



## Solution Overview

# The Cisco Connected Campus Solution for Colleges and Universities

Today's college and university campuses can range from a few buildings to hundreds or even thousands, and often serve populations the size of small cities. Until recently, each building management function (access control, safety, heating, ventilation, etc.) required a separate network, resulting in a complex and costly environment to operate and maintain. Now, institutions of higher education can deliver all building services over a single, centrally managed campus data network. With the Cisco® Connected Real Estate (CCRE) for Higher Education solution, colleges and universities can reduce building capital and operational costs, increase safety and security, and support new services and amenities that enhance campus life for students and faculty.

## Challenge

On college and university campuses, building control systems for heating, ventilation, and air conditioning (HVAC), fire and safety, lighting, and other services have long been standalone, proprietary systems. As a result, operating a single building – let alone an entire campus – is extremely complex, with high installation, integration, and ongoing maintenance costs, and little ability to automate or centralize services.

Historically, colleges and universities tolerated these inefficiencies as an unavoidable cost of operating campus facilities. However, today's institutions of higher education are searching for new ways to streamline facilities management, reduce operational costs, and uncover new savings that can be diverted toward educational purposes.

On today's campuses, colleges and universities face:

- *Inefficient, isolated facilities management systems* that force institutions to manage each building on campus as an individual entity
- *High capital investment costs* to construct new buildings and retrofit old buildings, with these costs reaching almost US\$20 billion annually in the United States alone
- *High operational costs*, with ongoing operation and maintenance accounting for 75 percent of the total lifecycle costs of a building, and triple the costs of construction
- *Growing pressure to provide a more flexible, productive campus environment* to meet changing demands and help attract the best students and faculty
- *Difficulty in meeting increasing regulation requirements* for a safe, secure, and healthy environment

## Solution

Today, institutions of higher education are increasingly turning to the campus data network as the “fourth utility,” and using it to address facilities management challenges. For the first time, the CCRE for Higher Education solution allows colleges and universities to centrally control all building services and dramatically improve the efficiency of operating and maintaining campus facilities.

The CCRE solution consists of a secure, resilient, high-speed network backbone running through the core of all buildings on campus. This intelligent information network uses the open standard of IP to provide a single multiservice infrastructure for supporting all environmental and building controls – as well as conventional network data, voice, and video services. Equipped with this versatile network foundation, colleges

and universities can create innovative campus environments in which facilities, technologies, and services work together to centrally control all building services and dramatically improve the efficiency and cost effectiveness of operating and maintaining campus facilities.

## Business Benefits

An intelligent campus network can support a variety of applications that streamline manual processes, reduce paperwork, and keep facilities staff more connected and productive. When combined with a campus-wide wireless LAN, colleges and universities can profoundly change the way they manage facilities and dramatically cut costs. With the CCRE solution, colleges and universities can:

- *Reduce the lifecycle costs of a building/campus* – An intelligent Cisco network provides a robust platform for linking campus buildings (or even multiple campuses) into a unified, centrally manageable system. Instead of devoting substantial human and financial resources toward managing separate, proprietary environmental and building control systems for each building on campus, institutions can manage all of these functions from a central location, with a single staff. Campus facilities staff can take advantage of Web portals and IP contact centers to identify the least-cost resolution to maintenance issues, reduce or eliminate redundant operations at each facility, and work more collaboratively and efficiently.
- *Streamline building operations* – Many institutions today still rely on paper-based systems to dispatch and track building service calls, often requiring multiple forms and approvals to perform even routine maintenance, such as changing a light bulb. On a CCRE campus, building staff or faculty can simply report issues through the building's Web portal or IP-based contact center, and have work orders automatically approved and routed to a technician's wireless PDA. Notifications of temperature complaints, lighting problems, and other maintenance issues are delivered instantly to the right person, in the right place, and issues are resolved more quickly. Ultimately, institutions can reduce errors and lost paperwork, improve service to faculty and students, and accomplish more with a smaller staff.
- *Enhance campus safety and security* – With the CCRE solution, colleges and universities can keep campus grounds and facilities under constant and pervasive surveillance, and more effectively control access to buildings, residence halls, and research centers. For example, in the event of a security event, security staff can open and close doors, provide an escape path, ground elevators, alert local police or fire agencies, and coordinate lighting, ventilation, water, fire alarm, and other building systems from a single network interface, from anywhere on campus.

