

# PLANNING A NEW DATA CENTER?

When you peel back all the layers of the data center, its ultimate success depends on **maximizing operational effectiveness and efficiency** so you can stay competitive.

Two primary factors that determine uptime and competitiveness involve the selection of equipment purchased and good design/engineering practice.

Get them right and you'll be well-positioned for optimal success.

Get them wrong and you can expect your data center to face challenges that compromise its efficiency, effectiveness and longevity.

**KEY FACT:** One of the most critical and first decisions you'll have to make that impacts your operation and competitiveness is how mechanical and electrical services are distributed throughout the data center...

...many don't discover that until it's too late.

**Here are some of the air, power and cable considerations that often aren't factored into design decisions:**

- The methodology used to distribute those services and the impact that decision has on the effectiveness and efficiency of the facility initially and long-term;
- The effects of the distribution method on related issues such as effective and efficient cooling of IT hardware, type and size of cooling units selected, and effective redundancy of the A/C equipment;
- The quantity of cabinets that will fit in the space and their kW density;
- The distribution method chosen for air determines whether containment is required, which in-turn impacts sprinklers, smoke detectors, lighting and security;
- Power and cable distribution has an effect on airflow, ceiling heights, roof structure, and worker access for the life of the building;
- The overall flexibility to move, add and make changes in equipment;
- The CAPX and OPEX...all of which will impact competitiveness, revenues and margins.

## The Mistakes You Want to Avoid

With many decision makers involved, some may not have an intimate understanding of what's happening in the room and will be unaware of these inevitabilities:

- Not all the servers in a cabinet are getting the air they require.
- The room's design is limited because of inefficient air distribution which results in more costly and burdensome wire and cable distribution.
- Your needs will constantly be changing more than one may think.

# SO, WHAT'S THE SOLUTION...

Choose an effective and efficient air, power and cable distribution methodology...BEFORE you design your data center.

And, be prepared to accommodate changes so they have a minimal impact on operations, leaving you with a LifeLong Building System - not a day one solution.

## **A Few BENEFITS that Make our TIER E/A Electro-Mechanical Distribution System Superior to a Conventional Raised Floor or an On-Slab Design**

### **BENEFIT #1: TIER E/A separates air flow from wire distribution which gives you a practical and flexible environment.**

*The air plenum is pressurized which means air will be precisely distributed to servers over much larger areas. This means rooms can be configured differently so the space is utilized more efficiently. This gives you the ability to install more cabinets in the same overall space or construct smaller rooms.*

### **BENEFIT #2: TIER E/A's effective air distribution eliminates the need for costly containment methods.**

*Containment is necessary for on-slab applications and used widely with conventional raised floors. The TIER E/A solution allows data centers to be built without the need for costly, burdensome containment methods.*

### **BENEFIT #3: TIER E/A provides genuine N+1 redundancy ensuring maximized uptime.**

*Redundancy of cooling equipment is paramount for the effective uptime operation of a data center for service and in the event of failure. Effective N+1 redundancy is not achievable with on-slab or raised floor applications because of A/C equipment limitations and placement.*

### **BENEFIT #4: TIER E/A's unique upper wireway makes cable distribution and modifications simple and easy.**

*The cost to distribute power cables and/or busway and structured cabling overhead is far more time consuming and costly than underfloor. One customer completely installed all the power cables for 232 cabinets...in one day! This also makes moves, adds and changes easier and faster for both power and structured cable.*

The TIER E/A underfloor data center air and wire distribution methodology positions you for operational efficiency and effectiveness.

**NEXT STEP:** Contact us and let's discuss your needs and HOW we can save you time and money with our unique data center air and wire distribution system.



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