Salt River Project

PHOENIX, AZ

CASE STUDY | CORPORATE

Challenge

One of the largest power utilities in the U.S. created a smart building "incubator" to serve as a model of energy efficiency. Energy saving best practices would then be incorporated in construction of their new headquarters.

Solution

Exceptional designs and appointments, including video systems based on Crestron DigitalMedia™ and Crestron control.

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>
> — **Dave Olsen**
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> *Facilities Director, Salt River Project*

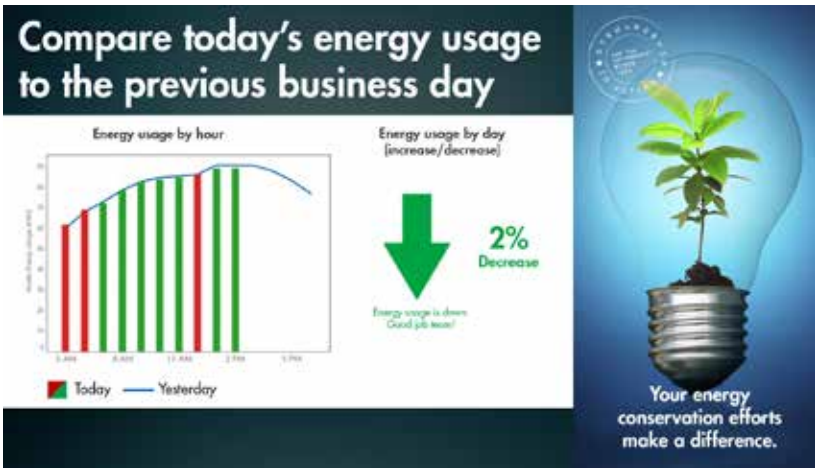
Power Company Creates an Energy Savings Model

Salt River Project (SRP), one of the largest power utilities in the U.S., created a smart building energy savings and efficiency model to implement in its headquarters.

With plans to renovate its 350,000 square-foot headquarters in Phoenix, Ariz., SRP seized an opportunity to renovate the three-story, 85,000 square-foot Credit Union Building (CUB) next door, and create a smart building "incubator." "We decided, if we're going to spend all this money on the big building, we should first test it in a controlled, smaller environment to see what we like, and don't like," said SRP's facilities director, Dave Olsen.

Goals

Olsen had two goals that would drive implementation decisions. The first was to achieve LEED® Gold certification, which in itself delivers significant cost savings. The second he said was to address: "How do we make a smarter building, and a better environment for employees?" Olsen went on to say, "What is the opportunity, how do we start, and how do we sensibly integrate it into a new culture?" To achieve this, Olsen engaged Scottsdale-based



Jeff Emmons (left) and Dave Olsen in front of one of the digital signage panels placed outside the elevators. The digital signage will alternate messaging between an employee-facing dashboard that might display energy usage for "today" and the "previous day," showing the difference (right), room scheduling information, and other company announcements.

technology integration firm, Immedia Integrated Technologies.

Immedia's president, Jeff Emmons, presented the multi-layered benefits of Crestron Fusion® Software. The enterprise management platform enables the monitoring, management, control, and automation, of lighting, shades, HVAC, mechanical systems, and AV systems, through a single intuitive user interface.

"Crestron Fusion is the intelligence layer on top of a traditional building management system," said Emmons. "It's the only product that enabled us to combine all the facets of the SRP project on a single platform, and that creates a database that can be parsed by data analysts."

The Money Is In the Data

Olsen explained, "The whole idea is to look at how you manage a building as a whole, instead of departments. One of the biggest benefits of Crestron Fusion is being able to make real business decisions based on real data."

Using Crestron Fusion to monitor and collect data, SRP and Immedia conducted a test that measured the impact of increasing the cooling setpoint by 1 degree in a 28,000 square-foot zone of one floor.

Energy: "HVAC systems are a huge cost to us," said Olsen. "So the less we can use HVAC the better it is." To create a baseline for data analysis all of the systems were run for a few months without modifications. "Then we went in and we changed the temperature by one degree. We could actually, visibly quantify and see on a graph how much one-degree in temperature variance makes on daily consumption of energy. But at the same time didn't want to negatively impact employee satisfaction," he said. The process has been gradual. A 2-degree shift was made without notice, and they will soon test a 3-degree change in the set point.

Occupancy sensors placed throughout the building delivered additional significant energy savings. "The occupancy sensors turn on mechanical systems over BACnet/IP when people are in the space," said Ira Beyer, chief technologist, Programming & Engineering at Immedia. "When there is nobody in the space and it's after hours, then we shut those systems back and we're able to show some drastic savings in electricity by doing that." Olsen added, "With this information, instead

of pre-cooling at 4:30 a.m. we were able to extend that two hours on the front side, and shorten by two hours on the back side. We optimized the building by about four hours a day, where we didn't have to cool it to the higher temperature, which has a positive impact on savings."

Room Scheduling & Room Monitoring: Everyone knows real estate is expensive, so having the ability to monitor and optimize the usage of conference rooms can prove to be an important planning tool to optimize space utilization. As workplace culture changes, fewer meetings with large numbers of people are taking place. Often a meeting room designed for 20 or 30 people will be occupied by a small group. Just as often there are small groups of people wandering a building looking for a small ad hoc huddle space. Through a combination of room scheduling, occupancy sensors, and monitoring room technology utilization, Emmons added, "With Crestron Fusion, conference room monitoring gives SRP metrics that can be used to define types and quantities of spaces based on data from the existing space."

A Crestron room scheduling touch screen placed on a wall outside of each meeting space displays the room name and status of the room. Using Outlook® software, employees can book a room using the touch screen, from their PC, or mobile device.

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Technology Usage: There's nothing worse than spending money on technology that doesn't get used. It can be equally costly if a meeting room does not have the right technology or if the equipment fails. "We can tell if an AV device goes

offline, if a projector bulb is due for replacement, or if a display isn't working," Olsen commented. "We couldn't do that before; it was always, 'Hey, somebody call support.' Or even worse, and more likely, no one called, and the technical support team didn't know there was a problem." Proactively maintaining the equipment based on data gathered will help reduce the number of Help Desk calls.

Employee Engagement: Digital signage panels have been placed outside the elevators. An employee-facing dashboard might display energy usage, showing the difference from the previous day. "It shows them that we can track that in real-time," Olsen said.

"I can control equipment and operations, but what I have a hard time controlling, to a certain extent, is employee behavior," Olsen commented. "That's one of the reasons we developed the energy usage dashboard. It engages our employees and helps them to understand what we're trying to achieve. They can adjust their activities to positively impact their goals too. That's why they're an important component of all this."

Developing a Best Practices Model

"We're much clearer now about what we want the building to do," said Olsen. "We have companies that are approaching us to tour our facility and learn from us. We're actually doing it."

Crestron Fusion is enabling SRP to build a model for energy efficiency.

Equipment List
Crestron Fusion® enterprise management platform
Crestron 3-Series Control System®
Crestron Lighting
Crestron DigitalMedia™ Presentation System
Crestron 7-inch Touch Screens
Crestron DigitalMedia 8G™ Cable

Integrator
Immedia Integrated Technologies
www.immedia-tech.com/

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Energy Usage graphic provided by SRP / Lightbulb image iStock: page 2 (right)