## Creating a More Productive Work and Study Environment

With the CCRE solution, the same network that supports converged building and security systems can also support a variety of student- and faculty-facing services that help create a state-of-the-art learning environment. A fully modern, technology-enabled campus can appeal to students and help schools, colleges, and universities meet their targets for student intake and course attendance,.

Some of the new services supported by the CCRE solution include:

- *Secure high-speed Internet access* – With a Cisco network infrastructure, institutions can deliver faster Internet access to students and faculty at a lower cost, make new services available in campus buildings, and support a variety of applications that streamline facilities operations. At the same time, the flexibility of the CCRE solution supports the open, accessible environment that college and university users require.
- *Mobility solutions* – Once an intelligent network foundation is in place, colleges and universities can add secure wireless (Wi-Fi) access across campus for little additional cost. High-speed wireless solutions allow facilities staff and building applications to securely connect with the network from anywhere on the campus, while also supporting ubiquitous network access for faculty and students.
- *Building security and access* – The convergence of IT and buildings systems has a tremendous impact on the ability to create safer buildings. Interoperability of devices and networks ensures critical real-time data can be acted upon. Video surveillance, access control, and asset management over the IP network are being used to drive much more sophisticated and comprehensive physical security strategies.

- *Converged network services* – An intelligent campus network that centralizes all building services onto a single, versatile architecture paves the way for innovative future building control and communications solutions. The ability to support intelligent, centrally controlled environmental and utility systems can unlock substantial cost savings. Such a network also provides a foundation for deploying converged communications solutions such as IP telephony, unified messaging, and videoconferencing anywhere on campus, at a much lower cost than outfitting individual buildings for separate point solutions.
- *Digital signage and media systems* – In addition to standard data and communications services, the campus network backbone can support IP-based cable TV services, digital advertising, and streaming media content that can generate new revenues. Additionally, public-facing media systems can even be interactive, offering building directories, class schedules, office hours, and other video services.

## Why Cisco?

Cisco Systems® has a significant worldwide portfolio of 400 buildings across 90 countries, housing 40,000 employees, and it actively applies the CCRE concept to the way it plans and manages its own work space. For instance, Cisco has four Security and Facilities Operation Centers across the world to manage access and physical security over its IP network for all offices. Cisco also monitors several facilities systems over the network, such as temperature control in communications rooms, leak detection in laboratories, and the status of uninterruptible power supplier systems. Cisco is currently in the process of deploying innovative IP-based energy management solutions.

In addition, Cisco Systems is the only company that can offer a comprehensive platform of end-to-end campus networking, and data, voice, and video, and wireless solutions, coupled with the highest-rated service and support in the industry. As the worldwide leader in networking, Cisco can provide:

- A secure, adaptable, standards-based architecture that can easily accommodate future services, protecting network investments
- A long-term commitment from Cisco Systems to the CCRE solution and its underlying technologies
- Proven best practices for deploying campus network solutions, developed through close working relationships with leading educational institutions and construction and facilities industry groups
- Industry-leading partners and resellers to deploy and manage the entire solution

## Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help to protect the network investment, optimize network operations, and prepare the network for new applications to extend network intelligence and the power of the business. For more information about Cisco Services, see:

Cisco Technical Support Services: [http://www.cisco.com/en/US/products/svcs/ps3034/serv\\_category\\_home.html](http://www.cisco.com/en/US/products/svcs/ps3034/serv_category_home.html).

Cisco Advanced Services: [http://www.cisco.com/en/US/products/svcs/ps11/services\\_segment\\_category\\_home.html](http://www.cisco.com/en/US/products/svcs/ps11/services_segment_category_home.html).

## For More Information

For more information about the Cisco Connected Campus Solution, visit <http://www.cisco.com/go/connectedlearning/> or contact your local account representative.

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