A Security Standard**

Nick Icamina, a Senior Project Consultant for JBA specializing in security, says that his first responsibility is to understand and to clarify, as needed, the local gaming regulations. From there, the team will look at the gaming floor, considering cameras, access control and specialized technology.

"We like to start with the money trail," Icamina says. "How does the money get from the slot machines or table games into the main cage and then to the vault? The path the money follows is where you're going to need your highest concentration of cameras." At the same time, the team will start to lay out access control to the cages and money counting areas. "We'll discuss how officers will come in with money, how chips will be distributed, and where we'll put man traps [that is, areas that the agents must enter via card access where they are held until cleared by another agent]."

The next step is to start securing assets such as slot machines, kiosks and digital signage systems. It's important to realize that cameras can protect the casino from disputes as well as from theft. With progressive slot machines, for example, sometimes someone will claim to have hit a jackpot when the machine says he didn't. While it's very rare for the system to make this kind of error, a video record of the machine's changing display makes what happened clear.

That kind of record is crucial with table games. "The minimum we recommend is one overhead fixed camera per blackjack or poker table plus a pan/tilt/zoom (PTZ) camera for every two tables," Icamina explains. "The fixed overhead camera sees the cards as they're dealt, the hands of the dealer, the hands being played and the chips. The PTZ camera allows a surveillance agent to zoom in on a particular player if he has any concerns." Roulette and craps tables will have two or three fixed cameras and one PTZ. "Essentially we want to make sure that every aspect of the game is recorded."

Next are places where guests congregate, the entrances and exits, the lines at the cage and players club, the aisles, elevator lobbies and any kind of steps. "You need to mitigate your costs and liabilities in slips, falls and other accidents as well as theft,"

Icamina says. "If you don't have proper coverage in place, you can leave yourself wide open for false claims."

Once the team has secured the gaming area, they'll start looking at the back of house, including the employee entrances and exits, the loading docks, storage areas, food and beverage, the electrical and mechanical rooms, and the IT rooms. Most of these areas will require card access and installed cameras. "It's impossible to monitor every camera 24/7, but everything is recorded and agents have the ability to switch to any camera or follow people of interest as they move through the property," he explains.



Once the building is secured, the JBA team will look at its exterior. "If it's a tall building," Icamina notes, "We'll place cameras about 10-12 feet above grade on the first level, then more at the parapet for an overview shot out and around the perimeter."

Once the basic design is finished, the team will go over it again looking for gaps in camera coverage, and they expect to review the design periodically as the architect or contractor makes changes in the rooms' designs. "We always highly recommend that the security system consultant be hired for construction administration as well as design, so he can make corrections based on the final layout of the property," Icamina explains. "Sometimes when construction budgets are tight, security is cut because it's not a profit center. That can be a dangerous practice, opening the resort to major losses and liabilities."

### **The Head End and Monitoring Room**

The head end of any security system today is a server room, and so the best security designers are data center designers as well. Since backup power, cooling and ventilation are all crucial concerns, it's very helpful if your security data center consultants have mechanical and electrical teams on staff (as JBA does).

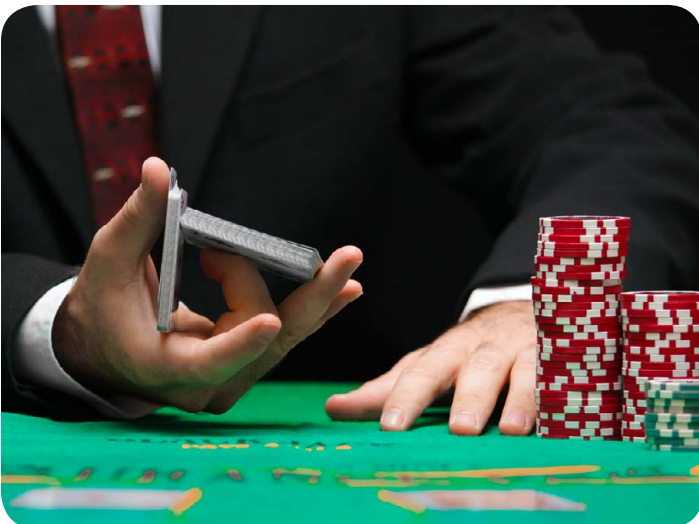
One crucial decision is how long to keep recorded video on hand. Gaming regulators normally require 30 days of coverage on big





## It's helpful to put your security consultant in touch with the architect early in the building design.

- Nick Icamina, Senior Project Consultant at JBA



ticket items including the vault, main cage and soft count, with video of other areas held for 14 days. That being said, many operators want 30 to 45 days of coverage, even upwards of 60 days.

A common pitfall is the space allocated for the server room. "I don't think I've ever worked on a project where the original space allocated was adequate," Icamina says. It's helpful to put your security consultant in touch with the architect early in the building design.

