As recent events like Hurricane Sandy and the Missouri tornadoes have shown us, natural disasters can wreak havoc on business systems. In fact, in 2011 the U.S. broke its record for billion-dollar weather disasters. The U.S. saw more weather catastrophes costing at least $1 billion in damage than it experienced throughout all of the 1980s.

Now add to the equation our increasing dependence on technology and the facilities we need to house it. The constant evolution of technology, along with companies’ increasing dependence on those IT systems to stay in business, drives the need for scalable and redundant IT infrastructure that support corporate data centers and ensure they won’t go down.

According to a research report by Emerson in 2011, the average cost of data center downtime across a variety of industry sectors was $5,600 per minute (i.e. $336,000 per hour). Those data center downtime costs can go up substantially in certain industry sectors such as financial services.

Where a company’s data center is located can have a downstream impact on its ability to continue to operate (i.e. uptime) and stay in business. Regardless of whether the building is designed to withstand hurricane force winds, unless all of the utility providers servicing the facility are designed to withstand the same, the facility is at risk.

Take for example the regional and local power infrastructure that supplies energy to corporate data centers. According to the United States Energy Information Administration (USEIA), in the five calendar years between 2007 and 2011 there were 582 “Major Disturbances or Unusual Occurrences” on the United States electrical system. Of those, over 67% weather or flooding related.

Site selection for corporate data centers is therefore a strategic and sequential process of elimination of locations based on risk mitigation, evaluation of utility infrastructure, fiber optic availability and latency considerations, accessibility by both employees and service vendors, economic considerations and more.

Companies operating data centers in areas of higher risk for natural disasters should expect higher frequency of downtime events. Failing to prepare for those events will leave a company exposed. These strategies should not be limited to the evaluation of a company’s own corporate data center but also to any third party service provider’s (e.g. colocation, cloud, managed services, etc.) facility.
key data center statistics

- In 71% of companies surveyed, the Corporate Real Estate or Facilities department pays for the power and utility bills for the organization (Source: Uptime Institute, 2012 Data Center Industry Survey).
- 60% of companies reported that their data center’s capacity will be sufficient for three years or less (Source: DCUG, Spring 2012 Survey).
- Server virtualization (53%) and server consolidation (46%) are the top two IT/data center initiatives companies surveyed are planning in the next 18 months (Source: DCUG, Spring 2012 Survey).
- 63% of companies surveyed use 2 – 8 KW per cabinet, with an average of 6.0 KW (Source: DCUG, Spring 2012 Survey).
- 29% of companies surveyed plan to build a new data center in the next 12-18 months; 37% plan to do so in the next 36 months (Source: Uptime Institute, 2012 Data Center Industry Survey).
- 24% of companies surveyed plan to lease colocation space in the next 12-18 months; 26% plan to do so in the next 36 months (Source: Uptime Institute, 2012 Data Center Industry Survey).
- 35% of companies surveyed plan to deploy workloads to cloud computing within 36 months (Source: Uptime Institute, 2012 Data Center Industry Survey).
- 42% of companies surveyed plan to update or upgrade their mechanical infrastructure within the next 12-18 months (Source: Uptime Institute, 2012 Data Center Industry Survey).

market trends

going green

Going Green and Saving Green

Cresa client PECI designs and manages energy efficiency programs for utility providers, government organizations and other clients. So naturally, when they were looking for new space, they were also looking for strategies to reduce utility usage, reduce their carbon footprint, and save real money in regards to cooling data centers and server rooms.

Cresa and PECI devised a plan that would contain the heat generated by the equipment, adjusted the set-point for cooling, implemented air-side economization, and made sure that timing was used to their advantage by identifying key goals and potential areas of savings early in the process, before buildings were toured or negotiations began.

PECI moved into its new space eighteen months ago and while the team continues to crunch data, the results have met expectations, and in some aspects exceeded them.

One of the byproducts of PECI's quest to have the “greenest” server room in Portland, Oregon resulted in them virtualizing and condensing their equipment, requiring only 1/5 the space of a traditional configuration, and they are continuing to reduce their space as they upgrade equipment. For instance, on one recent project they were successful in compressing 14 U of space (a “U” is tech-talk for a physical measurement of a device mounted in a rack) into 3 U which then reduced their number of power supplies from 10 to 2. Since less space required in an equipment rack means less racks needed, PECI achieved a smaller footprint. The smaller the footprint, the lower the cost of the real estate, utility bills, etc.

