

Data Center Site Selection



Article Overview

Selecting the right site for a data center is critical, with power availability, connectivity, disaster risk, and regulatory compliance being the top considerations.

Key Considerations

Power Availability: Reliable and scalable electricity is the most critical factor. Modern data centers, especially AI-focused facilities, require massive power capacity, often exceeding 100 megawatts and potentially scaling to over a gigawatt. Developers must assess local grid stability, redundancy options, and access to renewable energy sources to ensure continuous operation and cost efficiency . **Connectivity:** Proximity to major internet hubs reduces latency and improves network reliability. Sites near established data center markets like Northern Virginia or Dallas-Fort Worth offer robust fiber infrastructure and faster data transmission . **Natural Disaster Risk:** Avoiding flood zones, seismic fault lines, wildfire-prone areas, and other hazards is essential. Tools like FEMA floodplain maps and hydrological models help evaluate site safety. Even minor risks can increase costs and operational complexity if mitigations are required . **Regulatory and Compliance Requirements:** Understanding local zoning, building codes, environmental regulations, and TIA-942-C standards ensures the site meets Tier-equivalent infrastructure requirements. TIA-942-C defines mandatory and recommended criteria for flood setbacks, EMI/RFI protection, lighting, occupancy, and security, which are critical for long-term operational resilience . **Cooling and Environmental Factors:** Long-term cooling solutions must be feasible based on local climate, water availability, and energy efficiency goals. Sites should allow for scalable mechanical systems to handle future growth . **Financial and Community Considerations:** Tax incentives, land costs, and community support can influence sit...

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