The monitoring room design can be a little trickier than many expect. "There have been a number of well-documented studies on the relationship of ergonomics to the alertness of the agents watching the monitors," he notes. When the security designer is able to work closely with the interior and lighting designers on the monitoring room, alertness improve dramatically. "Most resorts will hire a surveillance manager who understands these issues, but often they will not hire him until the design is complete and out to bid. If that's the case, a company like ours can help optimize these rooms."

### New Technologies

The impossibility of actively monitoring every camera by live agents has prompted the development a number of new technologies. One of the most promising is the development of video analytics software, which looks for patterns in the images coming from surveillance cameras, then alerts an agent in the monitoring room when it sees something that doesn't fit. "Let's say we have a camera trained on the property's perimeter," Icamina explains. "The software will ignore cars or people moving through the parking lot, but if someone climbs a tree, it will draw an operator's attention. In the same way, the software expects an image of a progressive slot machine to show incremental motion on its display. If that changes in an out-of-the-ordinary manner, it alerts an agent."

The technology is relatively new, but Icamina says it can be very useful for certain applications, and it's getting better quickly. "You would not use video analytics to try to monitor a cage or counting room, yet it has the potential to alert a security guard to a theft or an accident that you would normally see only post incident."

He adds that any good system must balance the technology with the human element. "Experienced operators know that an agent who has been on duty for five hours should not monitor the cash collections. Your camera sight lines, your facial recognition or video analytics software, your monitoring room ergonomics, and your access control all have to align with your human resources."

The best security consultants, those who truly are your Trusted Advisors™, know that each and every design is different but have the knowledge and experience to look at them globally. For something this crucial, you need a company that can answer your questions, help you formulate a strategy, and align your needs, your budget and best practices in an optimal design. You need a company like JBA. ♦



## HOW ONE TRAGEDY LEAD TO SAVING LIVES



PHOTOS: LAS VEGAS SUN

### IT WAS THE WORST DISASTER IN NEVADA HISTORY.

On November 21, 1980, 85 people died and 650 were hospitalized in a fire at what was then the MGM Grand Hotel and Casino in Las Vegas. Just three months later, an arson fire at the Las Vegas Hilton took eight more lives.

The State of Nevada acted quickly. The governor appointed a blue ribbon panel to investigate what went wrong. In May, acting on the panel's recommendations, the legislature passed a tough retrofit law requiring that every building taller than 55 feet and each public gathering place of more than 15,000 square feet meet the requirements of the stringent 1979 fire code. Thousands of buildings had to be upgraded.

The law and subsequent code changes have been so effective that there has not been a single life lost to fire in a southern Nevada high-rise since 1981.

The two fires had a profound effect on the engineering profession, prompting an ongoing evolution in fire protection practices. JBA has been a driving force in that movement, starting literally on day one.

# FIGHTING FIRE WITH SCIENCE





## Aftermath of the Fire

Ed Butera, a principal mechanical engineer at JBA in 1980 and today the company's Chairman of the Board, says he was invited to join in a walkthrough of the MGM the day after the fire. "Chief Barrett knew I would want to understand what had worked in the building and what had failed to work," he recalls. "I was astounded by the devastation... One thing I remember still was how there was only one small gallery in the entire casino where you could see any color—and that was the one area that had sprinklers. Everything else was completely blackened."

One of the great tragedies of the disaster was that it was preventable. Because the second-floor casino and the restaurant where the fire began were to be open 24/7, it was felt that sprinklers were not necessary—any problem would be noticed immediately and put out with fire extinguishers or the 1 ½" hoses available in the fire cabinets. But on the morning of November 21, the restaurant was closed. The fire smoldered unnoticed inside its walls then, within six minutes of its discovery, burst out in a huge fireball.

It was also true that, once the fire was raging, the greatest loss of life could still have been prevented. Nearly all of the deaths and injuries were due to smoke inhalation, with most victims trapped in stairwells or on upper floors. The hotel's ventilation ducts and stairwells acted as chimneys to bring highly toxic smoke straight to the top of the 26-story building.

Clark County soon tapped Butera to serve on its retrofit board, which had the task of reviewing upgrades proposed for buildings under the retrofit law. Although Butera was not a fire protection engineer, there were relatively few people practicing that profession in the 1980s. "At that time the mechanical engineering department at JBA designed sprinkler and smoke control systems, and our electrical engineers designed smoke detection and fire alarm systems," he explains. Butera was well known to fire officials, architects and other engineering firms in southern Nevada, and he was recognized as one of the state's foremost authorities on smoke control.

Among other things, Butera wrote the first fire protection report in Southern Nevada, created when the second tower was added to the building that is now Harrah's on the Las Vegas Strip. "This report identified each piece of fire protection equipment, how it met the

building codes and how it functioned, and it listed its inputs and outputs. It served as an installation and programming guide for the contractor who installed the system." This was in 1988, long before such reports were required by the building and fire code authorities.

