



MINTZ

DISTRIBUTED ANTENNA AND IN-BUILDING WIRELESS SOLUTIONS

PACIFIC TELECOM COUNCIL, Honolulu, Hawaii

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IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

- The Absolutely Key Consideration
 - DAS is an amenity that is becoming a necessity
- Tenants’ site selection decisions increasingly consider available telecommunications infrastructure
 - 87% of tenants rank connectivity second only to location
 - 84% of tenants would pay more per square foot for a space with better connectivity



IN BUILDING SOLUTIONS – KEY CONSIDERATIONS (cont.)

- DAS enables state of the art technology
 - Supports tenants networks
 - Supports visitors cell phones and data
 - Enables IoT and applications to control operating costs
 - Enables more devices to communicate with Building Management Systems
 - Provides improved security over WiFi



IN BUILDING SOLUTIONS – KEY CONSIDERATIONS (cont.)

- Three business models:
 - Owner Installed and Operated
 - Third Party Installed and Operated
 - Carrier Installed and Operated

IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

Risk & Rewards	Owner Installed	Third Party Installed	Carrier Installed
1. Owner Control	Yes	Some	Some
2. System Versatility	Owner Controls	Installer Controls	Carrier Controls
3. Ease of Installation:			
a) New Construction	Yes	Yes with coordination	Yes with coordination
b) Retrofit	Yes	Yes with coordination	Yes with coordination
4. Owner Time Commitment	Substantial	Supervisory and Plan Review	Supervisory and Plan Review
5. Owner Capital Expense	Substantial Pending Carrier Reimbursement	Minimal Cost for Consultants if not Reimbursed	Minimal Cost for Consultants if not Reimbursed

IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

Risk & Rewards	Owner Installed	Third Party Installed	Carrier Installed
6. Owner Capital Expense	System Cost, Consultants Fees, Possibly Plus Owner Profit	System Cost, Financing Costs, Consultants Fees and Profit	Most Cost Effective for Carrier
7. Owner Operating Expense	Consultant Costs if Not Reimbursed	Same	Same
8. Carrier Operating Expense	System Operating Expense	Same	Most Cost Effective for Carrier
9. Who Watches Who	Carrier Watches Owner	Owner and Carrier Watch Third Party	Owner Watches Carrier

IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

Risk & Rewards	Owner Installed	Third Party Installed	Carrier Installed
10. Headache Factor	Headache for Carrier and Possibly for Owner	Same	Headache for Owner
11. Major Risks to Owner	Cost Overruns and Failure to Get Carriers	Profit Drives Decisions	Lack of Carrier Neutrality and Equality
12. Major Risks for Carrier	Will Owner Deliver on Time and on Budget	Profit Drives Decisions	Will Owner Timely Cooperate

DAS EXAMPLES

- Owner Installed
 - Madison Square Garden, NY, NY
 - The Sphere at the Venetian, LV, NV
 - Durst Residential Portfolio
- Third Party Installed
 - Boston Properties Office Building Portfolio
- Carrier Installed
 - Golden State Warriors Chase Center, SF
 - New York Islanders UBS Arena, LI, NY



FIRST RESPONDER SYSTEMS

- Prompted by September 11th World Trade Center communications problems
- Emergency Responder Radio Coverage System (ERRCS)
- Required by National Fire Protection Association (NFPA) and the International Fire Code (IFC)
- Generally not required for existing buildings
- Must be separate system from DAS



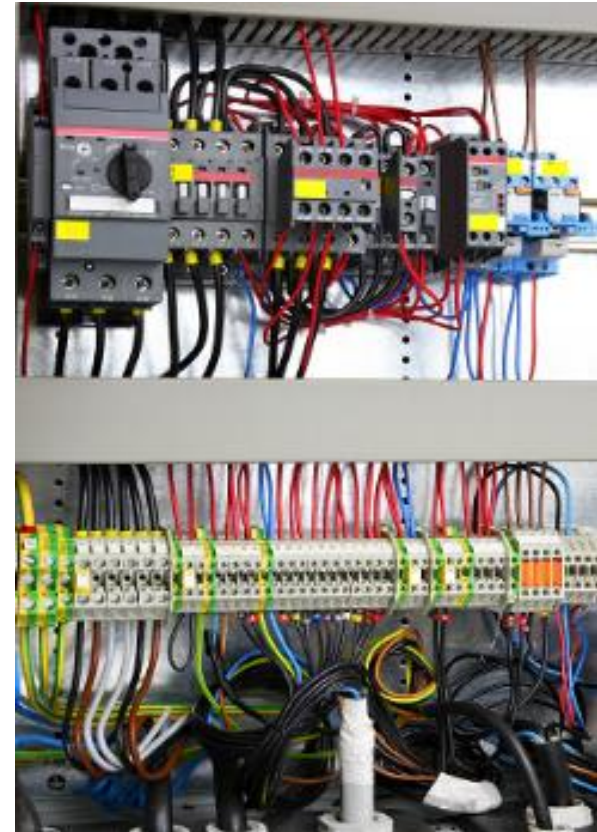
FIRST RESPONDER SYSTEMS (Cont.)

