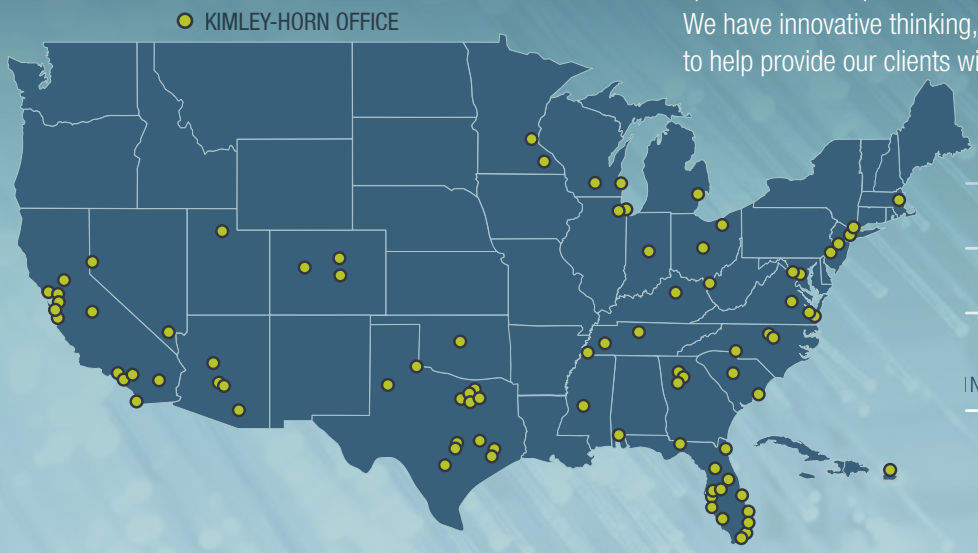
Kimley»Horn

EXPECT MORE. EXPERIENCE BETTER.

About Us

Kimley»Horn

Kimley-Horn is a national engineering, planning, and design consulting firm that specializes in telecommunications. With fifty years of experience, Kimley-Horn's specialized team provides solutions for cell sites throughout the United States. We have innovative thinking, dedicated professionals, and the proven experience to help provide our clients with a successful network rollout.



85+ OFFICES

4,100+ PROFESSIONALS

LICENSED IN ALL **50 STATES**

#1 *FORTUNE'S* BEST COMPANIES IN CONSULTING AND PROFESSIONAL SERVICES

#20 TOP 500 DESIGN FIRMS
ENGINEERING NEWS RECORD

TYPICAL MARKET SECTORS

- TELECOM
- BIG BOX RETAIL
- HEALTHCARE
- NATIONAL PRIVATE LAND DEVELOPMENT
- EDUCATION
- RENEWABLE ENERGY
- RESIDENTIAL
- ROADWAY
- AVIATION
- TRANSIT
- PERFORMANCE VENUES
- TRANSPORTATION

Full-Service Consulting

As a full-service consulting firm, we provide our clients with a wide-range of services under the management and quality control of one firm. This offers our clients more consistency, increased productivity, and less overlap.

Local Knowledge National Presence

With more than 85 offices nationwide and experience in all 50 states, we can offer our clients the knowledge and responsiveness of a local firm backed by the resources of a national firm.

Shifting Practice

Because we function as one firm, we have the ability to shift resources from any office at any time throughout a project. This unique practice allows us to offer the best team for any project—regardless of project schedule, size, or location.

Our Telecommunications Practice

Kimley-Horn's telecommunications professionals have continued to follow industry trends during the rapid rise of technology during the last two decades. Our specialized team has successfully stayed ahead of the learning curve, providing our clients with innovative solutions. With decades of specialized experience, we are well-positioned to serve our clients nationwide. Our clients include major telecom companies, utility companies, internet service providers, private developers, municipalities, and public institutions and organizations.

