



Case Study | Sheppard Pratt

Improving Healthcare Facility Safety: Deploying Public Safety Distributed Antenna Systems Within a New State-Of-The-Art Behavioral Hospital

OVERVIEW

Pioneering Mental Health Care at Sheppard Pratt

Sheppard Pratt stands as the nation's largest private, nonprofit provider of mental health, substance use, developmental disability, special education, and social services.

Renowned for its contributions to the field since its founding in 1853, Sheppard Pratt has consistently led in innovation through research and the adoption of best practices, significantly enhancing the quality of mental health care worldwide.

Located in Elkridge, Maryland, the Sheppard Pratt Baltimore/Washington Campus spans 50 acres and features an 85-bed hospital covering 156,000 square feet. This facility is not just a place for medical treatment but a comprehensive healing environment that includes inpatient and specialized

outpatient programs, crisis services, and numerous recreational facilities.

The campus design emphasizes therapeutic and recreational spaces with outdoor courtyards, terraces, and extensive use of natural light in every space—realizing founder Moses Sheppard's vision that "no patient was to be confined below ground."

Upon completing this expansive new behavioral health campus in Howard County, Maryland, Sheppard Pratt engaged Communications Electronics (CEI), now a part of the MCA family of companies, to expertly design, deploy, and maintain both the neutral host carrier and public safety distributed antenna systems, ensuring robust connectivity and safety throughout the facility.

Improving RF Coverage Across 50 Acres and 156,000 Square Feet

Neutral-Host DAS and ERRCs Enhancement Solutions for Healthcare Environments

Improved Clarity & Coverage

Easy Deployment of Cat 5e/6

Cloud-Based System Access

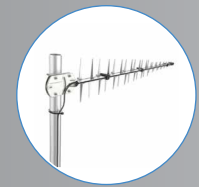
Independence from Primary ISP

Cost-Effective Implementation

Flexibility and Scalability

Improved Network Security

Future Wi-Fi Expansion



This facility is not just a place for medical treatment but a comprehensive healing environment that includes inpatient and specialized outpatient programs, crisis services, and numerous recreational facilities such as a gymnasium, basketball courts, and a yoga/meditation room.

CHALLENGE

Ensuring Compliance with Public Safety Communication Regulations

As Sheppard Pratt embarked on the ambitious project of constructing their new campus, the need for a compliant and effective communication infrastructure became paramount. To facilitate this, they enlisted ConCor Networks, a long-standing and trusted partner, to oversee the procurement and installation of all necessary RF and fiber optic cabling throughout the facility.

Recognizing the need for specialized expertise in wireless network solutions, ConCor Networks recommended CEI, now part of the MCA family of companies, known for their reliable service and deep industry knowledge. Together, ConCor Networks and CEI crafted a dual proposal aimed at enhancing cellular coverage for AT&T and Verizon users and addressing the stringent requirements set by the National Fire Protection Agency (NFPA) for 700/800MHz public safety radio coverage in Howard County.

Their collaborative effort resulted in a competitive bid that included a detailed plan for antenna and cable installation, which was accepted by Sheppard Pratt. With the proposal approved, the teams mobilized quickly, working diligently to align with the construction schedule and ensure all regulatory mandates were met efficiently and effectively.

SOLUTION

Custom-Tailored Indoor Wireless Solutions for Complex Environments

Sheppard Pratt's new facility, with its expansive open floor design and extensive use of energy-efficient LEED-certified glass across its three-story, multi-wing layout, posed significant challenges for ensuring robust wireless signal coverage throughout. The complex structure required a meticulous approach to maintain signal strength in all critical areas, including patient rooms, common spaces, and stairwells.

To address these challenges, the project team utilized iBwave software, recognized as the industry standard for designing indoor wireless networks. This powerful tool enabled them to develop a detailed plan for antenna distribution and fiber optic cabling that leveraged the existing infrastructure.

