University Pioneers Green Building Analysis Methodologies

Case Western Reserve University engages Connected Real Estate Advisory Services to explore ways to save energy.

EXECUTIVE SUMMARY

CASE WESTERN RESERVE UNIVERSITY

- Industry: Higher Education
- Location: Cleveland, Ohio
- Number of Employees: Approximately 6000 faculty and staff (Fall 2009)

CHALLENGE

- Introduce methodologies and change management
- Align technology and facilities initiatives to accelerate smart building projects

SOLUTION

- Collaborative CRE engagement with Cisco Smart+Connected Communities Advisory Services
- Pilot project to gather data from representative sample of three existing buildings
- Knowledge transfer to IT and facilities teams

RESULTS

- New methodologies and tools introduce repeatable analyses process for smart building planning efforts
- Technology roadmap protects investments in existing infrastructure
- Data gathered enables community education as part of required steps

Challenge

Case Western Reserve University consistently ranks among the country's top research universities. The university offers an experience-based approach to education and world-class academic programs that attract approximately 9200 students each year. Building on the university's impressive history, the leadership team's goals aim for national recognition of Case Western Reserve University as an institution that "thinks beyond the possible." Strategic alliances strengthen the university's areas of focus, which span energy and the environment; human health; culture, creativity, and design; and social justice and ethics.

A robust technology infrastructure supports all of the Case Western Reserve University academic and research priorities. This goal also stems from the university's commitment to meeting the mandates for reduced energy consumption and carbon emissions as defined by the *American College and University Presidents' Climate Commitment.*

Case Western Reserve University, while taking on the challenges associated with smart green building projects, is also striving to increase sustainability and manage costs. The facilities team is responsible for the efficient management of approximately 128 buildings, with a combined floor space of 8.5 million square feet. While bringing down costs, the organization must also meet the demands from faculty and staff for more workspace flexibility and maintain the needs of a diverse student population.

Organizational challenges complicated the university's smart building initiative and Climate Action Plan efforts. Previously independent facilities and technologies teams recognized the need to evaluate people and processes, and introduce a new level of collaboration including outreach efforts and education that could influence energy consumption behaviors of the entire Case Western Reserve University community.

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>
> **– Colleen Nagy, Director of the Program Management Office, Case Western Reserve University**

Solution

Based on the desire to leverage the existing networking infrastructure investment and a successful history of collaboration with Cisco, an executive briefing was held to review the Cisco® Smart+Connected Real Estate (S+CRE) approach. This eventually led to a Cisco Smart+Connected Communities Advisory Services engagement that created a collaborative process for moving forward.

“Knowledge sharing was an important first step for us,” says Colleen Nagy, director of the Program Management Office at the university. “We are pioneering new approaches and processes for smart buildings and connected campuses. By teaming up with Cisco, we have gained a better understanding of connected real estate and how it can be merged with our evolving Climate Action Plan.”

Beginning with a CRE Discovery Workshop, Cisco and the university collaboratively worked towards a technology roadmap for an intelligent green university campus. A representative sampling of existing buildings formed the basis of a pilot project that gave the university a knowledge base, methodologies, and tools for intelligent green building analysis, including:

- Building Intelligence Quotients (BIQs), which establish an internal rating and performance measurement process
- Carbon footprint modeling and analysis
- Application of the Leadership in Energy and Environmental Design green building rating system to existing buildings (LEED-EB)
- Green building business cases and cost models

During the four-month pilot project, the collaborative Cisco and Case Western Reserve University team identified a CRE technology roadmap along with ways to improve business processes. A Cisco Services-led design and analysis stage included data collection and validation and analysis of buildings using Building Intelligence Quotients (BIQs).

“Our open network infrastructure has been integral to our ability to connect with the larger educational community and establish Case Western Reserve University as one of the best overall institutions of higher education and research,” says Lev Gonick, vice president for Information Technology Services and CIO for the university. “This latest collaborative engagement with Cisco is helping us align our network with our smart building initiatives and lead the efforts for viable Climate Action Plans for colleges and universities.”

> “An important result of this engagement is that our facilities and IT teams can now speak the same language… we have an expanded understanding of how we can collaboratively evolve our internal processes and operations to pioneer smart buildings.”
>
> **– Lev Gonick, Vice President for Information Technology Services, CIO, Case Western Reserve University**

Results

Case Western Reserve University has always promoted energy-conscious practices and responsible resource utilization. The facilities team continually explores ways to smooth out energy spikes and save money on steam, electricity, and water resources. “Our Climate Action Plan could potentially stretch over 30 to 40 years,” says Eugene Matthews, director of facilities at Case Western Reserve University. “The joint project with Cisco gives us tools and methodologies that can fold into our long-term plan, and help us improve operations along the way.”

One of the first buildings to be analyzed in the pilot engagement, the Peter B. Lewis building, demonstrated how LEED-EB analysis can support the university's capital planning and budgeting processes and well as help achieve some of the environmental sustainability objectives. A Network Infrastructure Design Review provided an assessment of the building's network infrastructure and determined operational readiness for the introduction of the latest developments and industry standards for Building Automation System over IP (BAS/IP) convergence and optimization.

The collaborative project also gave Case Western Reserve University a business case analysis methodology. The foundations for future connected building solutions reviews, cost modeling, and business case studies can help improve business processes and make it easier for the university to take advantage of the latest industry trends in smart building technologies.

"An important result of this engagement is that our facilities and IT teams now speak the same language," says Gonick. "We can see that we need to be part of each other's strategic planning efforts going forward, and we have an expanded understanding of how we can collaboratively evolve our internal processes and operations to pioneer smart buildings."

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> **– Eugene Matthews, Director of Plant Services, Case Western Reserve University**

Next Steps

Based on actual analysis of university buildings, the Smart+Connected Technology Roadmap provides a plan that matches short-term and long-term goals with specific technology solutions. The roadmap continues to enable the university to build consensus among disparate stakeholder groups in terms of a set of needs and the technologies required to satisfy those needs. The university has a mechanism to help forecast technology deployments and a framework to help plan and coordinate technology deployments.

PRODUCT LIST
• Cisco Smart+Connected Communities (S+CC) Advisory Services

Collaborative development of the university's capacity for modeling, assessing, planning, and implementing intelligent green building initiatives has enabled the pursuit of sustainable operational excellence.

For More Information

To find out more about Cisco Connected Real Estate for Education, go to:

- Connected real estate: www.cisco.com/web/strategy/trec/index.html
- Services: www.cisco.com/go/services

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