



Small Cell Design & Installation

5 Bars Services, LLC designs and integrates wireless network construction projects from remote cell sites to massive sports venues by providing the physical infrastructure and technology to add capacity and eliminate gaps in coverage. We work with leading technology and equipment providers to present the best solutions for performance optimization and value to meet specific customer and facility needs.

SMALL CELLS

The unprecedented demand for wireless data has called for a multi-layered approach particularly in densely populated areas. Small cells provide added bandwidth where it is needed most.

5 Bars provides turnkey small cell solutions including:

- Site Acquisition
 - Search Area Candidate Selection
 - Pole Attachment & Rooftop Agreements
 - Regulatory Zoning, Planning and Permitting
- Project Management
- Equipment & Antenna Installation
- System Optimization & Testing
- Maintenance

Small Cells are well-suited to many internet of things use cases ranging from the current fragmented IoT market using short range wireless technologies to the LTE enabled NB-IOT/LTE-M scenarios and all the way up to the final incorporation of the vertical IoT industries in 5G, where small cells will become critical.

DAS SOLUTIONS

Wireless customer satisfaction is the result of excellent end user experiences on faster and consistent networks. Over 50 percent of all calls and wireless data sessions originate or terminate inside buildings, illustrating the importance of in-building coverage and capacity for a customer's wireless experience. We review criteria, such as providing coverage for multiple frequency bands and simultaneously supporting multiple carriers through a complete solution portfolio.

RIGHT OF WAY AND COLLOCATION

The 5 Bars team has extensive experience with obtaining right of way and collocation facility access. The process of utilizing existing pole structures as Points of Presence (PoP) is a growing requirement and capability. Working for and with facility-based network providers, we have established Collocation PoP's in ILEC facilities.

With 22 States adopting new Small Cell regulations in 2018, Texas Local Government Code Chapter 284 leads the way putting priority on the importance of properly deploying network nodes in the public Right-Of-Way. 5 Bars prides itself on fully understanding the new codes ensuring that our customers can have the confidence that their permitting and engineering meet the new requirements and challenges of 5G Small Cell deployment and beyond.

NETWORK DESIGN & PLANNING

Our expert team utilizes the four stages of planning in our disaster recovery preparedness: assess, prepare, respond, and recover. We offer extensive capabilities in disaster recovery operations, including recovering cable systems, electrical support systems, Whether the customer is

defining coverage, expanding capacity, or overlaying technologies, 5 Bars can aid through implementation. Our team's long-established relationships with equipment manufacturers provide a full assortment of system enhancements and many upgrades ranging from tower mounted amplifiers, cross pole and space diversity, in-building coverage, design, and testing, and E-911 wireless system deployment.

SMALL CELL WIRELESS TECHNOLOGY

Small cells, like full-sized cellular towers, provide access points for individuals to browse the internet, send and receive text messages, and make phone calls. However, unlike cellular towers, small cells take up significantly less space and can be placed in locations where traditional cell towers can't be deployed.

Small cells, when compared to traditional counterparts, differ greatly in implementation. Small cells tend to be utilized more in dense urban environments compared to traditional installations utilized in rural areas.

WHY CHOOSE SMALL CELL NETWORKS

Mobile users have an insatiable thirst for bandwidth and with the introduction of smart city initiatives across the country, the need for increased bandwidth is growing at an exponential rate. As a result, carriers have been forced to increase the size and scope of their data networks, especially within urban cityscapes where space is a highly prized asset.

CREATING MORE CONNECTIVITY

Cellular providers across the United States have been struggling to keep up with an increasing demand for more data. As a result, generating new connectivity channels by offloading traffic from existing networks onto new complementary networks ensures enough available bandwidth for new users. This is where small cell technology comes in.

Small cell networks provide cellular companies with a quick and inexpensive alternative to expanding their bandwidth capacity. Small cell deployment allows cellular providers to alleviate network strain where there is a need for bandwidth.

Additionally, due to low radio power levels, mobile users that are connected to a small cell site should also experience better battery life, making mobile devices on their networks operate more efficiently while transferring

data. Currently, small cells are compatible with any existing 3G or 4G mobile device.

The dynamics of small cell technology provides cellular companies with the capacity to quickly expand their network coverage over a specific area while offering a better experience for consumers. With vast benefits regarding installation, maintenance, and user experience, we can anticipate a rapidly growing adoption of this technology in the years ahead.

SMALL CELL INSTALLATION LOCATIONS & LEASES

Due to the varying sizes of small cell architecture, the range of locations suitable for installation is virtually limitless. Ideally, small cell sites need a clear line of sight to the area around them, such as a rooftop, flagpole, streetlamp, or other similar locations. For indoor locations, small cell installations can be integrated into the ceiling or other structures, such as business signs, to broadcast the signal within the walls of the facility.

BENEFITS FOR PROPERTY OWNERS

Small cell technologies present a great opportunity to increase revenue streams of property owners, as wireless providers one needs to lease part or all the location they wish to use for their wireless equipment.

The 5 Bars team maintains relationships with all major wireless providers. This allows 5 Bars to navigate the increasingly complex wireless landscape, to deliver the optimal revenue and coverage solutions to our clients.

A SINGLE POINT OF CONTACT

With the highly qualified 5 Bars team, you can strengthen and diversify your supply chain with one contract and one point of contact with a commitment to honesty, integrity, and customer satisfaction. Our team consistently uses small and diversified businesses as our partners to fulfill the mission and increase value for the customer.

