



## Advanced building technology for one of the smartest sports arenas in the world

When event guests stream into the new Golden 1 Center in Sacramento, California, they'll interact with the nerve center of this smart facility, setting into motion a series of coordinated actions specifically designed to optimize their comfort, safety and entertainment experience.

Lights turn on. Temperatures adjust. Security systems respond. And energy consumption is optimized to manage the most efficient use of resources.

The way the venue reacts to fans on game day is a key part of the owners' vision. In 2014 the National Basketball Association's Sacramento Kings set out to design a 100 percent solar-powered, 17,500-seat venue as the world's smartest arena, taking advantage of the latest in advanced building technology to achieve their sustainability goals.

The owners chose Johnson Controls, the most experienced building-wide systems integration expert in the industry, to create a world-class entertainment and sports venue that is operationally smarter, safer and more sustainable.

Using the *Metasys*® building automation system, the owners were able to connect HVAC equipment as well as security and fire protection on an integrated platform. *Metasys*® provides essential instrumentation and control to help save energy, increase productivity and enhance occupant comfort and security.

## Sports & Entertainment Project AT-A-GLANCE:

Johnson Controls is the Official Building Technologies Partner of the Sacramento Kings.

### Outcomes made possible by partnering with Johnson Controls:

- Operationally smarter, safer and more sustainable
- Grid-neutral
- Enhanced fan experience
- Planned Service Agreement ensures systems are optimized to meet comfort, safety and sustainability goals throughout the lifecycle of the facility
- Driving toward LEED Gold certification



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– Juan Rodriguez,  
Senior Vice President of Arena  
Operations/General Manager,  
Golden 1 Center



## Trusted partner combines local support with global expertise

The collaboration with Johnson Controls was an informed choice for the arena's Senior Vice President of Arena Operations/General Manager Juan Rodriguez. Before joining the Kings organization, he spent the last 23 years at venues including the NRG Park entertainment complex, home of the Astrodome in Houston, Texas. Rodriguez developed a relationship of trust with the local Johnson Controls team. He also toured the Showcase for Building Environments and attended an Executive Forum at Johnson Controls Building Efficiency headquarters in Milwaukee, Wisconsin where he shared best practices with owners, contractors, architects and engineers of other complex facilities.

"I think that was critical for me coming into this project because I knew that Johnson Controls has the local reps, but also the backing and experience of a global organization," Rodriguez said. "It's not just about making Golden 1 Center a smart arena now, but how do we make it smarter, safer and more secure for years to come?"

## Metasys® enables smart integrations for smarter buildings

As Johnson Controls worked with the Kings operations staff, owners and contractors, they identified a number of key strategies for how they wanted the facility to operate.

Golden 1 Center hosts world-class concerts, family and live action shows along with NBA games and other sporting events. Arena leadership realized it was critical that the building automation system keep occupants comfortable and safe no matter how the facility was used. It also had to operate efficiently to meet the owners' goals to remain grid-neutral. The automation of data collection through Metasys® was the solution, enabling support for the development of fan-facing dashboards and interaction used for future planning.

## Johnson Controls Metasys® building automation system met each of those goals

When attendees enter the arena for basketball games or concerts, Metasys® anticipates the impact and optimizes HVAC, lighting and security systems to find the sweet spot of comfort, safety and peak performance. Metasys® also monitors water, gas utilities, automatic transfer switch gear and emergency power generators, allowing operators to respond to alerts about emergency power consumption in the solar-powered facility to ensure optimal operation.

This dynamic feature is especially important given the unique design of Golden 1 Center. The layout is positioned to take advantage of delta breezes blowing in from the Sacramento River. The ground level of the arena opens up with five large, bi-fold hangar doors to capture the free, natural cooling phenomenon. Metasys® positively adjusts HVAC systems when the doors are open.

## The *Metasys*® mobile interface helps staff make better building management decisions

As fans take their seats to focus on the game, the operations staff has the flexibility to roam the facility, using *Metasys*® on their mobile devices to make sure the environment provides comfort and security in all sections of Golden 1 Center.

*Metasys*®' responsive design displays the same information the staff would see if they were sitting at a desktop. They can monitor alerts and take corrective action. This ease-of-use was particularly important to Rodriguez.

"What I didn't want was a system that intimidates the staff and becomes cumbersome. I wanted something that the staff would be excited to use," Rodriguez said. "The staff sees this as a very user-friendly design."

## Tying security into the advanced, smart-building design

Security plays a critical role in any public venue, and the Kings looked to Johnson Controls' expertise to deliver a proven solution. Johnson Controls P2000 security management system ties into *Metasys*® to integrate access controls, video management, alarm intrusion, intercom and emergency phones.

The tight integration means building operators on *Metasys*® can respond to events from P2000. They can view alarm messages, send access control commands and create interlock events.

The focal point of the security system is the Command and Control Center. The room contains six, 60-inch LCD monitors where security personnel can view hundreds of closed-circuit TV cameras positioned throughout the arena. These same cameras are also visible to public safety authorities so they can dispatch a coordinated response in the event of an emergency. Additional public safety systems include emergency response buttons, as well as emergency phone kiosks.

Access control is well-defined throughout the facility. The overall system contains more than 200 access control points and includes over 100 card-access controls doors to ensure safety to all who set foot in the facility. There are also biometric finger scan readers allowing NBA players and Sacramento Kings staff to access defined locations.

When security technology evolves in the future, Johnson Controls *Metasys*® and P2000 systems are agile enough to give the Kings the ability to accommodate the latest public safety solutions.



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– Juan Rodriguez

### Protecting the investment in advanced building technology with a planned service agreement

Golden 1 Center design is driving toward LEED Gold certification, and the Sacramento Kings are ensuring their investment in advanced building technology pays off through a planned service agreement. Johnson Controls will maintain a service presence at the arena to help confirm the systems are optimized to meet comfort, safety and sustainability goals throughout the lifecycle of the facility.

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As the world's largest supplier of commercial building services, HVAC equipment, and building control systems, Johnson Controls has a presence in more than 45 percent of professional sports and entertainment venues in North America.

The company is a recognized world leader in complex building wide systems integration, providing innovative technology and advanced arena operations to make venues like Golden 1 Center operationally smarter, safer and more sustainable.

To discover how Johnson Controls is helping sports and entertainment venues around the world become operationally smarter, safer and more sustainable, please go to: <http://www.johnsoncontrols.com/buildings/solutions-by-industry/stadiums>