

Tuning In to Cellular Signals at Tuacahn Amphitheatre in Red Rock Country

Wilson Electronics amplifiers and antennas have helped improve cellular performance in some unique places. Among them is the Tuacahn Amphitheatre, set in a red rock canyon where professional theatre performances are center stage.

Best known for its spectacular setting adjacent to Snow Canyon State Park, the Tuacahn Amphitheater in Ivins, Utah, is one of the most popular theatrical venues in the southwest United States with over 150,000 visitors each year. More than a pretty place, Tuacahn is a professional non-profit arts organization that provides world-class family entertainment and education.

In addition to performance space, Tuacahn's facilities include administrative offices, ticket offices, a costume and scene shop, studios, high school classrooms, and a gift shop. The people who work in these facilities rely on cellular communications to produce and support Tuacahn's programs. Although its canyon setting is part of what draws visitors to attend the outstanding productions of theatre, dance and music, it is also what makes it difficult to get a cellular signal there.

Identifying the Problem

Tuacahn is located at the mouth of Padre Canyon, surrounded by towering red rock cliffs. Because of that location, there is not enough signal strength for Tuacahn staff and patrons to get and maintain cell calls, and there is no direct line of sight to a cellular tower. "It was nearly impossible to get cell service before we installed the Wilson amplifiers and antennas," said Roger Rainey, Facilities Director at Tuacahn.



Twelve distinct buildings make up the Tuacahn campus, with staff often walking between the buildings and needing to communicate while working on stage or in production. "It was very frustrating for me personally in facilities maintenance work," said Rainey. "I estimate that I lost about an hour of work everyday having to go find a landline each time I needed to make a call."

Finding the Solution

The cliffs around Tuacahn present a special challenge in connecting with a signal from any nearby cellular tower. Typically, a Wilson Electronics in-building system includes an outside Yagi antenna pointed in the direction of the nearest cell tower. However, since there is no line of sight to a cell tower at Tuacahn, Wilson's technical support team had to get more creative about the installation.

"Instead of pointing the Yagi antenna in the direction of a cell tower, we had to point it toward the cliff that the signal was bouncing off of," said Walt Brooks, Wilson Electronics Sales Director. "With the location in the canyon, that was the only logical solution."

The high-gain Yagi antenna collects the "bounced" signal and, together with an amplifier and an inside

antenna, improves transmit and receive signals for the 806-894 MHz band used by popular Cellular and iDEN carriers.

Staff from Tuacahn and Wilson Electronics collaborated on the installation of amplifiers and antennas on the campus. Wilson's in-building wireless amplifiers now occupy three buildings – the costume shop, the administration building and the high school.

The Results

Tuacahn staff and visitors now easily use cell service at the arts center. Facilities Director Rainey no longer loses valuable work hours to finding a landline. "The cell coverage is surprisingly good if you consider Tuacahn's location and geography," he said. "When you compare how difficult it was to communicate before the installation and how great it is now, the difference is astounding."

