



Despite energy-saving initiatives, HVAC and lighting still represent 40% and 16% respectively of the total energy consumption in educational buildings.

By implementing cost-effective energy-efficiency measures, many colleges and universities have the potential to reduce their energy bills by 30% or more.

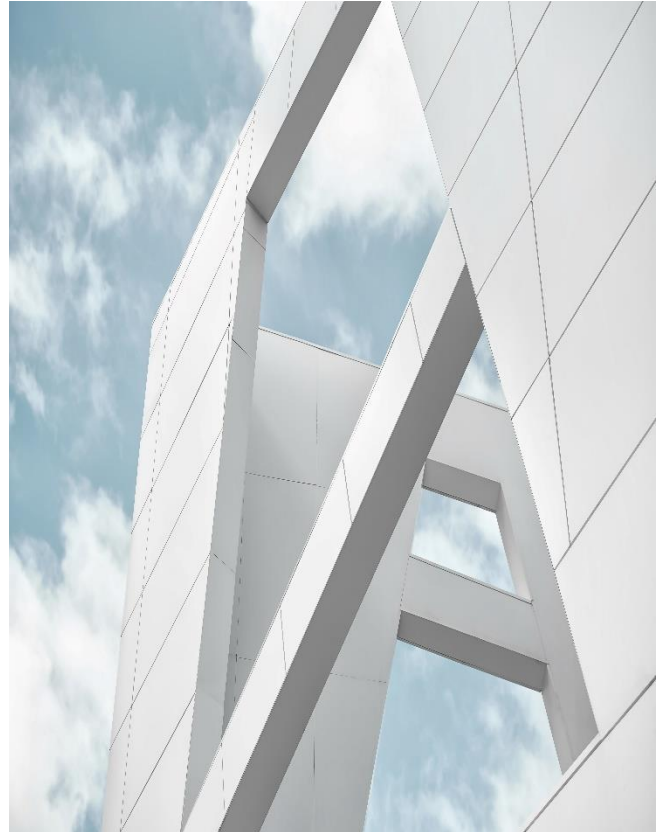
Universities present a unique set of challenges to building owners and facility management teams with a diverse range of building types, age of the building, and usage. From lecture theatres, laboratories, IT server rooms, leisure facilities, accommodation, dining facilities, and administration offices each with their own HVAC, lighting, and security requirements with varying maintenance needs. Accommodating the thermal comfort and safety of thousands of students across a diverse multi-site campus, smart energy management can be challenging.

Developing and expanding over time, many campuses are a combination of new, aging, and historic buildings added to this is the proliferation of varying HVAC and lighting systems, with a blend of modern, outdated, or non-existent BMS systems. For facility management teams, managing many disparate systems is time-consuming, operationally inefficient, and potentially costly in terms of energy consumption and equipment maintenance.

SOLUTIONS

Flexibility

- A wide selection of state-of-the-art_BACnet (IP and MS/TP) field controllers for HVAC control of a building's mechanical and electrical systems including Elevators, Security (Card Access & CCTV), Parking Gate System and more.
- Access controls and energy monitoring anytime anywhere via web-enabled smart devices.
- Schedule building zones automatically through Microsoft® Outlook, Google® Calendar, or Apple® iCal. Simply book the room and the zone is scheduled.
- The entire ABB range benefits from UniPut™ I/O technology for flexible point configuration and flexibility in strategy changes which has the benefit of minimizing the cost of design changes even at late stages in commissioning.
- Data logging and alarming features enable energy meter data recording for improved energy management control.



Ease of Integration

- Open Protocol Solution supporting interoperability
- BACnet/IP, BACnet MS/TP
- Modbus TCP and Modbus RTU

ABB provides connected building control and energy management solutions to consulting engineers and building owners through our global network of Approved System Integrators.

When you combine ABB's highly robust, reliable, and flexible CBLine product range with our SaaS energy management expertise you get an advanced, top to bottom

Energy Management Solution that really delivers on your energy-efficient commitments and goals.

