



Beating the High-Rise Hunt with In-Building Wireless

CASE STUDY

CHALLENGE

- Improve GSM and CDMA cellular coverage inside 1.2 million square foot office tower
- Minimize disruptions during installation
- Adjust antenna placement to meet individual tenant needs

STRATEGY

- Multi-carrier DAS with single set of electronics
- Easy, flexible CATV cabling for hub-antenna connections
- High, uniform power output and flexible CATV cabling simplifies antenna placement adjustments



Cousins Properties is one of the country's top diversified development companies, with property management and development focused on fast-growing Sunbelt states like Florida, Georgia, Texas, and California. Founded by Thomas G. Cousins, the company has been publicly traded since 1962 and is currently listed on the New York Stock Exchange under the ticker symbol CUZ.

The Cousins Properties portfolio includes interests in 7.5 million square feet of office space, 4.6 million square feet of retail space, 2 million square feet of industrial space, one multi-family residential project and 23 single-family neighborhood developments, over 9,200 acres of strategically located land tracts for sale or future development, and significant land holdings for development of single-family residential communities.

Cousins Properties is best known for landmark office towers in major cities. The company added to this part of its portfolio in September 2006 by purchasing One Ninety One Peachtree Tower in downtown Atlanta. An Atlanta landmark and the city's second-tallest building, One Ninety One Peachtree Tower is a 1.2 million square foot building that houses Cousins Properties' own headquarters as well as professional offices, restaurants, retail space, and a 15-level parking garage.

The Hunt for Cellular Service

As premium developers of class AAA office space, Cousins Properties management was anxious to minimize vacancies in the building by providing an optimum work environment. But for many of the building's current and prospective clients—often large law firms, accounting firms, and other professional service companies—that means also providing strong and clear cellular voice and data signals.

"Many of our tenants rely on cell phones and smart phones as their primary communications devices, and they had problems getting reliable

signals on the upper floors of the building," says Dan G. Arnold, senior vice president and CIO of Cousins Properties. What the Cousins technical team found is a problem common to high-rise buildings in crowded urban areas.

Carriers in urban areas often use the tops of buildings as locations for cellular base stations. On the upper floors of taller buildings in these areas, cellular phones and smart phones can sometimes "see" cellular signals from several nearby cellular base stations. When this happens, the phone becomes confused about which signal to accept and can actually "hunt" from one signal to another, causing poor connections, an inability to connect, or dropped calls.



Deploying the Right Solution

When the telecommunications staff consulted the company's corporate Internet Services Department, the team there had already researched the problem. The answer was to deploy an in-building distributed antenna system (DAS) that provided its own cellular signals. With strong and uniform signals coming from antennas located in the ceilings of each floor, cell phone users would have clear and highly reliable connections.

One Ninety One Peachtree Tower had an existing DAS that had previously been installed for Nextel users, but the system didn't provide consistent coverage and the management wanted to add inbuilding coverage for users of the city's two largest carriers, AT&T and Verizon. After evaluating solutions from different vendors, Cousins Properties selected the InterReach Fusion® system from ADC Wireless.

"Our team wanted a multi-carrier solution that could be deployed with minimal disruption to existing infrastructure," said Arnold, "and the Fusion system stood out in that respect. In addition, ADC's use of standard cabling made deployment faster and less expensive."

Unlike other DAS products, InterReach Fusion provides coverage for multiple carrier frequencies with a single set of electronics, and relies on low-cost, easy-to-install CATV cabling to extend signals from its hubs to its remote antenna units (RAUs). To cover all of the interior space at One Ninety One Peachtree Tower, ADC Wireless engineers specified a system that included seven Main Hubs (deployed in the building's communications room), 25 Expansion Hubs (located in wiring closets on alternate floors of the property), and 196 RAUs, or approximately four per floor.

The deployment began in May 2007 and coverage was in place by the end of August. Installation of the hubs, cabling, and RAUs took just a few weeks, with Cousins' own cabling contractor installing the CATV cable, and ADC engineers installing the system electronics. "The deployment would actually have been much faster," says Arnold, "but we had some delays with deployment of base stations in our communications center."

Otherwise, the only hitch was meeting the design requirements for three specific tenants. These tenants had leased two floors and were using an "open ceiling" design with exposed HVAC ducts. To accommodate the designer, ADC engineers had to relocate two RAUs. Fortunately, the Fusion system's industry-leading power output allowed for the antennas to be moved without affecting the quality of coverage. And because the system uses extremely flexible CATV cabling, moving the RAUs was simple and quick.

Universal Coverage Means Happier Tenants

Since deployment, building tenants and Cousins Properties employees have noticed a big difference. "The service is really terrific," says Arnold. "We had a voice mail from a tenant thanking us, saying he didn't know what we'd done but now he didn't have to get up from his desk and go outside to get great cell phone reception. Now, tenants can use their phones in the elevators and in the above-ground levels of the parking garage, even though we didn't deploy RAUs in the garage."

With its ability to handle multiple carrier frequencies, the Fusion system easily supports both CDMA and CDMA2000 EV-DO Rev 1a (Verizon) as well as GSM and HSDPA (AT&T) services, so a majority of users in the building have excellent service now. In fact, T-Mobile is in discussions with Cousins Properties about adding a base station of its own, since one of the property's major new tenants has a corporate contract with that carrier and has asked for service at One Ninety One Peachtree Tower.

Armed with in-building cellular service provided by ADC Wireless, Cousins Properties has gained a key competitive advantage in the battle for new tenants at One Ninety One Peachtree Tower. According to Arnold, "The people looking at this building are also looking at other high-rise, AAA-class buildings, and consistent cellular coverage is one more advantage we can offer them."

CASE STUDY



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