

ENERGYSOLUTIONS ARENA | CASE STUDY

BACnet and wireless solutions make a slam-dunk out of keeping EnergySolutions Arena guests comfortable

Salt Lake City's EnergySolutions Arena is part of the Larry H. Miller Group of Companies, which also owns the Utah Jazz NBA team. Miller, founder of the Group, purchased the struggling NBA franchise in 1985 to save it from being moved out of town. As the Jazz started seeing success and fan attendance increased, the team outgrew its original arena, and the Larry H. Miller Group of Companies made the decision to build a new one. In addition to hosting games for the Jazz and the AFL's Utah Blaze, the new EnergySolutions Arena configuration is able to seat anywhere from 14,000 to more than 22,000 spectators for sports, concerts, ice shows, rodeos and other special events—including Disney on Ice, Ringling Brothers & Barnum and Bailey's circus, and the 2002 Olympic Winter Games. Eight years later, when the original heating, ventilating and air conditioning (HVAC) system



The Alerton EMS delivers pinpoint-accurate and consistent temperatures across all the cavernous and diverse spaces inside Energy Solutions Arena.

needed an upgrade,

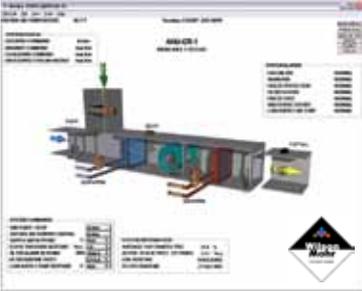
EnergySolutions Arena selected Wilson-Mohr, Alerton's Utah dealer, for the project.

When it came time to address sensors placement inside EnergySolutions Arena, the task posed an enormous challenge. Trying to place wire in the areas where spectators sit was problematic and, if at all possible, quite costly. Open concourses and open seating layout of the arena made it difficult to place sensors within proximity of the controllers, adding the challenge of obtaining accurate average temperatures throughout the arena.

With the cavernous nature of the space, the heating and cooling is anything but uniform. Arena space is not easily defined, which means it's not easily controlled. Numerous microclimates exist inside EnergySolutions Arena, and the updated HVAC solution required the ability to make those conditions identifiable, controllable and, therefore, predictable.

"Being able to anticipate microclimates is key to keeping our guests comfortable," said Jamie Galileo, vice president of facilities for the Larry H. Miller Group of Companies.

The arena chose to install a BACnet®-based Alerton energy management system (EMS) for more precision monitoring and control of the heating and cooling



The native BACnet EMS helps arena staff efficiently and effectively integrate, monitor and control a multitude of equipment.

inside EnergySolutions Arena. The new EMS also controls the arena's central plant, interior lighting, air handling units (AHUs), variable air volume (VAV) units, and variable fan drives (VFDs). Alerton AZW-5000 wireless communication devices provide for the

wireless extension of the arena's BACnet MS/TP network. VisualLogic® displays (VLDs)—a communicating sensor-controller combination with built-in temperature and humidity sensors—feature an integrated wireless receiver that the arena staff can also deploy for occupancy-based sensing, when and where required. Operator workstations use Alerton's WEBtalk™ software—part of its native BACnet system, Envision for BACTalk®—to centralize and manage all the arena's functions.

"Because the system itself is BACnet compliant, we're always able to add the latest, greatest technology to improve," Galileo said.

The AZW-5000 uses ZigBee® mesh networking topology to ensure self-healing, reliable communications. The ZigBee standard is based on the IEEE 802.15.4 standard, and specified communication protocols for small, low-power radios. ZigBee networks are secure and require less power than other personal networks, such as Bluetooth®.

AZW-5000 units were installed in each targeted zone to connect the BACTalk control module (BCM) to Alerton VisualLogic controllers (VLCs) that had been previously installed in the arena. Using a wireless MS/TP link between the BCM and the VLCs, each zone was then tied into the main HVAC, which is run by BACTalk. While the VLCs were wired and stationary, technicians were free to position the wireless AZW-5000 units anywhere.

Our goal is for you to come and enjoy the game or the circus, and never think about anything other than the reason you're there—to enjoy yourself.

Jamie Galileo, Facilities Vice President, Larry H. Miller Group of Companies

The Alerton system controls the arena's central plant, which includes the hot water and chilled water systems, boilers and pumps. The integration of 32 AHUs and 105 VAV units into the BACTalk system enables efficient conditioning of administrative office spaces and arena suites.

The wireless solution offered a lower install cost because it reduced the amount of wire and time required for installation. It also eliminated the need for expensive, extended conduit runs.

"Because we could install wireless, we were able to spend all the funds on data acquisitions and none on piping," Galileo said. "It effectively gave us more data points for the same amount we would have spent on hard wiring."

The ease with which Galileo and his staff now monitor and manage the arena gives no hint to the complexity of the facility's operations. The cavernous space of EnergySolutions Arena, combined with all the interconnected, mixed use areas—the sporting floor itself, 56 luxury suites, and 668 club seats, food services, guest facilities, administrative offices—means keeping a multitude of balls in the air without dropping a single one.

"You go from 200 daytime employees to 20,000 guests and 2,500 employees, so you go from being a small office building to a small city—and you have to be able to make that transition in about 45 minutes," Galileo said. "Without the Alerton system, there is really no way to make that transition effectively."

EnergySolutions Arena is just one jewel in the crown of Larry H. Miller Group of Companies. The facilities department monitors and controls dozens of Group-owned facilities—from the Jazz's practice facility, located less than three miles away, to megaplex theatres and a motorsports park more than 35 miles away—all through the Alerton solution headquartered at the arena.