CIVIL ENGINEERING

- Aerial Fiber Design
- DAS Design Drawings
- Headend Room Design
- Rawland Site Design
- Retaining Wall Design
- Site Construction Drawings
- Site Grading Design
- Small Cell Node Design
- Traffic Management Plans
- Underground Fiber Design
- Zoning Drawings

ENVIRONMENTAL ENGINEERING

- Bird Studies
- Environmental Studies
- Hazardous Material Assessment
- NEPA/SHPO/THPO
- Phase I/II
- Soil and Groundwater Sampling
- Tribal Consultation
- Wetland Delineation

RF ENGINEERING

- In-Building Coverage Design
- Intermodulation Analysis
- RF Design

GEOTECH

- Compaction Testing
- Geotechnical Studies
- Groundwater Study
- Rock Coring
- Soil Boring
- Soil Resistivity Testing
- Soil Stability Study
- Water Drainage and Retention Design

PLANNING & MANAGEMENT

- Carrier Coordination
- Construction Management
- FAA Filing and Studies
- Feasibility Studies
- Lease Exhibits
- Leasing
- Permitting
- Pole Attachment Agreements
- Program Management
- Public Hearings
- SCIP Packages
- Site Coordination
- Site Selection
- Utility Coordination
- Zoning

ELECTRICAL ENGINEERING

- Electrical Upgrade Design
- Grounding Design
- Load Studies
- Power Distribution Design

STRUCTURAL ENGINEERING

- Concealment Structure Analysis
- Foundation Design
- Foundation Modification Design
- Mount Analysis
- Node Analysis
- Platform Design and Analysis
- Rooftop Analysis
- Structural Modification Design
- Tower Analysis
- Tower Extension Design
- Utility Structure Analysis
- Watertank Analysis

FIELDING

- Construction Observations
- Fiber Fielding
- Forensic Investigations
- Foundation Mappings
- Guy Anchor Inspections
- Material Testing
- Mount Mappings
- Post-Installation Inspections
- Site Audits
- Small Cell Node Fielding
- Special Inspections
- TIA Inspections
- Tower Mappings
- Utility Audits

SURVEY

- 1A/2C Survey
- Boundary Survey
- Construction Staking
- GIS Databasing
- Legal Descriptions
- LiDAR Mapping
- RF Benchmarking
- ROW Survey
- Title Review
- Topographic Survey
- Utility Location

GRAPHIC DESIGN

- 3D Modeling
- Drone Video & Photos
- Photo Simulations
- Proposal Preparation
- Site Renderings

MECHANICAL ENGINEERING

- HVAC Design/Upgrade
- HVAC System Analysis

Kimley»Horn

STRUCTURAL AND MODIFICATION SERVICES

Kimley Horn has a vast amount of knowledge pertaining to infrastructure engineering. Our group of specialists are active member of telecom code writing committees and policy advisors to several major carriers and tower owners nationwide. Our dynamic team composed of structural engineers, civil engineers, and structural drafters uses the latest software and CAD technology to ensure our client's structures are accurately represented through a rigorous structural analysis. We work proactively and as a consultant to fairly apply the applicable codes and allowable exceptions in order to maximize the value and marketability of our client's assets.

Our in-house telecom professionals design efficient modifications—considering economics and constructibility throughout the entire process.

Software

- TNX Tower
- RISA 3D
- PLS Tower
- STAAD Pro

Structure Types

- Towers
- Mounts
- Utility Structures
- Rooftops
- Water tanks
- Concealment Structures
- Equipment Frames and Platforms
- Small Cells

Kimley»Horn

MACRO SITE DEVELOPMENT
SERVICES

Kimley-Horn has assembled a specialized telecommunications site planning and development team composed of knowledgeable and experienced telecom specialists, site civil engineers, structural engineers, transportation engineers and planners, environmental scientists, and mechanical and electrical engineers. Our in-house team of professionals have the proven experience to seamlessly get our client's initiatives in the air and operational. Our national team has in-depth experience with difficult sites and prides itself on being creative and finding solutions to provide our clients with quick, cost considerate, and buildable plans.