## The Science of Fire Protection

In 1994, the State of Nevada adopted the Uniform Building Code, the first requiring an engineering approach to smoke control based on extensive experimentation. "As time went on the codes evolved, becoming more clear and stringent as smoke control became a science," Butera recalls. He was the first engineer to design a smoke control system for a mega-resort under these requirements – for the New York New York, which opened in 1995. Because there were no other local engineers able to do so, he advised the Clark County fire and building departments when they tested the new systems at the resort.

Butera and JBA continued to hone their fire protection expertise throughout the 1990s, and in fact they developed fire protection concepts and designed the smoke management systems for a majority of Las Vegas resorts built or remodeled during this time period.

In 2003, Nevada adopted the 2000 edition of the International Building Code, and local jurisdictions sought input from the fire protection community. JBA participated in this process, but Butera and CEO Dwayne Miller began considering adding a separate fire protection division to the company. "There were two firms in town specializing in fire protection, and, since we worked closely with them for many years, we knew their engineers well. We hired our first fire protection specialists, Greg Shino, in 2005, and then in 2007 we convinced Allyn Vaughn, one of the nation's top fire protection engineers, to head our department." Today Shino serves as Technical Director for JBA, while Vaughn is President.

Since 2006, JBA has always had at least one engineer serving on regional fire code development committees. "Clark County always follows the model code that the state adopts, but we see it as a minimum, applying lessons learned from our experience here in Las Vegas," Vaughn explains. "In turn some of our experiences have influenced changes in national and even international fire protection standards."

