

Preface: Telecom Rooms (TRs)

13 factors that influence Telecom Room performance

You may know them as MDFs, IDFs, or by some other acronym.

Whatever you call them, the spaces dedicated to housing IT equipment are among the most important in your district to maintain digital connectivity among and between IP-based systems including security, life safety, instructional, and wireless access.

If your district's Telecommunications Rooms (TRs) are in disarray, there's a good chance that critical infrastructure behind the ceilings and walls—cables and pathways—is in equally poor shape.

These conditions can also cause operational issues (e.g., intermittent errors) with existing and newly installed technology systems.

What makes a poor TR bad...

[2] Overhead utility pipes leave racks susceptible to damage from leaks/bursts.

[11] Poor room construction with no deck access and poor cable penetrations.

[3] Location lacks direct hallway access and the Serving Zone distance is greater than 300'.

[8] Lack of grounding infrastructure increases risk of electrical shortage and equipment damage.

[4] Unsecured, shared space creates a life safety and security risk as well as causing possible accidental damage.

[7] Lack of Uninterruptible Power Supply (UPS) or emergency power source creates life safety risks during power outages, and reduces equipment lifespan due to a lack of conditioned power.

[2] Dirty, dusty environment increases risk of operating issues with rack components and reduces equipment lifespan.



[13] Hard ceiling inhibits inspection and serviceability, and limits airflow while trapping heat.

[9] Overhead cable management is lacking putting cables at risk of damage.

[6] No dedicated and redundant power. Both a dedicated circuit and a power outlet from a building generator are needed.

[10] No cable management or correct termination at the rack can cause operational issues and makes troubleshooting difficult.

[1] Room size and inadequate rack clearances inhibit serviceability.

[5] No environmental controls increases risk of equipment overheating.

[12] Floor tile is not anti-static increasing risk of Electro-Static Discharge.

13-Point Checklist for IT Equipment Spaces

1. Size with 3' clear space front and back
2. No risks of water damage.
3. Environment/location/hallway access
4. Secure/dedicated space or locked cabinet
5. Environmental controls
6. Dedicated, redundant power
7. Uninterruptible Power Source (UPS)/ Emergency Management (EM) power
8. Grounding infrastructure
9. Overhead cable management and fire-retardant plywood
10. Cable termination and management at the rack
11. Room construction with walls extended to deck, and compliant, sealed cable penetrations
12. Vinyl-Coated Tile (VCT) flooring
13. Ceiling open to deck with minimum height of 10'

...and a good TR great.

[1] Room size allows rack front and back clearances.

[2] Water risk. No nearby utility pipes, drains, or custodial slop sinks.

[3] Location provides direct hallway access and is centrally located in the Serving Zone.

[4] Security. Secure or dedicated space, or locked cabinet, with IP camera coverage and access control.

[5] Environmental control. AC and exhaust fan with independent controls in same room.

[8] Grounding infrastructure including a Telecommunications Grounding Busbar (TGB) is installed.

[7] UPS/EM Power. Uninterruptible Power Supply and/or Emergency Power source.



[13] Ceiling. Open to deck with 10' minimum height

[9] Overhead cable management and fire-resistant plywood wall are installed. Overhead ladder racks reduce strain on cabling and improve performance.

[10] Cable Termination and Management. Adequate racks/cabinets and cable management. Horizontal and vertical management systems are in the rack to reduce strain on cabling and improve performance.

[11] Room construction. Walls extend to deck. Cable penetrations are compliant and sealed (fire stopped).

[6] Power. Dedicated circuit with circuit ID labels from two different panels.

[12] VCT flooring. Anti-static tile.