Project Types:

RAWLAND/GREENFIELD SITES

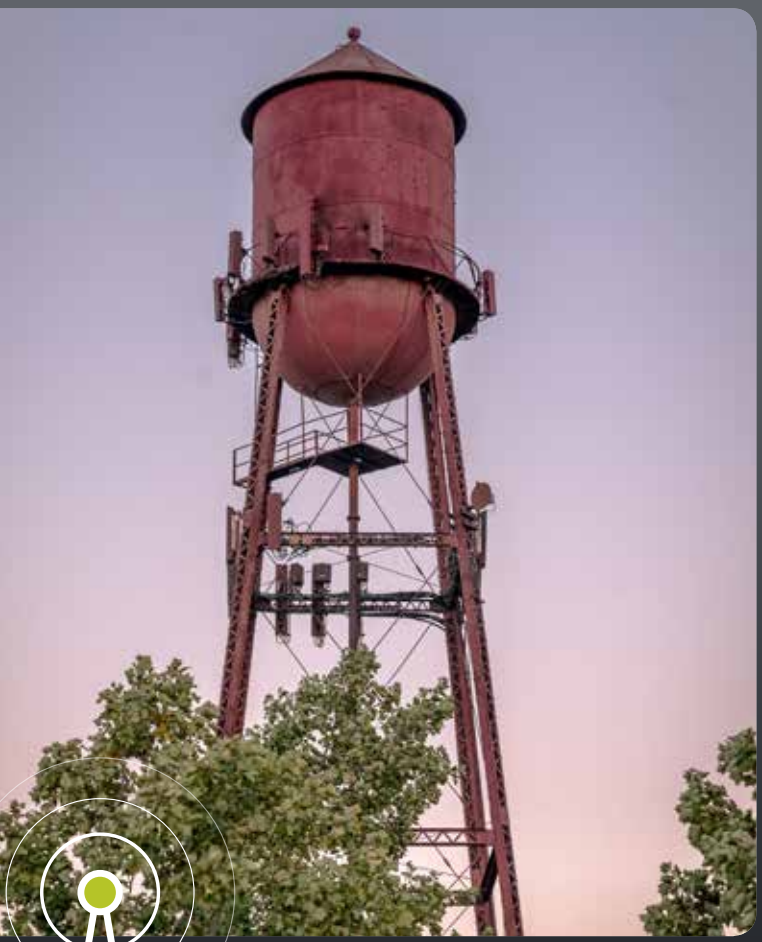
NEW CARRIER COLOCATIONS

CARRIER EQUIPMENT MODIFICATIONS

UTILITY STRUCTURE COLOCATIONS

ROOFTOP SITES

CONCEALMENT DESIGN



Tasks:

Zoning

- Zoning Drawings
- Zoning Hearings
- Public Notice
- Balloon Studies

Planning and Permitting

- Feasibility Studies
- Site Audits
- Construction Staking
- Permit Applications
- Building Department Meetings
- Expeditors
- Construction Document Preparation
- Post-Installation Inspections & Closeouts

Engineering

- Construction Drawings
- Tower Design
- Foundation Design
- Site Survey / Boundary Survey
- Electrical System Engineering
- HVAC System Engineering
- Site Grading Design
- Retaining Wall Design

Kimley»Horn

DISTRIBUTED ANTENNA SERVICES (DAS)

In-building communication networks are essential to network reliability and public welfare. As public safety communications continue to merge onto cellular platforms, this communication becomes more important than ever. At Kimley-Horn, we have an experienced staff of engineers and designers dedicated to the design of distributed antenna systems (DAS) for all future and anticipated demand needs. Our staff has the ability to oversee all tasks through preliminary design to the final implementation and support of your in-building or outdoor DAS system.