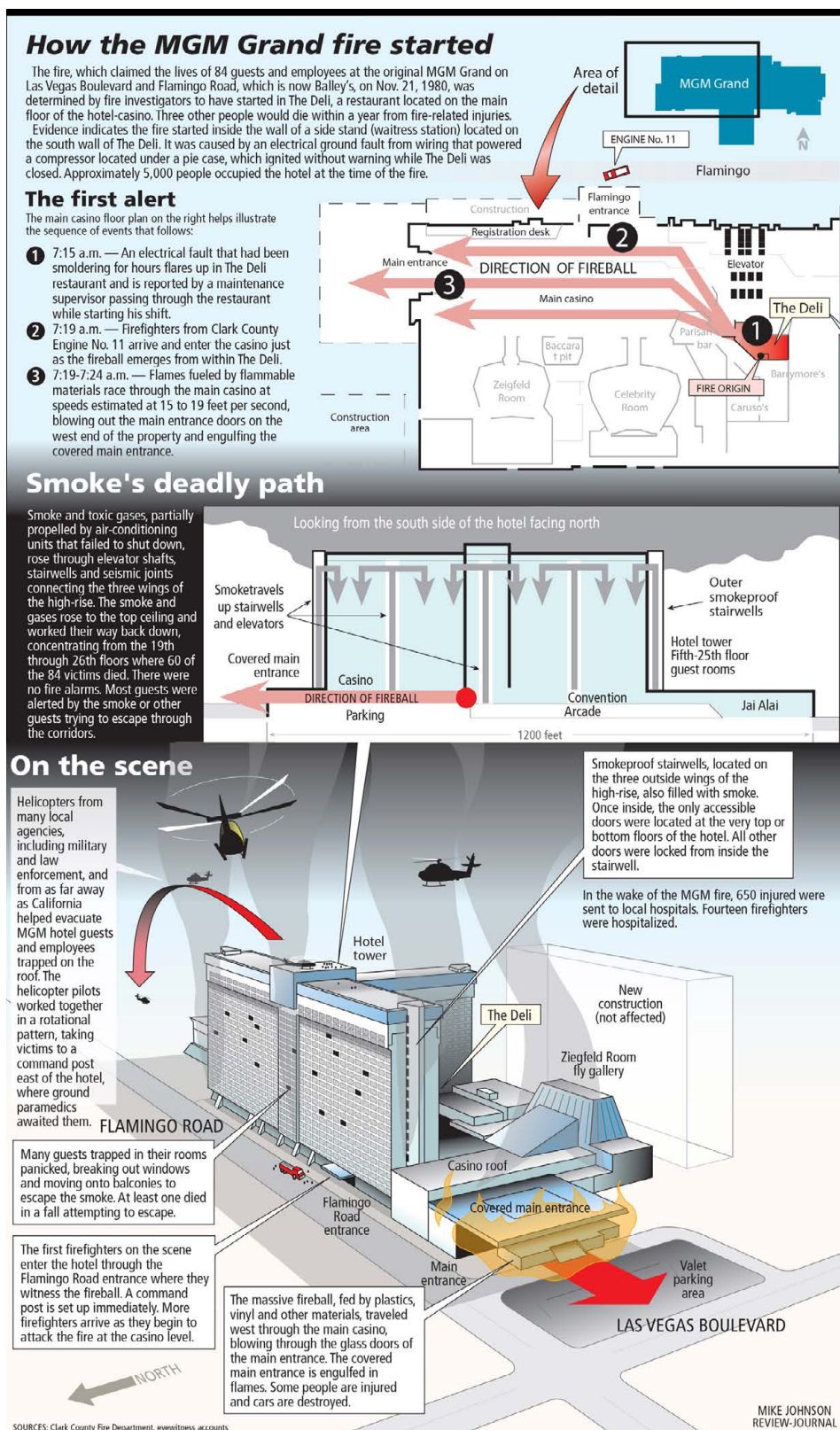


One example is the adoption of Clark County standards in the resort areas of Macau, China. "The Macau code historically has been based on British model codes," Vaughn explains, "but when Western style casinos first came to the area, they adopted many of the standards that we developed specifically for this type of property."

"Today fire and building code consulting is the basis for everything we do," adds Nick Moriarty, current Manager of Fire Protection for JBA Las Vegas. "We read, interpret and apply the code for our clients, helping them design buildings that are safe, timely and cost effective, often providing creative solutions to complex problems of design."

"Life safety is always important," Moriarty explains, "but with the high occupant load we have in our casinos and resorts, it becomes

(continued on page 21)



PHOTOS: LAS VEGAS SUN



# THE EVOLUTION OF FIRE PROTECTION & JBA

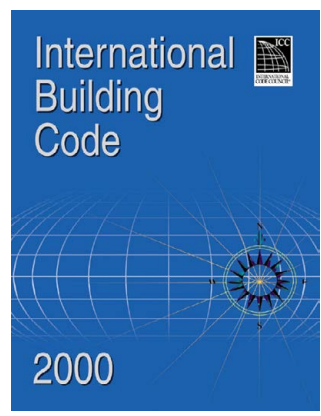


JBA Consulting Engineers founded in Las Vegas.



MGM Grand fire prompts nationwide awareness of the dangers of fire and smoke in high-rise buildings.

An amended 2000 International Building Code adopted in Clark County, NV.

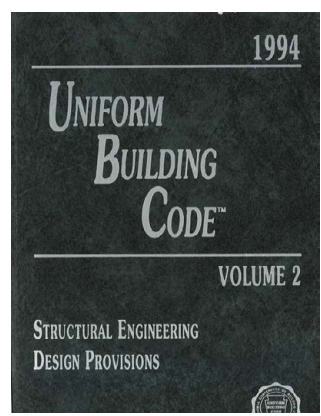


JBA authors the first high-rise life safety report in Southern Nevada, for an addition to the Holiday Inn Las Vegas Center Strip (later renamed Harrah's).

1966 — 1970 — 1980 — 1981 — 1988 — 1995 — 2003

JBA mechanical and electrical engineers begin designing sprinkler, smoke control, smoke detection and fire alarm systems.

Nevada Fire Retrofit Law passes. JBA's Ed Butera serves on the Clark County Retrofit Board.



The 1994 Uniform Building Code is adopted in Clark County, NV, the first UBC edition requiring an engineering approach to smoke control. JBA is the first to engineer a smoke control system and the first to file a high-rise life safety report under its requirements. (The property was the New York, New York Casino Hotel and the high-rise life safety report would evolve into the modern fire protection report.)





Greg Shino joins JBA, and now serves as our Technical Director of JBA Fire - Life Safety Consultants.



JBA expands its expertise internationally into the Middle East and Asia.



**jba fire**<sup>TM</sup>  
life safety consultants



Nick Moriarty joins JBA, and now serves as Manager of JBA Fire - Life Safety Consultants.

JBA Launches JBA Fire - Life Safety Consultants, solely focused on delivering world class fire protection and life safety around the globe.

JBA engineers tapped for code development committees from 2006 – present.

2005 — 2006 — 2007 — 2008 — 2009 — 2013 — 2014

JBA opens its Fire Protection Engineering Department.



Allyn Vaughn joins JBA as Director of Fire Protection.

JBA's Fire Protection Advisors are tapped to oversee many aspects of the life safety and smoke effects for Hakkasan Las Vegas.



The City of Dreams opens in Macau, China, with fire protection consulting by JBA.







# jba fire<sup>TM</sup>

life safety consultants

*JBA's fire protection engineering and life safety services integrate across multiple disciplines to deliver effective and efficient designs. This helps our clients save time and money throughout the development and deployment of their projects. JBA has the expertise and knowledge in this field to meet the needs and challenges of any building design and deploys flexible designs that adhere to life safety and fire protection requirements.*



## ALLYN J. VAUGHN

PE, FSPFE  
PRESIDENT

Fire Protection Engineering

Las Vegas	USA	Exp: 30+ yrs
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Allyn Vaughn has over 30 years of experience in the fire protection industry. Since 2007, Mr. Vaughn has been involved with numerous projects at JBA such as mixed-use gaming, assembly, retail, transportation, education, residential, commercial real estate, education, military and government facilities, health care, and detention facilities. Mr. Vaughn's experience as a project manager has provided him with knowledge of building services, system integration and the associated impact to building architecture and life safety.