- Can be cost effectively installed at the same time as a DAS system
- Can be leaky coax or radio repeater system
- Transmitter at fire command center in lobby
- Must transmit individual firefighters radio ID number
- Backup power required
- Ongoing system maintenance and testing required



IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

- Business and Legal Issues
 - Diverse, Redundant POE’s, Routes and Fiber is Required
 - Revenue Disruption Risk – Watch the Core Business
 - Obligation to Install System
 - Frequency Coverage of System
 - Timing of System Installation
 - Will the System Really be a Neutral Host
 - Landlord Liability Concerns



IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

- Term, Renewal Options and Cancellation Options
- No Charge for Rights or Payment to Owner: Flat Fee or Percentage Rent and Rent Increases
- Creditworthiness of Party
- Security and Control of Risers
- Lease vs. License Agreement
- Subordination Provision and Non-Disturbance Agreement
- Assignability



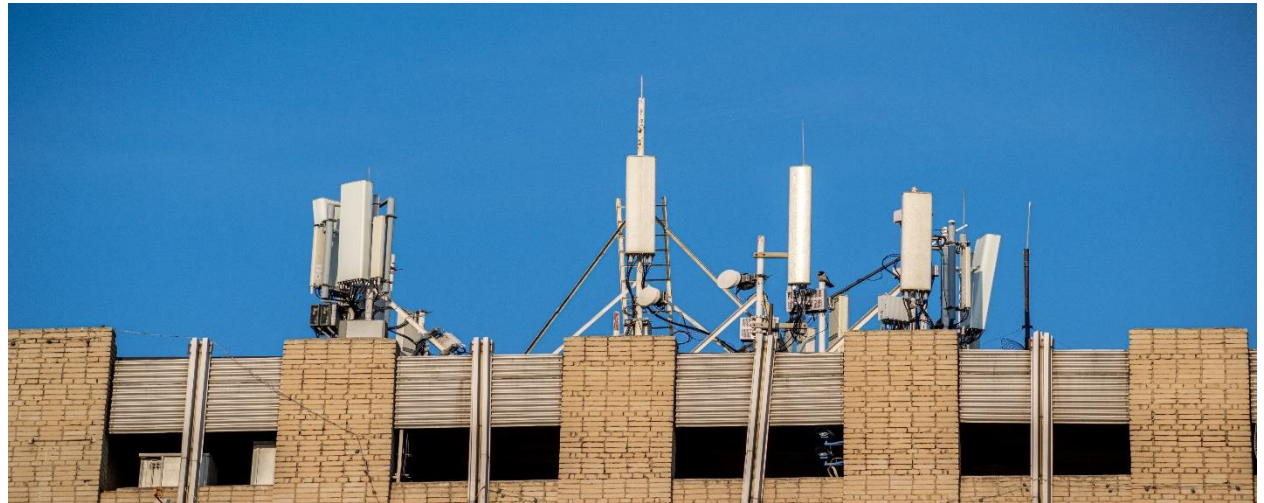
IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

- Alterations and Plan Approval
- Use Clause and Exclusivity
- Location of Equipment Space and Riser Space
- Electrical and Other Utility Connections
- Owner's Right to Use System
- Interference with Other Telecommunications Equipment
- Restoration at End of Term



IN BUILDING SOLUTIONS – KEY CONSIDERATIONS

- Compliance with Laws
- Relocation
- Buildout in Occupied Space Where Tenant Doesn't Want Antennas Installed
- Service Level Agreement
- Right to Upgrade Equipment
- Exterior Building Cellular Antennas or Exterior DAS
- Dispute Resolution



SPEAKER INTRODUCTION



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Jeff is the head of the Real Estate and Communications practices in New York. During the past 30+ years, he has developed a unique specialty practice in the intersection of real estate with technology, communications, and energy issues. He has extensive experience representing landlords, tenants, and communications service providers in the leasing, purchase, sale, and financing of data centers and switch facilities, colocation facilities, radio and television broadcast antennas, distributed and in-building antenna systems, rooftop antennas, and fiber-optic transactions as well as the wiring of buildings for broadband communications access. Jeff has also negotiated thousands of rooftop and cellular antenna leases, inside wiring agreements, antenna tower leases, and data center, colocation and switch facility leases throughout the country — covering over 500 million square feet.

QUESTIONS? FEEL FREE TO CONTACT ME:



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