



Luxury tower resort comes to life with help from Belden

New technology infrastructure supports emerging innovation and elite offerings.

Case Study



Customer

A project in the works for nearly 20 years, this venue recently opened after sitting half-completed for more than a decade.

Construction on the resort-casino began in the mid-2000s but, due to ownership changes and financial struggles, was halted a few years later before the exterior shell was completed. After the original owners came back on board, they opted to complete the property.

Today, the tower resort spans several acres and features thousands of technology-forward hotel rooms, a fiber-ready casino floor and high-tech meeting spaces.

Challenge

The resort required an extensive partial revitalization plus a new build for portions of the facility that weren't finished during initial construction.

As a result, it was an incredibly unique project that called for partners and project team members who could respond to the inevitable surprises that would arise as the layers of the building were peeled back after being stagnant for so long. Quick and effective communication concerning critical documentation like certification test results and warranties was also necessary.

Because progress was stalled for 10+ years, much of the technology and conduit infrastructure sat untouched for that long as well. When the project broke ground in 2007, many of the systems it was designed to support were nearly 15 years old and relied on analog communication instead of today's digital IP-based systems.

Much of the outdated materials and technology would need to be replaced with futureproof solutions that could meet modern demands.



Discovery

Members of the project team, including consultant firm Electrosonic and Belden Partner Alliance Installers ANS Electric and Bombard Electric, wanted to streamline the approach to updating the resort's technology infrastructure. As a result, they needed a partner that could provide all the copper, fiber and data center solutions required. And they found that capability with Belden.

From a cost perspective, Fernando Chavez, the lead design consultant and project manager for Electrosonic and current low-voltage design manager for ANS Electric, says, "Belden made the most financial sense. Our challenge was figuring out how to get all the products we needed on time, while navigating the supply chain issues that were happening at that time. Talking to Belden, we were able to get all the copper, metals and fiber we needed without long lead times. Plus, we were able to achieve a better price than we would have if we broke it up among several manufacturers."

Solution

The project is a perfect representation of what an end-to-end solution from Belden can do. "All the low-voltage cabling, metals and fiber were provided by Belden," says Chavez. "We used the whole package of products for this project. Belden touches almost everything within the entire resort."

Belden's systems enable the resort to implement data flow for personalization, digital guest journeys and mobile services, as well as support front- and back-of-house automation of mission-critical operations.

Supporting faster connections and extended reach

The majority of the resort's previously installed coaxial and Ethernet cables could not support up-to-date technology, so the cables were removed and replaced by Category 6A 10GXS Cabling.

REVConnect® Connectors and REVConnect Patch Panels are used throughout the building spaces, technology rooms and data centers.

"There was a lot of time and effort saved by using REVConnect," says Chavez. "The installation team had used Belden products in the past, but they were used to working with keystone jacks. Once they used REVConnect Connectors, they noticed how much easier termination was. The process is fast and easy to learn. The installers said that using REVConnect throughout the building saved them a lot of time."

Enabling better termination reliability, REVConnect reduces rework with a first-pass yield of 99%. A unique core makes this possible, supporting termination for all Category cables. A single tool covers every step of the termination process, including cable prep. An installer only needs to learn one process, have one tool and use one set of core components to perform any RJ45 connectorization.

The resort's conference space is supported by high-grade Belden Category cable that supports extended reach. "All the convention rooms were already laid out, and the floor boxes had conduits running back to those rooms," explains Chavez. "We discovered that many of the conduits already encased in the slab extended beyond the 295 ft cabling distance limitation. We had to figure out a solution since we could not add new rooms, and existing conduits could not be rerouted."

After discussing the issue with Belden, a cable was selected to support the longer distances necessary without compromising 10G speeds. Even with distances of up to 360 ft, the cables still performed as expected, while benefiting from a warranty that supported performance beyond typical distance limitations.



Upgrading to FTTx for more bandwidth

For the backbone, a singlemode fiber cabling system runs throughout the resort, including the casino, convention rooms, pool deck and parking garage. Belden's Fusion Splice-On Connectors were used to support better insertion loss, better return loss and greater flexibility. In the field, for example, installers can attach a connector to a cable via fusion splicing as an alternative to standard mechanical splicing. Fusion Splice-On Connectors allow them to run drop cables, cut the length they need, attach the connector and plug it in—all with no shorts or excess slack.