The design focused on optimizing the fiber head-end located on the ground floor and integrating off-air donor antennas strategically positioned on the roof above the DAS head-end. This bespoke solution ensured comprehensive coverage and met the facility's unique needs while maintaining the architectural integrity of the building.

RESULTS

Enhanced RF Coverage Ensuring Safety and Connectivity

In partnership with ConCor Networks, CEI successfully installed discreet DAS antennas in strategic locations such as below drop ceilings throughout the Sheppard Pratt facility, ensuring optimal cellular and public safety RF coverage.

This deployment supports the daily operational needs of staff and patients and provides critical coverage for first responders.

Since its inauguration in June 2021, the hospital campus has benefited from robust wireless coverage, greatly appreciated by staff and patients alike. John Shirk, Director of Telecommunications at Sheppard Pratt, remarked, "CEI effectively navigated the unique design challenges of our facility and delivered a comprehensive solution that satisfied all our coverage requirements."

This successful project has not only solidified the partnership but also led to Sheppard Pratt's further engagement with CEI to expand its wireless Wi-Fi network across the campus, reinforcing the trust and satisfaction in the solutions provided.



"CEI understood some of the unique design challenges within our facility and delivered a comprehensive solution that met our coverage needs."

John Shirk
Director of Telecommunications

Our In-Building Wireless Team

30+ Years of Experience with 10,000+ Successful DAS Deployments

At MCA, our In-Building Wireless Solutions (IWS) team excels as a top-tier integrator of in-building and expansive campus-wide wireless coverage and capacity enhancement solutions. We offer unparalleled engineering design, project management, implementation, commissioning, and maintenance services. Our expertise encompasses engineering and installing Commercial Distributed Antenna Systems (DAS), Private LTE/5G systems, Public Safety ERRCs, Wi-Fi, and both multi- and single-operator systems within diverse public and private venues.

Our team's deep knowledge and innovative approach empower us to design customized, future-ready solutions that effectively address our clients' wireless coverage and capacity requirements. Leveraging a carrier-neutral strategy, we deliver cutting-edge, multi-operator DAS networks for corporate offices, hospitals, universities, airports, shopping centers, and more throughout the United States.

Other Solutions for Healthcare Facilities

While our In-Building Wireless Team focuses on specialized wireless systems, our wider capabilities encompass a full spectrum of technology solutions designed to enhance operational efficiency and security for diverse industries.

MCA provides integrated security and communication systems including two-way radio communications, video surveillance, access control, and emergency response technologies. These services are tailored to meet the needs of corporate offices, healthcare facilities, educational institutions, and more, ensuring robust security and effective communication across all operations.

Our technical expertise spans system design, engineering, sales, installation, maintenance, and technical support, supplemented by our SecurePlan™ and Managed Technology-as-a-Service (MTaaS) programs. Both programs ensure the optimal performance and longevity of all deployed systems and infrastructure, helping clients navigate the complexities of modern technology solutions.

From establishing reliable communication networks with state-of-the-art two-way radio systems to deploying security systems that safeguard valuable assets and enhance site security, MCA delivers comprehensive solutions that go beyond wireless connectivity.



About MCA

MCA is one of the largest and most trusted technology integrators in the United States, offering world-class voice, data, and security solutions that enhance the quality, safety, and productivity of customers, operations, and lives.

More than 65,000 customers trust MCA to provide carefully researched solutions for a safe, secure, and more efficient workplace. As your trusted advisor, we reduce the time and effort needed to research, install, and maintain the right solutions to make your workplace better.

Our team of certified professionals across the United States delivers a full suite of reliable technologies with a service-first approach. The MCA advantage is our extensive service portfolio to support the solution life-cycle from start to finish.

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The MCA logo is rendered in a white, sans-serif font. The letter 'C' is stylized with a blue circular graphic element inside it, consisting of a solid blue ring and a central blue dot. The background of the entire page is a dark blue gradient with abstract white line art patterns, including a network of nodes and lines in the upper right and a grid-like pattern in the lower right.