Mr. Vaughn specializes in technical and complex designs including:

- Design and Commission of Fire Protection Systems
- Fire Alarm And Detection Systems
- Special Hazard Suppression Systems
- Automatic Sprinkler and Standpipe Systems
- Smoke Control Systems
- Coordinating Building and Fire Code Requirements
- Approved Quality Assurance Testing Agency
- Alternate Methods for Code Compliance



## NICK MORIARTY

PE  
MANAGER OF FIRE PROTECTION

Fire Protection Engineering

Las Vegas	USA	Exp: 9+ yrs
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Nicholas Moriarty brings JBA Consulting Engineers over 9 years of experience in Fire Protection and Life Safety. He is experienced in hotel/casino, residential, correctional and educational projects. Mr. Moriarty's experience as a Fire Protection consultant has provided him with knowledge of building codes, fire protection systems and the integration and application of concepts to building construction. He is licensed in 13 states as a fire protection engineer.

Mr. Moriarty specializing in technical and complex designs including:

- Code Consulting
- Smoke Sprinkler Design
- Sprinkler System Design Including High-Pile Storage Design
- Accessibility Consulting
- Testing and Commissioning
- Passive Building System
- Specifications
- Hazard Analysis
- Completion of Fire Protection Reports





## GREG SHINO

PE

TECHNICAL DIRECTOR

Fire Protection Engineering

Las Vegas | USA | Exp: 16+ yrs

Gregory Shino has over 16 years of experience in the fire protection industry. Working with JBA since 2005 around the country and the world, Mr. Shino has been involved with numerous large-scale, multiple use complex building projects. Working with Code Officials, and local authorities, Mr. Shino applies his knowledge of building and fire codes pragmatically and holistically to achieve the highest levels of fire and life safety meticulously blended with stakeholders' best interests. His international experience includes a wide variety of building uses including, but not limited to high-rise buildings, shopping malls, theaters, concert halls, gaming, residential, academic institutions, government facilities, hospitals and health care, retail, military, high-piled combustible storage facilities, hazardous materials and oil and gas projects.

Mr. Shino specializes in technical and complex design including:

- Coordinating Building and Fire Code Requirements
- Automatic Sprinkler and Standpipe Systems
- Smoke Management Systems
- Fire Detection and Alarm Systems
- Fire Pump and Water Storage
- Hazardous Analysis



## MICHAL TURCZYK

PE

PROJECT ENGINEER

Fire Protection Engineering

Las Vegas | USA | Exp: 7+ yrs

Michal Turczyk brings to JBA Consulting Engineers extensive design, testing and consulting experience for fire alarm, suppression and smoke control systems. His responsibilities include coordination with contractors, architects, and other engineering disciplines, production of contract drawings and construction administration, and assisting in the preparation of smoke control diagrams.

Mr. Turczyk specializes in technical and complex designs including:

- Completion of Fire Protection Reports
- Fire Alarm and Detection Systems
- Special Hazard Suppression Systems
- Automatic Sprinkler and Standpipe Systems
- Smoke Control Systems
- CONTAM and Fire Modeling
- Coordinating Building and Fire Code Requirements
- Approved for Smoke Control System Quality Assurance Testing
- Hazardous Materials Analysis
- Life Safety Analysis of Special Effects for Theaters
- Industrial Life Safety



## EDMOND CHAN

RPE, MSc, CEng, MIFireE, MCIBSE, MHKIE, BEng (Hons)