While Category 6 cabling and coax were initially run to all guestrooms in the original design, the decision was made to switch to singlemode fiber to support the new technologies and capabilities that are part of today's intelligent hotel environments.

"One of the biggest challenges was having to redo the cabling throughout the tower while using the existing conduits," explains Chavez. "There was existing Category 6 and coax cabling going up the tower in a riser configuration. There weren't enough existing cables to meet new cabling standards for the guestrooms, and the existing conduits were too small to fit new cables. To bring the guestrooms up to the new standard, we removed the existing coax and Category cabling, and we went with two strands of singlemode fiber to a switch."

Every guestroom and suite has fiber running to a network switch located in a consolidation panel or cabinet hidden in the room. Each outlet and device in the room is connected to the switch. Each guestroom has its own control system and wireless access point to ensure connectivity for all the devices being brought in by guests.

Deploying rugged connectivity for gaming

OptiTuff® Mini Fiber Cable was used on the gaming floor, which features a cellular raceway system. Installed in 2008, the floor was dormant for several years. As a result, dust and debris had built up over time. Although it was cleaned, the environment still wasn't conducive to traditional fiber installation, and a metal armored fiber wouldn't be flexible enough to handle and was too large to install in the existing raceway.

With its small yet rugged design, OptiTuff is a top-quality, cost-effective alternative that combines the durability of metal armored solutions with the performance and installation ease of non-armored solutions. If there were imperfections in the flooring system, the cable could still be pulled through without damage.

Enabling a true end-to-end environment

Cabling from Belden was also used to connect AV, lighting control, security, surveillance, access control and building management systems across the property, as well as the distributed antenna system (DAS) from JMA Wireless, which improves indoor wireless coverage by conditioning, filtering and combining wireless outdoor signals with other carrier signals.

In addition, Belden's complete connection solutions support the technology used in the resort's parking garages, including the parking control system, license plate reader system (LPR), valet vehicle damage system and the emergency phone communications system.

Redesigning a more efficient data center

An 80-cabinet data center is the hub of activity at the resort, centralizing all data operations. Systems were designed around existing plenums to reduce downtime and optimize costs.

Belden helped design the data center's pod system, and hot-aisle/cold-aisle containment was designed and built around it. This layout helps save energy by eliminating the mixing of hot and cold air to maximize efficiency and lower operating costs. This not only decreases energy consumption but also significantly improves cooling to reduce workloads, protects equipment performance and supports easy scalability as data center demands increase.

Blade servers and core switches were used together to protect against failure, providing high levels of redundancy and availability. This ensures a reliable, resilient network backbone while decreasing space and power requirements. Intelligent power distribution units (PDUs) were also deployed to remotely monitor and manage data center power usage. Administrators have access to detailed data about energy use down to the receptacle to better understand power allocation and address potential performance issues.

To help the resort visualize how all these changes would come together, Belden created 3D data center renderings so the resort team could provide feedback on what it saw.

Building New Platforms for Project Communication

To keep everyone on the same page and provide excellent communication to the project team, Belden created a custom online portal.

When remodels or changes are necessary, the owners can view the drawings online to understand exactly what's in that space.

Results

With the right technology infrastructure in place, a property that sat half-completed for so long is now full of life—and offers the ability to support today's emerging technologies and elite offerings along with whatever the resort considers in the future.

With a foundation built for innovation, the multi-billion-dollar destination property met its goal of redefining the hotel meeting experience for guests and planners. It leverages smart-room technology, mobile-forward guest experiences and contactless check-in. Each space has more than enough bandwidth to support whatever devices guests bring with them. These capabilities are especially attractive for planners that want to provide event attendees with a seamless, cutting-edge experience from the convention center space to the guestroom.

The luxury resort is also positioned for flexibility. For example, if it wants to upgrade network speeds, it will be able to do so quickly and efficiently.

Originally designed to align with the guest expectations of nearly two decades ago, Belden helped the brand redefine itself. The resort is now ready to offer the guest experience of the future, which will be supported by technology innovation, personalization and high-touch services, and exceptional amenities.



About Belden

Belden Inc. delivers complete connection solutions that unlock untold possibilities for our customers, their customers and the world. We advance ideas and technologies that enable a safer, smarter and more prosperous future. Throughout our 120+ year history we have evolved as a company, but our purpose remains – making connections. By connecting people, information and ideas, we make it possible. We are headquartered in St. Louis and have manufacturing capabilities in North America, Europe, Asia and Africa.

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