



# Building owner's guide to indoor 5G: When being a "cellular dead zone" is not a competitive advantage

White paper



Consult Build Transform Support



## Introduction

5G networks are no longer a dream of the future. They're finally here and delivering faster speeds with lower latency. Although initial deployments have focused on macro networks, with the exception of large sporting venues or convention centers, 5G for in-building applications is not far off.

As a result, many organizations are looking for ways to improve cellular coverage inside their facilities to support the growing number of customers and employees requiring an always-on, reliable indoor signal.



## Poor cellular signal strength in indoor environments typically occurs for one of two reasons:

- Commonly used radio frequency (RF) shielded materials including steel, LEED-certified energy efficient windows, and concrete. These materials can degrade wireless signal strengths.
- Signal quality may be diminished as a result of too many users attempting to access the network, thereby overloading the intended capacity of the carrier's network.

## What do building managers, operators, and architects think?

**87% agreed:** It's imperative to have in-building cellular coverage in all areas of your buildings.

**84% agreed:** Fitting buildings with optimal in-building cellular coverage would improve employee productivity.

**54% agreed:** Wireless connectivity makes a building more desirable.

Source: CommScope Report—Wireless in Buildings



**CBTS offers two options for in-building cellular connectivity:**

**Network as a Service (NaaS) with Wi-Fi.** For some businesses, it might make sense to use voice over Wi-Fi. It's especially useful in smaller environments, with smaller workforces. But it has limitations. Wi-Fi networks can drop calls if a cell phone is too far away from an access point. In addition, they don't automatically hand off calls to cellular networks and they're susceptible to interference and getting bogged down by someone else on the network downloading a large file.

**Distributed Antenna System (DAS).** A fiber-based DAS solution is specifically built for in-building cellular coverage and produces strong, reliable connectivity to any type of cell phone, as well as cellular carrier. The system is ideal for large, multi-floor buildings and outdoor areas, such as:

- Arenas and stadiums
- Shopping malls
- Casinos
- Military facilities
- Commercial real estate
- Resorts
- Government buildings
- Residential buildings
- Hospitals
- University campuses
- Hotels
- Warehouses

## By adding a DAS indoor wireless network, organizations can achieve:

### 1. Improved customer and employee satisfaction.

- Improved in-building cellular coverage.
- Reduced dropped calls and “dead spots.”
- Improved data speeds.
- Increased capacity to handle large numbers of calls.

### 2. Enhanced public safety.

- Aligns well with most emergency notification systems.
- Improved ability to call 911 throughout the building.
- Helps emergency personnel coordinate efforts.
- Meets public safety codes and ordinances.

### 3. Increased property values.

- Attract and retain tenants.
- Secure long-term leases.

- Reduce operating expenses.

- Help enterprises increase productivity, recruit talent, and attract visitors.

### 4. Preparedness for 5G.

- Future-ready infrastructure that is scalable, meaning it can grow with usage needs while ensuring lower cost of ownership and the ability to use all available frequencies.
- Fosters smart communities and smart cities.
- Reduced overall consumption of in-building Wi-Fi, as well as the elimination of yearly data capacity upgrades.
- Provides the ability to implement a “bring your own device” model.
- Enables IoT devices, AI, and robotics to improve operational efficiencies

## Why CBTS?

As a leading provider of fiber technology throughout North America, CBTS professional engineers, designers, project managers, and installation technicians have extensive experience deploying DAS solutions. In fact, CBTS has taken on numerous projects in challenging venues ranging from airports and hospitals to large arenas, stadiums, and high-rise office buildings.

CBTS is able to customize a DAS solution that provides superior in-building cellular coverage to all national carriers, such as AT&T, Verizon, and T-Mobile, and meets the financial and network requirements of a business.

CBTS provides DAS as a Service (DASaaS), meaning businesses pay for the network consumed—do nothing more. In addition, CBTS provides ongoing support services, including:

- Management of cellular carrier relationship and support.
- Monitor and maintenance of DAS system 24x7x365 to ensure superior service.
- Delivery of DAS performance reports on a regular basis.

For more information or to talk with a CBTS DAS expert today visit [www.cbts.com/indoor5G](http://www.cbts.com/indoor5G).