ASSOCIATE DIRECTOR

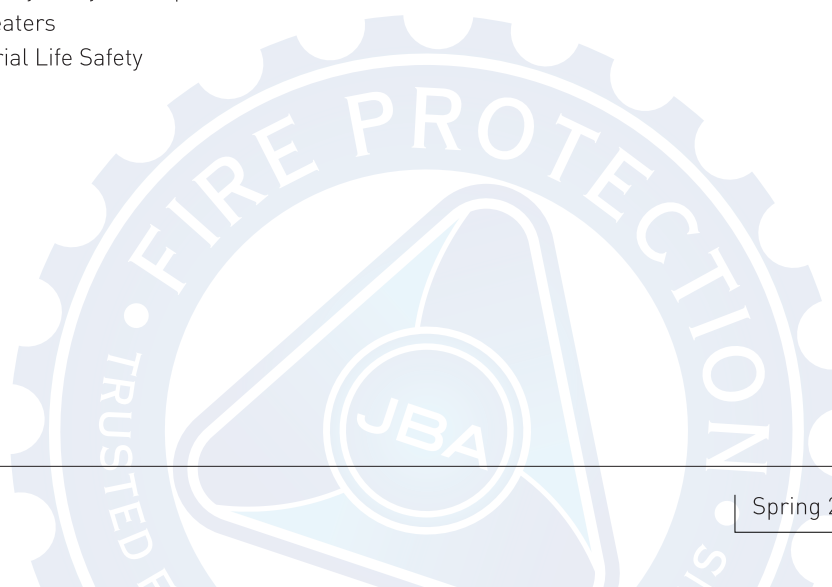
Fire Protection Engineering

Macau | Hong Kong | Exp: 20+ yrs

Edmond Chan has over 20 years of engineering design and field experience that includes government public works, commercial and educational facilities. Since joining JBA in 2007, Mr. Chan also has extensive experience in hospitality and gaming developments.

Mr. Chan specializes in technical and complex designs including:

- Fire Protection Systems
- Fire Engineering Designs
- Wet & Dry Fire System Design
- Foam/Clean Agent Gas Extinguishing Systems
- Kitchen Suppression Systems
- Flame/Gas Detection Systems
- Air-Aspirating Smoke Systems
- Egress Analysis Using Steps Evacuation Model
- Fire and Smoke Modeling Using FDS





# THE INSIGHTS OF eSIGHT

While energy usage is the most costly bottom-line expense of any organization, it can often be difficult to monitor and manage. High energy usage not only affects operating costs and corporate profitability, but more importantly, the environment itself. Legislation is pushing for improvement in these areas, and organizations of all industry sectors and sizes are facing the challenges that come with collecting and making sense of their company's energy consumption data.

One of the challenges in implementing change is that many organizations believe it is too difficult to aggregate the energy usage figures from a number of sites or buildings to see where high energy consumption, or even waste, lies. As a company starts to look at implementation of an energy management solution, they may find numerous data collection tools installed throughout your facilities, including sub-meters, smart meters, data loggers, or multiple manufacturers of building automation systems. This causes two separate issues:

- *Multiple energy systems on-site make it hard to see the “big picture” of how energy is being used, and how those costs impact the organization*
- *Companies may struggle to understand the process for aggregating this data into a single energy management solution, one that allows them to fully comprehend all facets of their corporate energy usage and the cost impact.*

*“eSight gives organizations the tools to reduce both [energy] consumption and costs.”*



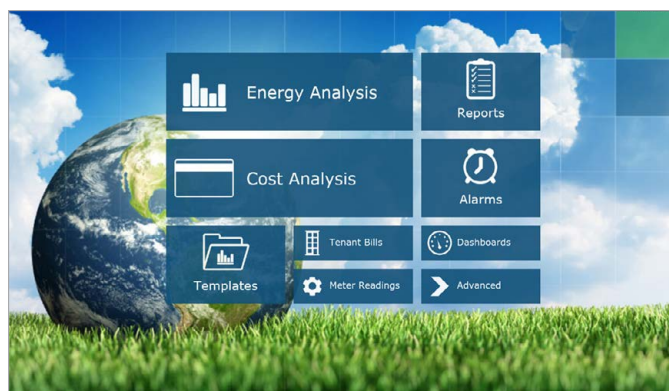
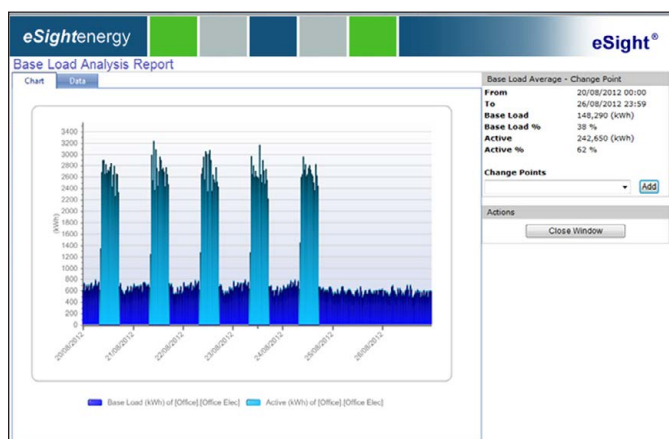
For global organizations, there are even more challenges to face. They must find ways to integrate data from international systems at global site locations, as well as coping with multi-lingual, multi-currency requirements. Building managers looking for the next step after installing BAS, or meter installation, turn to energy management software (EMS) solutions, to provide the tools to make sense of their data and solve the two primary problems listed above.

Understanding what types of utilities they need to be monitoring, as well as what other pieces of data may affect your energy consumption on a daily basis. This kind of clarification is critical in becoming more energy efficient.

The next challenge companies face is establishing an energy baseline which can serve as a starting point for setting goals, and creating a comparison point for assessing future efforts and trending overall performance.