Process:

Planning
- Feasibility Analysis
- Capacity Analysis
- Carrier Coordination

Design Visit
- Site Audit
- RF Benchmarking
- Electric System Audit/Load Studies
- Structural Measurements
- Construction Routing

System Design
- RF Design
- Electrical Design
- Structural Analysis
- Headend Room Design
- Line and Antenna Construction Drawings
- Link Budgets
- Cost Estimates & Proposals

Integration
- Permitting
- Facility Coordination
- Contractor Management
- Material Procurement
- Carrier and Owner Coordination
- Tracking and Reporting
- Measurements and Troubleshooting

Optimization
- Carrier Coordination
- System Verification and Acceptance
- Post-Installation Benchmarking
- RF Closeout Documentation
- As-Built Closeout Documentation

Support
- Remote Monitoring Coordination
- Periodic Maintenance and Measurement
- Troubleshooting

Kimley»Horn

FTTx DESIGN CAPABILITIES

Kimley-Horn's experienced telecom professionals specialize in designing and engineering Fiber to the X (FTTx) networks. Our success is a direct result of our knowledge and the quality of our engineering process. Our process begins with a thorough understanding of our client's goals and the project scope and requirements, then we perform an assessment of the project scope to identify critical components necessary for a high-quality design. We have performed fiber design services for major telecommunication companies, internet providers, universities, and business through the United States. Our services include fiber-optic installation plans, conduit and manhole installation, and building penetration designs.

Our fiber suite of services includes:

- Fiber design drawings and splice schematics
- Fiber pathway and feasibility study
- GIS data collection
- Utility engineering and ROW surveying
- Aerial and underground fiber engineering
- Utility structure analysis
- Make ready engineering
- Pole attachment agreements
- As-built documentation
- Traffic management plans

Relevant Projects

Triangle Fiber Duke University
Durham, NC

Kimley-Horn provided services for 100 miles of broadband for 75 sites on Duke University's campus. Sites included educational, research, and medical facilities. Kimley-Horn's services included map and route development, construction drawings for fiber backbone and fiber sites, and developing permit applications for the North Carolina Department of Transportation (NCDOT) and other state agencies, and approximately 16 railroad permits.

Golden LEAF North Carolina Rural Broadband Initiative
Sitewide, NC

Kimley-Horn provided services for 1,200 miles of fiber for MCNC's expansion of broadband services for the K-12 school systems and other institutions throughout North Carolina. Kimley-Horn's services included environmental assessments, map and route development, construction drawings, developing permit applications for NCDOT and other state agencies, utility companies, and railroad companies, site plans for 21 regeneration huts, and construction administration services.

Florida Turnpike Fiber Utility Design and Relocation
Palm Beach and Broward County, FL

MCNC, Triangle Fiber
Raleigh, NC

Eastern Kentucky Dark Fiber Infrastructure Feasibility Study
Multiple Locations, KY

City of Plano Small Cell and Fiber Design
Plano, TX

Kimley»Horn

SMALL CELL
CAPABILITIES

Kimley-Horn supports wireless carriers with small cell deployment throughout the country. We identify, assess, and engineer thousands of small cell nodes for new and existing structures to increase our client's need for capacity and coverage with a focus on 5G. We have created a program process and set a precedent with our efficiencies for identifying and engineering small cell nodes. In addition to working with local utilities and municipalities, we partner with our clients and local jurisdictions to permit and approve our designs as quickly as possible.

Our Small Cell Design Process

Site Identification
We assess communities and municipalities by using GIS as well as field visits to capture, store and assess location, utilities, and pole data.

Site Application/Analysis
Upon acceptance of site locations, we prepare and submit pole attachment applications to owners. And if required, we prepare and provide structural analysis of the identified poles.

Site Engineering
For each site, we prepare a plan set of construction drawings for the client to review. Each set includes site location, equipment details, structural calculations, construction drawings, and traffic control plans.

Utility Coordination
We meet with power utility planners to determine design and routing of power. Once identified, we supply a fiber plan and special construction costs—if any—to the client.

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