DEMAND FOR DATA CENTER DEVELOPMENT

The demand for new data center developments in the U.S. is soaring, according to the recent North American Data Center Report released by JLL. According to JLL, this demand is being fueled by the rise of AI and continued growth in the cloud markets. A growing concern with increased demand is energy consumption, rising costs, and climate change. As trusted consultants, RTM's focus is on how to reduce these costs and concerns while providing reliable design solutions. By leveraging innovative technologies and best practices, we tailor our strategies to meet the unique needs of each client.

MARKET CONSIDERATIONS

Energy Consumption

Energy consumption is a significant concern in data center developments due to the substaintial amount of power these facilities require to operate and cool servers. Data centers are critical for supporting the digital infrastructure of modern society, however their energy-intensive nature contributes to environmental issues. As a result, there is a growing emphasis on designing energy-efficient data centers, utilizing renewable energy sources, and implementing advanced cooling technologies to mitigate their environmental impact.

Rising Costs

The rising costs associated with the demand for data center development are driven by several factors. As the digital economy expands, the need for robust reliable data storage is growing, leading to increased investment in data center infrastructure. Key cost drivers include energy costs, land and construction costs, technological upgrades, and cooling control. These rising costs present a significant challenge, prompting the industry to seek innovative solutions.

Climate Change

The demand for data center developments has a notable impact on climate change and contributes to greenhouse gas emissions in several ways. High energy consumption, the carbon footprint of data centers, heat generation by servers, the construction and maintenance of the facilities, and emissions throughout their lifecycle are important factors. Design initiatives should aim to reduce the carbon footprint of data centers and align their growth with global climate goals.
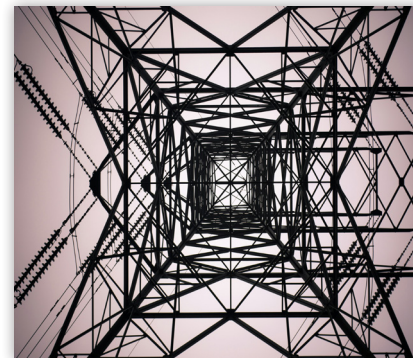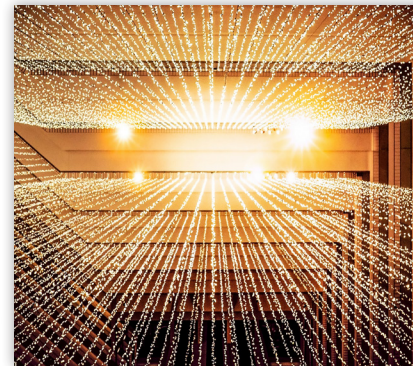
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OUR EXPERIENCE & STRATEGIES

RTM works with clients of mission critical facilities to determine each building's needs in terms of reliability, flexibility, security, power, and speed. Our data center experts design cost-effective and energy efficient systems to ensure these facilities operate continuously, 24/7, all year round. We offer specialized services including low voltage and security management system design for various projects from mid-sized data centers to large network operation centers.

As technology advances, or changes occur within a facility, RTM provides continued consultation to maintain operational efficiencies and functionality.

Trends we are seeing in data center design include:

- Hot aisle containment to increase cooling system efficiency using CRAH systems (Computer Room Air Handler)
- Enclosed hot aisle containment using in-row cooling modules, either DX or chilled water
- Using 415/240V power distribution to the customer equipment racks
- Using distributed redundancy in lieu of traditional N+1 types of systems
- Immersion liquid cooling

As a partner to our clients, we aim to not only meet current demands but also anticipate future challenges, ensuring that our clients are always ahead in the dynamic landscape of data center development.
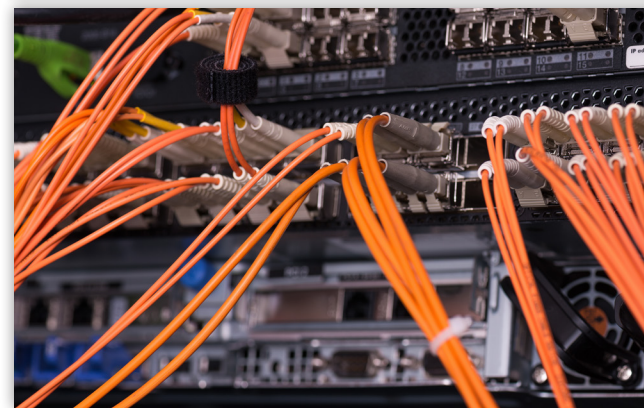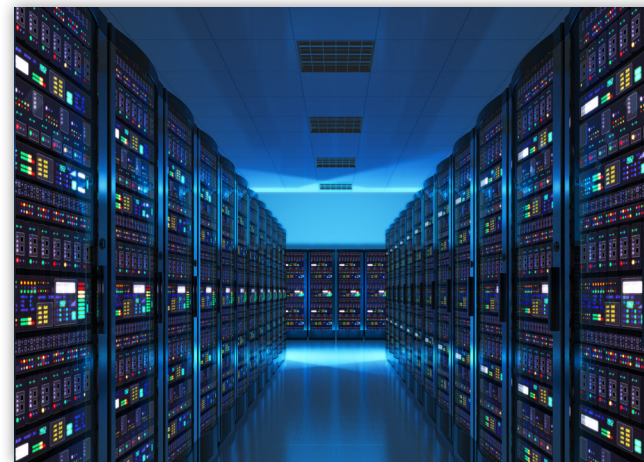
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