



SUMMARY

SOLUTION

- Cel-Fi QUATRA

RESULTS

- Quick install
- Significant cellular coverage improvements for AT&T and Verizon
- Delivered exactly what was needed

THE CHALLENGES: Retirement Community

- Premier provider of senior living options rebuilt one of its **125,000 square foot buildings**
- **Building materials and underground location** blocked cellular signals from entering the facility, resulting in no cellular coverage on the lower floors for nursing staff or residents
- Needed to boost signals for **AT&T and Verizon**

THE CHALLENGE

LifeSpire of Virginia, a premier provider of senior living services and amenities, built its fourth building within its continuing care retirement community (CCRC) in the town of Culpeper. The new facility was built using LEED design and materials, which made the facility very energy efficient, but blocked cellular signals from penetrating into the building.

Located on a beautiful 100-acre campus, The Culpeper was also built into the side of a mountain and as a result, the two lower levels of the building were underground. Building materials, including low-E glass windows, combined with the partial underground location blocked cellular signals from entering the building, particularly on the two lower floors where nurses and certified nursing aids work around-the-clock. Resident apartments and amenities such as a gym are also located on those floors.

"Nursing staff could not use their cell phones to return calls from residents' family members while out on the floor. The signal was so bad they had to wait until their break or after work," says Robert E. Wilbanks, VP of Information Technology at LifeSpire of Virginia. "Some residents also had no cell service in their rooms at all. This left areas where there was no coverage at all."

That's when LifeSpire went to MABC Technologies and said, "We have a problem as we can't get a signal. Can you help us out?" according to Greg Miller, Vice President of sales, at MABC Technology Solutions.



ABOUT MABC TECHNOLOGY SOLUTIONS

- Established in 1990
- Based in Virginia with full service offices in Portsmouth, Richmond, and West Virginia
- Services include designing, implementing, and supporting customized communications and network solutions
- Customers include commercial business, government, nonprofits, education, financial, legal, healthcare, and senior living communities

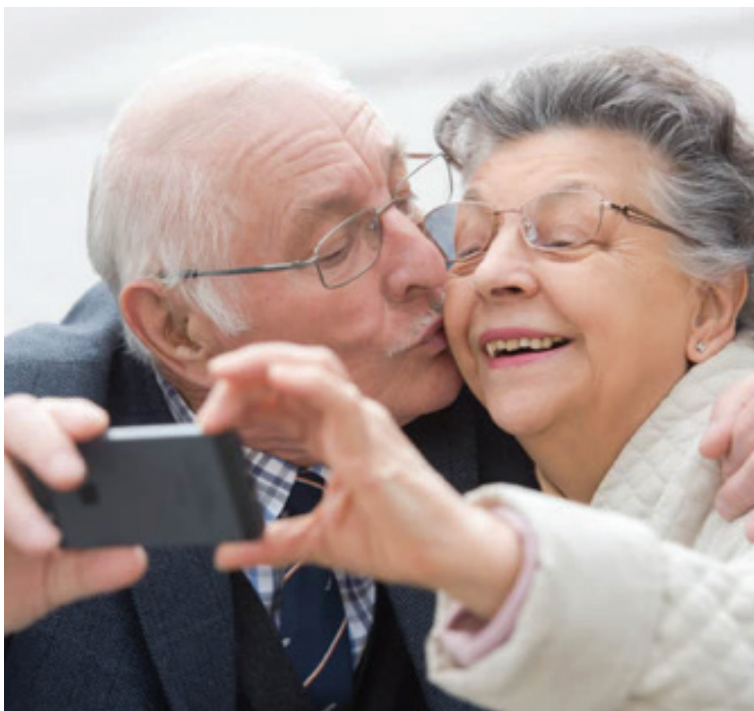
THE SOLUTION

To get a better signal into The Culpeper, MABC Technology Solutions chose to design a solution featuring Cel-Fi QUATRA, an active DAS hybrid that delivers uniform in-building cellular coverage. QUATRA specifically addresses the challenges of poor voice quality, dropped calls, and areas of no cellular reception in large commercial buildings. Unlike analog boosters and passive DAS systems, QUATRA delivers a cellular signal that is up to 1000x stronger, offering a much larger coverage footprint. It also uses category cabling with Power over Ethernet (PoE), so there is no need to install additional power outlets for the internal remote antennas.

LifeSpire had to improve cellular reception for AT&T and Verizon, which are the most widely used wireless providers in The Culpeper. ““Since Cel-Fi QUATRA can be used in single or multi-carrier environments, we were able to deliver just what was needed,” says Miller.

MABC Technology Solutions installed five Cel-Fi QUATRA 2000 Network Units (NUs) – the head end of the system – in high priority areas on the two lower floors. The NUs enhance the outdoor signals for AT&T and Verizon, and digitally re-transmit them with zero signal loss via Cat 6 cables to 19 QUATRA Coverage Units (CUs) – which are the remote internal antennas. The CUs were strategically located in common areas such as hallways on the two lower floors to boost Verizon and AT&T signals throughout the floors and in residents’ apartments and amenities. Four QUATRA 2000 Range Extenders were also installed.

“With Cel-Fi QUATRA, we were able to reduce some of the cost by coming in with only AT&T and Verizon NUs. We also ran additional cable so the infrastructure is in place to plug in NUs or CUs for Sprint or T-Mobile if they found out later that some of the residents or staff use those carriers,” Miller adds.



THE RESULTS

The installation took less than a week and a team of two people to complete. “Cel-Fi QUATRA was simple to install and commission,” says David Midcap, engineer at MABC Technology Solutions. “Even getting the donor antennas up was easy. The area of the roof that we had to work with was very easy to get the cabling into the building. Everything about it went perfectly.”

Previously, the emergency/distress button system at The Culpeper was limited to Wi-Fi only. “The cellular boost allows the phones to run on either Wi-Fi or cellular so staff never miss an alert,” adds Wilbanks. Residents can also use their cell phones in their apartments.

According to Miller, Cel-Fi QUATRA offers several important points of value. “One, it allowed us to sell only what the customer needed, AT&T and Verizon. Plus, the deployment of QUATRA was much easier than the competitive offering we had, which used coax, a much heavier cable that is much more difficult to deploy and has higher labor costs. Also, there was signal loss in the coax, where there was no signal loss with the Cel-Fi solution. We knew that we’d be able to get a better signal with QUATRA,” he concludes.



CEL-FI
QUATRA

**BEYOND
BETTER
COVERAGE**

- **High-quality solution for the middleprize**
- **Supports multi-carrier voice and data**
- **Carrier-approved and unconditionally network safe**
- **Can be monitored and managed using Cel-Fi WAVE**