

Leveraging technology to support green initiatives

Company Background:

This full-service construction company that has earned national recognition for notable design structures such as National Renewable Energy Laboratory's Research Support Facility, the University of Colorado Hospital Anschutz Inpatient Pavilion, and the Isle of Capri Casino. Since 1973, the Company has strengthened its team by adding accredited experts to augment its services portfolio, which includes general contracting, construction manager at risk, design build, integrated project delivery and development. The Company began as a general construction company, but today specializes in education, healthcare, hospitality and tourism, casino and gaming and municipal and institutional facilities.

The company was one of the first construction companies in Colorado to champion sustainable construction and LEED building design and today remains a strong proponent. In 2002, they spearheaded the design of Fossil Ridge High School in Fort Collins, Colo., the first LEED Silver High School in Colorado and one of the first in the nation. In 2006, they partnered with the City and County of Denver to design its first LEED building – The Mile High Station and Post Office.

But the best is yet to come. The Company's crowning achievement for sustainable construction is currently underway. The company is working with the Department of Energy's National Renewable Energy Laboratory to design the nation's first LEED Platinum, net zero energy Research Support Facilities office space for employees in Golden, Colo. The Company anticipates completing this building in 2010, which will serve as a prototype for future large-scale energy efficient U.S. office buildings.

The Company's design excellence, innovative construction projects and sustainable practices catapulted this company to new heights. In less than one year, the company nearly doubled in size and opened a new office in Wyoming. The Company's aging and non-interoperable IT infrastructure was ill-suited to maintain technical operations on par with the Company's fast-paced growth. But the Company's newly hired IT director understood the business and cost advantages of virtualization and had plans to migrate to a virtual environment.

A New Looking Glass:

The Company's sustainable practices and leading-edge building practices sparked innovation in Colorado's construction market. Their team spearheaded first-of-its-kind projects in the state, which demonstrated that form and function can be effective, affordable and sustainable. While the company was driving public innovation, its internal IT structure was becoming outdated and was less than energy friendly.

Throughout its 37-year history, the company completed various ad-hoc updates, like buying a few new servers, installing Novell GroupWise and implementing an ERP system. The result of this one-off approach was a hodge-podge of components that were non-interoperable, cumbersome and posed the risk of multiple single points of failure. Simple routine processes like software patch updates or data backup might take as long as 16 hours.

Understanding that technology is a lifeline that provides for not only communications but Virtual Design, timely and accurate estimating, project accounting and project management, the Company moved to revamp its IT infrastructure. The company's new-founded commitment to sustainable practices offered a new perspective to evaluate its IT structure and processes.

Building Blocks In Motion

In June 2009, the Company appointed a new Director of Information Technology, a newly created position. From the onset, the team was constantly worried about the network's short-comings and realized they were dealing with a ticking time bomb. "I'd come into work, wondering if today was the day that our biggest nightmare would happen," said the Director of IT. "It was a sense of constant worry I couldn't shake because I knew the network was riddled with problems."

Instead of waiting for the nightmare to materialize, the team spearheaded a proactive approach to update, integrate and virtualize the Company's IT infrastructure. One of the primary goals of almost all forms of virtualization is making the most efficient use of available system resources – something the Company lacked. Virtualization has the potential to not only reduce a company's power consumption significantly, but it also can reduce its overall space needs, reduce capital expenditures and improve productivity. With this perspective, the Director of IT and his team created an IT plan that leveraged the company's sustainable philosophy to demonstrate the 'green' value his virtualization design would have both on the environment and on the pocketbook.

In October 2009, the Director of IT recruited Denver-based 3t Systems, Inc. given their virtualization expertise, Gold Citrix Partner status and implementation track record in the construction industry. By selecting Citrix XenServer virtualization product, The Company spent \$6,000 on the migration, nearly 80 percent less than its VMware counterpart.

"Virtualization enabled the Company to put its commitment to sustainability in motion achieving 'green' value that's both good for the environment and the pocketbook."

Director of Information Technology

During a three-month timeframe, the Director of IT's team and 3t Systems updated the network infrastructure, converting it into an interoperable, redundant and virtual network. Key highlights included displacing Novell GroupWise and migrating to Microsoft Exchange, converting LAN to two virtual LANs, downsizing 16 physical servers to three physical VM Hosts powering 15 virtual servers, creating a new collaboration portal via SharePoint, implemented a fault tolerant data foundation using Dell's EqualLogic's Storage Area Network, streamlining the backup process, creating network redundancy, and achieving peace of mind.

“Prior to joining the Company, I knew the efficiency, cost savings and reliability of a virtualized infrastructure so I was convinced this was the best option,” said the Director of IT. Within a few months of installation, the Company had already realized some of the benefits of the decision to virtualize:

- Reduced the IT department’s time spent on system troubleshooting and patching by 50 percent, thereby giving them more time to work on proactive IT projects to further improve IT operations.
- Eliminated 10 physical servers thus reducing power consumption and cooling costs by \$300-\$600 per server annually.
- Implemented a more eco-friendly network design that is more efficient, reliable and cost-effective.
- Achieved peace of mind knowing a reliable and redundant network was in place.

The Notion of Green Virtualization

There are two notions facing today’s IT Teams when considering green IT. First is the ‘green’ notion of being a good, sustainable citizen. The second is the reality of the budget and flexibility for a nimble technology strategy. For the Director of IT and the Company, server and network virtualization was a viable option because it addressed both scenarios. Virtualizations gave the Company the opportunity to bring its sustainable practices in-house, improve service levels and reduce overall waste in the IT department – staff time wasted, money wasted and technology wasted.

“The Company’s strong commitment to eco-friendly practices was an underlying guide for our IT design. By integrating smart technology that reduced the company’s carbon footprint, we were able to create a custom solution that helped the Company incorporate its green practices in-house, making it a proven example that green is good.”

*Ciaran Dwyer
CEO of 3t Systems, Inc*

Looking ahead, the Company engaged 3t Systems on an Unlimited Support Service contract, which he plans to leverage to virtualize more elements of the Company’s network in the near future. “As a company, we’ve taken a major step in the right direction to being a responsible environmental steward, externally and internally. I plan to keep us moving strategically in this direction,” said the Director of IT.