

Turning the Tide in the Battle Between Buildings and Cell Phones

One of the greatest challenges in today's office environment is having perfectly acceptable outside cell signal that's blocked from getting inside by steel, concrete, and low-e glass. The same materials that block heat (solar infrared energy) from entering your office building also block other long-wave electromagnetic radiation, including wavelengths used by cellular devices.

The result is that you can be carrying on a conversation just fine outside as you walk to work, but suddenly drop your call the minute you step inside the building. Other buildings may have acceptable cellular voice and data coverage in certain areas (especially closer to exterior walls), but "dead zones" in certain spots, especially in the center of the office floor and on floors below ground level.

The problem, of course, is that smart phones and cellular-enabled tablets and laptops have become indispensable in today's work environment. Companies expect to stay in touch with their employees; contractors and independent businesses need to be able to communicate with their clients from any location. Office construction materials are doing their best to prevent that, but the solution is at hand.

Signal, Signal Everywhere, But I Can't Make a Connection

A global, multi-billion-dollar company recently experienced this problem in their flagship Times Square office in New York City: There was plenty of cell signal outside their seventeen-story office building, but, due to low-e glass surrounding the building and glass partitions between offices on every floor, virtually no signal inside. Glass creates an attractive, "open" feel for an office, but it's a serious obstacle for radio frequency transmissions. This company rents temporary office space to individuals and small businesses; their clients count on strong, reliable cellular service, but were getting zero signal at their desks and in the conference rooms.

This company reached out to Powerful Signal for a solution to their problem. Based in scenic southwestern Utah, Powerful Signal has designed and installed cell signal amplification systems for thousands of offices, schools, warehouses, government facilities, and other sites since 2007.



This project required improved cellular coverage for fourteen floors that are each over ten thousand square feet, for a total coverage of over 150,000 square feet. The company's requirements were that the solution be expandable (for future increases in the number of users), use easily-replaceable components (to account for new technologies and the possibility of hardware failure), and work within and around their existing IT infrastructure (which included cabling and Wi-Fi antennas throughout each floor).

Going Pro

Times Square New York Office Building

Powerful Signal uses commercial grade cell phone signal amplifiers from leading manufacturers of cellular signal amplification technology. These bi-directional amplifiers (BDAs) significantly improve cellular voice, 4G LTE, 3G data reception, and work with all cellular carriers. **ProWay** Commercial Systems are a "fat pipe," supporting more voice and data throughput for more users - something that was critical in the Times Square office, which included office space for over two hundred people on each floor.

Powerful Signal's custom-designed **ProWay** solutions are able to cover all the required space on fourteen floors with a distributed antenna amplifier system. Ceiling-mounted dome antennas on each floor filled the interior space with strong cellular signal. The completed installation brought New York City's exceptionally strong cellular network inside the building and distributed it evenly across each floor.

Powerful Signal designed and coordinated the installation from start to finish. This project was a considerable logistics challenge: With New York City's busy streets and limited space, there was no place on site to store the equipment the installers needed for the job. Powerful Signal shipped the antennas, cables, and amplifier equipment to a warehouse in the Bronx, and arranged to have all the items dropped curbside at the specific date and time the installers were there to begin their work. The installers then staged the parts throughout the building and put them into place over the thirty-six work-hours it took to complete the project.



Problem: Solved

Times Square New York Office Building

With **Powerful Signal's** installation completed, the building's interior is now flooded with cellular signal. The clients who rent office space are now enjoying strong, reliable voice, text, and data connections on their devices, delivered with a **ProWay** Cellular System. The building's owners are able to attract and retain more clients by delivering the cellular experience working professionals expect in the New York City's most famous business district.



Affordable - Fast Cellular DAS

With the success of the Time Square project, Powerful Signal has teamed with this client to assess and implement cellular DAS systems in hundreds of their locations nationwide. Projects are completed on-time and on-budget and operated with **Powerful Signal's Lifetime Support**.



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