Energy management software, such as eSight, can simplify the beginning-to-end process of collecting data and pinpointing a baseline of energy consumption, ultimately identifying where savings can be achieved. Developed by eSight Energy, eSight gives organizations a tool to view, monitor, and analyze energy usage to reduce both





*Photos: Configurable dashboards allow users to bring together essential energy information in a simple, clear and dynamic format. Opposite, eZdash, an Interactive Touch-Screen Dashboard is one of two dashboard options available; Top & Center, Facilities Dashboard enables users to bring together energy information, charts or tables on a single screen.; Bottom: Express Homepage example.*

consumption and costs. To fully understand exactly what a company's facilities are consuming, eSight is able to not only gather data from utilities such as steam, gas, water, and electricity, but any other factors and meta-data that can affect the company's energy expenditure.

This means that eSight can take into account things like demand, production values, weather data, building occupancy levels, square footage, and utility bill information. eSight also offers a distinct advantage to multi-national corporations in that it is a multi-lingual, multi-currency solution. In today's world, where data has to be available from anywhere and anytime, eSight facilitates this necessity with a solution that can function securely over the corporate intranet, internal networks, or the internet and is already being used in over 30 countries around the world.

The unique and easy-to-use design of eSight allows for data to be managed from a single, central location, and accessed from any internet browser or smart device around the globe. Unlike most energy software solutions, eSight can be hosted by eSight Energy or installed to the site within an organization's own firewalls—a must for many clients who wish to manage their own security. This option is particularly useful for government, financial, and pharmaceutical clients who require unique levels of privacy for their sensitive energy usage data.

The system is scalable, allowing it to fit the needs of companies of all sizes. It can also be customized to grow with the company as its needs evolve. eSight Energy understands that not every organization has a full staff of Energy Managers who can configure and run the system with extensive understanding of energy management. To alleviate this issue, eSight has two user interfaces to cater to advanced and novice users alike. Advanced users have full administrative rights and can utilize eSight to manage full responsibility for energy savings. For novice users, eSight Express allows access to view a simplified, wizard-driven version of eSight that will create graphs, run reports, and set alarms for the key areas in which they work or manage energy goals.

Energy management software is a tool that every industry can benefit from. Whether you're in an industrial manufacturing organization that's trying to reduce its energy consumption and costs, or you're an energy services company offering eSights to clients, EMS is a cost-effective solution that can be implemented to deliver quick ROI for everyone. Saving energy, costs, and reducing carbon emissions by setting and achieving targets with energy management software can be the key to an organization's corporate sustainability success. For more information on eSight Energy, visit [www.esightenergy.com](http://www.esightenergy.com) ♦

## ABOUT

eSight Energy specializes in developing the leading global energy management software, which helps organizations reduce energy consumption, costs, and carbon emissions up to 30%. Whether you are a small business looking to manage data from a single building, a global organization looking to fulfill Corporate Sustainability targets, or an energy services organization looking to manage energy data for clients, eSight has an option for you!





## JAMES SCORSONE

Manager Security and Surveillance

**"Eagle Eye"**

Las Vegas, NV

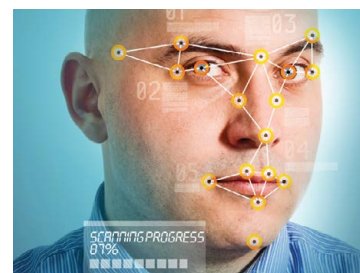
# Q A

### Does facial recognition really work?

It's getting tougher and tougher to be a criminal these days. Facial recognition systems are here and they can work well if you set up your system properly.

For example, casinos in Las Vegas have long needed to exclude people known to be members of organized crime or known to be advantage players. Years ago they depended on "black books" of photographs, asking security staff to study those images so they could recognize certain individuals as they walked into a facility. Today, however, most properties use automated systems to identify those who might put people or property at risk.

Three conditions must be met if facial recognition is to work well: you need high quality cameras, very well lit areas and a clean, unobstructed shot of each person the system is trying to identify. The best places to set up are at the entrances to your facility or at any choke point where people must file one by one or two by two past your cameras.



#### There are three technologies most often used in facial recognition systems today:

- The first is a relatively simple vector approach, which reduces facial features to a series of coordinates including the ratio of the height versus the width of the face and the position of and distance between the eyes. Most often this technique is used to quickly find if an individual may be a match to someone in the database.
- The second analyzes up to 80 points on a person's face to more exactly determine if a match is accurate. Those include the width of the nose, the shape of the cheekbones and the length of the jaw line.
- The third analyzes the lines, pores and other features that create the texture of a patch of skin.

In each case, the results are reduced to a number or ratio, making it possible to create a unique numerical code for each individual that can be searched in milliseconds by a computer. If all three technologies are used together, facial recognition can be extremely accurate, yet using one or two can be good enough if your security staff can complete the ID.

