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On a Mission

Protecting Western heritage with wireless

When you're a recognized product developer in the industry, you're also an integrator at heart. Part of introducing new technologies includes installation and beta testing. But when it really all comes together is when you use your vast knowledge and experience to install security for a good cause.

Larry Tracy, president and chief executive officer of The Aleph America Corp., Reno, Nev., is quite literally on a mission. His most recent endeavor, call it an "obsession" is a good one – he's retrofitting some 21 California missions to save an important part of the heritage of the U.S. (Tracy holds numerous patents for motion sensors, including the first operational animal immune sensor.)

Wireless exceeds expectations

The use of wireless technologies was the key to providing protection and detection at the missions. It proved an extremely effective solution for circumventing the thick adobe walls of the missions. Even when wireless detectors were placed in the attics of these facilities, the receiver still acquired reliable signals through four inches of adobe on top of thick board. Wireless glassbreak detectors also were able to easily transmit signals through the walls to wireless receivers.

Top left photo: Larry Tracy, right, has donated time and resources to providing wireless security at close to one dozen California missions, with more installations planned. Left, Ruben Mendoza, Mission Conservation Project, at Old Mission San Juan Bautista praised his work at the historical sites.

Photos courtesy of Honeywell

Perhaps you haven't heard of the plight of the missions. Many are deteriorating and have been subject to a constant barrage of theft and vandalism. Irreplaceable artifacts have been stolen or lost. (Visit www.missionsof-california.org.)

During the past decade, the escalation of theft, including the tragic loss of the Mission era Carbajal violin from an unlocked display case at Mission San Antonio, the theft of a baby Jesus from the arms of the Virgin Mary at the same site, the loss of priceless colonial era paintings from Missions San Juan Bautista, San Miguel and San Jose, and the loss of countless California Indian and Hispanic Catholic statuary, reliquary and art, has proven devastating.

Tracy, along with his sons Scott and Patrick, have acted as lead integrators at some 11 California missions, donating time, labor and expertise to install a custom-designed

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Wireless technology proved an effective solution for circumventing the thick adobe walls of Mission San Juan Batista. Honeywell's 5881 Wireless Receiver, shown in the mission's attic, receives signals from wireless sensors through four inches of adobe on top of thick board.



While traditional wired technology proved impractical for thick adobe structures, wireless technology such as Honeywell's 5853 Wireless Glassbreak Detector, shown, is able to transmit signals through the walls to wireless receivers.

Photos courtesy of Honeywell

wireless surveillance and intrusion detection and recording system at each of these facilities.

"I became aware of the plight of the missions in December 2006," Tracy said. "These structures are an important part of the history of the West and the U.S. and the owners didn't have the resources to put together a security solution. They were losing artifacts from thieves and money from collection boxes and had a wide range of issues – including safety and incidents of devil worship." He contacted the California Missions Foundation to ask how he could help.

"The missions have an ancient history and invaluable art and some 5.3 million visitors, including 700,000 school children each year," said Ruben G. Mendoza, Ph.D. and project manager of the Mission Conservation Project effort

at Old Mission San Juan Bautista. "We knew something had to be done, so we set out to get some integrators to assess the security and bid on the job."

According to Mendoza, prior to contact with Tracy, he and the California Missions Foundation requested contractors visit to see what type of plan they might be able to come up with for the security installation at San Juan Bautista.

The integrators who initially visited the mission didn't want to touch it, because they didn't know how to deploy something in such a tough construction environment. Or, they quoted exorbitant costs to get the job done.

"Neither of the two firms that conducted site visits ever submitted written bids nor project quotes, although one contractor ventured that the costs could very well run into the tens of thousands or hundreds of thousands of dollars," he said.

After the initial bad news, divine intervention came through. Mendoza said Tracy contacted him and offered to help the California missions with their security challenges—and that meant implementing a wireless solution for the stone and adobe structures—something neither of the other integrators had an inkling to suggest.

"Tracy came out with a crew and started with San Juan Bautista and did a walk-through of the facility. He gave a host of solutions for our security problems, including protecting the collection box which was being robbed. He

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— Larry Tracy

brought out a crew of volunteers who donated time and labor," Mendoza said.

Some of the installations have been easier than others, but each held challenges. Cameras with small and unobtrusive housings were mounted on eight-inch-thick adobe clay walls using a 3/8-inch masonry bit and fluted wooden dowels to hold anchors in place in the walls. Color cameras with night

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Wireless contact sensors were deployed near statues and other artifacts to signal if someone tries to move an item.

Photo courtesy of Honeywell

vision (infrared) capabilities were used, as well as low-light level day/night cameras capable of seeing images in candle light. The height of cameras has been carefully adjusted to provide the best viewing and recording angles. At San Juan

Bautista, a DVR and monitor were set up in the gift shop.

Tracy's security crew commuted from Auburn, Calif., on a weekly basis and by the end of the project had invested some 30 days into the system at San Juan Bautista over two months. The project team, in addition to Larry and his two sons, also consisted of historic preservation craftsman Mike

To minimize the visual impact of the security systems to the historical integrity of each site, smaller cameras, hidden wiring and flush-mount sensors and detectors were generally the rule.

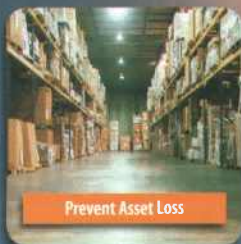
Kirby and security systems technician Steve Williams.

Part of the system included the planning and routing of some 14,000 feet of coaxial and related device cabling needed to network numerous cameras, doors, windows and object sensors and the motion detectors that span the Mission Church and Convent complex.

"This is the first time that a California mission has been outfitted with a state-of-the-art wireless security system and

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