

Data centers are critically essential facilities. This level of importance necessitates a significant investment in the selection of a new data center site – whether utilizing an existing facility or constructing a new building. A number of technical standards are utilized when considering the design of these facilities, including the *Telecommunication Infrastructure Standards for Data Centers* (TIA-942), from the Telecommunications Industry Association and *Thermal Guidelines for Data Processing Environments*, from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Before utilizing these references, though, a number of design questions must be considered, starting with the site itself and working into the details of the construction.

Site Selection

- » Does the site provide sufficient utility infrastructure?
- » Is site drainage sufficient to mitigate any susceptibility to flooding?
- » Does the site provide adequate security?

Structure Basics

- » How much room is required?
- » Is there adequate room for future expansion?
- » If an existing structure is being considered, is the building in good condition?
- » If a new structure will be built, what type of structure will be selected?

HVAC and Electrical Considerations

- » Is there adequate power to the site?
- » What level of redundancy is required in the building systems?
- » What level of emergency power is required?
- » What type of HVAC system will be utilized?
- » What type of Uninterruptible Power Supply (UPS) will be utilized?
- » Will a gas based fire suppression be required in addition to a water based system?

By carefully considering these questions early in the process, all criteria can be considered when selecting a site, building, and equipment. Having a full understanding of the design considerations will not only lead to a facility that best meets your needs, but will allow for accurate cost estimating and project scheduling, leading to an overall better design experience. I&S is prepared to utilize our staff consisting of 10 design disciplines to assist you in the development of this significant plan.