Applications include companies who want to alert security that ex-employees may be on premises inappropriately, retail stores who want to keep an eye on known shoplifters, and airports screening for known terrorists. A system was used at the Sochi airport during the last Olympics.

The technology can also be used to confirm the identity of clients at a bank or ATM or of those with security clearance at corporate research facilities, military bases or government offices. These systems can be very accurate because the agency can take its time shooting a clean image for the ID.

Of course, as with many technologies, facial recognition has its critics, who often cite a potential loss of privacy. I don't think it's an issue. The computing power needed to track every citizen all the time would be immense. On the other hand, these systems can be very useful in identifying those few individuals who have a record of trying to hurt, rob or cheat the rest of us. ♦

*Formerly a senior network engineer  
and project lead at MGM Resorts  
International, Trusted Advisor™*

*Jim Scorsone has more than 30 years  
of experience designing and installing  
security systems in casinos and hotels.  
He has a wealth of practical knowledge  
of security and surveillance systems,  
data systems, telephone, MATV  
and fiber optics, including facial  
recognition technology.*

*(Fighting Fire, continued from page 13)*

paramount. If there's a fire here, an alarm is not enough. Whenever a building has more than 1,000 occupants, we require an emergency voice communication system, where someone can give the guests specific instructions."

"In the last 15 years," Shino reports, "sprinkler technology has come a long way. Rigorous testing standards have led to the development of better sprinklers; for example specific hazard sprinklers and single sprinklers that will cover an entire guest room sleeping area." Apart from stair pressurization, smoke control is less of an issue now that high rise buildings are fully sprinklered.

Means of egress are always a crucial consideration in today's mega-resorts. "Some of the projects we've worked on are like small cities, and you need an exit plan for 10,000 people or more," Moriarty says. "Not only are the properties large, but they'll include some quantity of hazardous materials, whether flammable liquids like alcohol or combustible fuels for generators, and then of course the architects are always pushing the envelope on theater, hotel and casino design."

Vaughn adds that "the MGM fire made people aware that fire could spread vertically through buildings, forcing them to put emphasis on protecting vertical openings, shafts and penetrations between floors, as well as designing better sprinkler and smoke detection systems. As the city developed larger, more exciting and more creative resorts and entertainment venues, we had to work even harder to develop stricter codes and tougher standards to keep everyone safe."

It's been a rewarding effort, as the city has built one of the world's best records for fire safety. At JBA, we're proud to have been able to contribute to that process. ❖



## NICK ICAMINA

SENIOR PROJECT CONSULTANT

Technology Design Solutions

New Orleans | USA | Exp: 15+ yrs

## JBA Technical Operations

### NECESSITY IS THE MOTHER OF INVENTION

JBA Technical Operations was born out of necessity. As industry leaders who pride ourselves on being at the forefront of technology, we recognized the importance of expanding our current offerings in Technology Design to meet the more specialized needs of many of our clients.

Through research, teamwork, and one-on-one collaboration with clients, we determined that one of the biggest solutions we could deliver on was the ability to seamlessly integrate technology design with operational needs while still meeting regulatory requirements and best practices. For some clients that process moves forward effortlessly while for others, the concept is either completely new or they've been struggling to manage the demands of growth and need assistance making adjustments or they're seeking a new strategic plan altogether.



JBA Technical Operations specializes in operational assessments, efficiencies, regulatory requirements, technology advancements and strategic guidance. Our team ensures that our clients are aware of the latest in technology offerings, provide guidance to leverage the latest technology, and provide a roadmap for seamless implementation. In addition, we provide owner representation for integrations to secure that the implementation is meeting the client's needs and requirements.

### So, what does this mean to you and how does this apply to your company?

Your architect creates a space, a look, a feel and a presence. Your engineer brings your building to life through system functionality and infrastructure. And, JBA Technical Operations creates the bridge that connects you (as the operator/owner of the building) with your needs and/or requirements, whether that be operational needs, strategic planning, regulatory compliance, owner representation, or best practices. For many clients we are the "translator" between their biggest needs/wants *and* the most trusted process by which they get there.

Whether it is a ground-up project, a renovation, expansion, or acquisition within the enterprise, JBA Technical Operations remains your partner beyond project completion. ❖

*Nick Icamina has over 15 years of experience as a senior project consultant in a broad range of market sectors, but specializes in technology oversight, development, and executive management. Since 2001, Mr. Icamina has served as a senior business operations and technology executive with focus on gaming and resort systems, security/surveillance systems, project management, gaming consulting, operational efficiency studies, physical design and space allocations, and budgeting. He has also managed over 10+ gaming resorts openings both domestic and international. He is also active serving in an advisory role for technology developers/manufacturers. Nick can be reached at [nick.icamina@jbace.com](mailto:nick.icamina@jbace.com)*



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