The end result of PECI’s server room strategy is that they are now using about 1/6 of the energy of the standard approach. Just ask your IT manager how many times your company’s dedicated cooling unit’s compressor has kicked on. Over the last eighteen months PECI’s has only come on during the weekends in the summer months. This is quite a difference from the traditional approach of continually cooling a space 24/7/365.
client corner

EMC

EMC is a leader in information infrastructure solutions, and the company needed to locate a new data center for its research and development and cloud computing initiatives. As energy consumption is a major cost component of data centers, finding low-cost power was a primary driver for where the facility should be located.

Cresa evaluated numerous potential locations throughout North America, looking at many factors including the availability, reliability and cost of electricity, economic incentives, security, fiber connectivity, and labor force. When the Raleigh/Durham, North Carolina area was selected as the optimum location, Cresa identified an ideal property to house the data center and negotiated its purchase on behalf of EMC. The 450,000 square foot building, purchased for $22 million, provided EMC with the necessary infrastructure on which to build the data center.

In addition, Cresa was instrumental in securing an incentive package valued at more than $8 million from state and local governments.

news flash

■ Cresa was featured in the inaugural ranking of Inc. Magazine’s Hire Power Awards, recognizing the private businesses that have generated the most jobs in the past three years.

■ Cresa was selected as Owners Representative/Project Manager for Republic of Turkey’s Consulate General and Permanent Mission to the United Nations.

■ Cresa Phoenix selected as 2012 Best Places to Work by the Phoenix Business Journal.

■ For the seventh year running Cresa Minneapolis has taken home third place honors at the annual Minneapolis/St. Paul Business Journal’s Best Places to Work Awards.

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tenant tips

There are a myriad of considerations when selecting a location for a new data center. Following are some of the key issues to keep in mind when evaluating a location:

Location
■ Company Needs: Does the center need to be close to headquarters or other regional office?
■ Risk Tolerance: Is the area at risk for earthquakes, hurricanes, tornadoes, and flooding?
■ Distance Limitations: Are the company’s data centers tethered to each other by bandwidth latency?
■ Utility Considerations: What is the cost, source and stability of the region’s utility sources (i.e. power and water)?
■ Financial: How do the regional and local costs (e.g. construction cost, taxes, etc.) impact Total Cost of Ownership? How do the incentives stack up?
■ Accessibility: Is the area easily accessible for the company’s employees and service technicians?
■ Talent: Is there a qualified workforce in the area?

Space/Property
■ Site: Is there a site of suitable size, with required setbacks and proximity to power, water and telecommunications infrastructure?
■ Building: Is there an existing building, of appropriate size with the required infrastructure (i.e. electrical and mechanical) and ancillary spaces such as office, storage, and staging?
■ Financial Structure: Which makes the most sense – lease or own?
■ Timing: Does the company have the time to both build-new and migrate or will existing options need to be considered?

Critical Infrastructure
■ Expected IT Hardware Deployment: What is the company’s current and planned equipment mix? What is the refresh cycle?
■ Software and Services: Does the company self-perform all critical services, out-source services to a third-party operator, etc.?
■ Power: What is the anticipated critical load, projected PUE, acceptable density and projected growth?
■ Water/Sewer: What is the anticipated GPD needed from the water provided?
■ Broadband: What providers are available, and what is their capacity to serve?
■ Redundancy: What are the acceptable redundancy levels of infrastructure?
the tenant’s bill of rights

Cresa is guided by the industry’s only Tenant’s Bill of Rights—a clear expression of what you can and should demand of your real estate advisor.

**Integrity**
You have the right to an advisor who does the right thing—always.

**Objectivity**
You have the right to an advisor who represents your interests only and will provide objectivity and full disclosure in partnership with you alone.

**Experience**
You have the right to an advisor with the experience, knowledge, and team to deliver value and savings through a broad range of integrated services.

**Accountability**
You have the right to an advisor who is accountable for producing results and providing you with timely communication and “real-time” access to data.

**Leverage**
You have the right to an advisor who can put the power back in your hands by leveraging experience and market knowledge to your advantage.

**Creativity**
You have the right to expect creative solutions from an advisor who understands your business and how it relates to your real estate needs.

**Strategy**
You have the right to a consultative approach that blends strategic thinking with tactical execution to deliver long-term benefits.

**Courage**
You have the right to an advisor with the courage and conviction to ask the tough questions, challenge the answers, and make solid recommendations.

**Collaboration**
You have the right to an advisor who is truly collaborative...with you, with the team, and with the industry.

**Satisfaction**
You have the right to an enjoyable experience, satisfied with both the results and the relationship with your advisor.