With backward compatibility built into the design of our products providing the ability to seamlessly upgrade systems over 10 years old, you can be confident that your investment in an ABB building energy management system is secure.

Scalable

ABB smart building solutions provide flexible site control applications for small to large scale building automation systems. Our highly flexible and easily extendable solutions also offer a consistent approach to the phased upgrade of legacy plant and new buildings.

- ASPECT® Web-based Building Management Technology
- INTEGRA™ Building Management System based on the Niagara Framework®

Centralized control

Centralized energy management and automation control. Group schedule and address alarms and alerts allowing for early and swift maintenance

Building automation control

Intelligent integration of state-of-the-art BACnet (IP and MS/TP) controllers for optimum HVAC control, efficient climate control, optimum temperature and air quality

Energy management

Energy monitoring, analysis and optimization with Cylon Active Energy Manager and ABB Energy Solutions deliver energy consumption savings

Drives

Optimized control and efficiency of equipment. ABB Drives deliver reliability of operation and reduce energy consumption

Meters

ABB state-of-the-art meters provide complete power quality analysis and accurate energy efficiency monitoring

Sensors and display

Room smart sensors and attractive wall mounted displays deliver occupancy comfort and control of space environments

Room control

Efficient operation of lighting, sun-shading, heating and cooling systems saving operational costs and improving the overall space environment

Lighting

Smart, state-of-the-art, highly user-friendly lighting solutions for buildings, amenities, and campus grounds ensuring occupant comfort and safety in open spaces, reduced energy consumption, and increased cost savings

Security and safety

SmartIP connected ABB-Access Control Solution and ABB-VideoControl surveillance system, ensures a secure and safe environment and controls

Emergency lighting

ABB's comprehensive portfolio of specialist emergency lighting brands, AC and DC central battery systems, and smart monitoring safety systems offer a complete solution for safe evacuation



BENEFITS

Scalable

Highly flexible, easily extendable, ABB BACnet also allows for straightforward expansion or upgrades to the BMS that may be required in years to come, future-proofing today's BMS installations.

- Simplified integration with many third-party, non-HVAC systems, including lighting and energy management. ABB's open platform solutions make integration with 3rd party systems and legacy systems easy, bringing all your building energy management systems together.
- Open protocol provides ease of upgrades and extension of building management systems.
- ABB BMS integrates seamlessly across IT networks, between buildings, and between remote sites, making it ideal for university and college campus building energy management.

- ABB BMS is flexible and scalable with integrated web support, building control and management information are easily accessed and adjusted from standard web browsers.

BENEFITS

Efficient Operations

If a lecture is cancelled who turns the lights off and adjusts the HVAC in a room? Are rooms fully occupied to expected schedules? In the first instance, BMS should be scheduled in line with building occupancy and reviewed on a quarterly or semester basis to capture fluctuations in expected occupancy. The addition of occupancy sensors can ensure lighting is not left on unnecessarily and HVAC is not running needlessly in empty rooms.



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Sensors enrich the efficacy of BMS and improve environmental factors | BMS connected sensors such as light, temperature, CO₂, humidity, occupancy data work together to provide a consistent and comfortable learning environment for students.

By integrating the ABB web-enabled building management system, HVAC equipment can easily be adjusted according to weather conditions. Occupancy and setpoint values for classrooms, conference rooms, gymnasiums, etc. can be adjusted remotely with everyday software like Microsoft Outlook or with mobile devices in the hands of facility managers.

- Operational efficiency: 24/7 web-enabled access to your BMS. View and modify information including trends, setpoints, schedules and more from any web-enabled device anywhere, any time.
- Simplify the management of a building portfolio across a wide geographical area.
- Reduce time spent on analysis across mixed platforms.
- Customizable user interface.

View and modify information including trends, setpoints, schedules, and more from any web-enabled device. Site dashboards are easily user-customizable, allowing equipment, schedules, trends, and more to be added as favorites for quick access.



BENEFITS

Optimize Revenue

- Reduce energy costs | ensure your building systems are operational only when needed versus expectation.
- Reduce operational costs | Resolve issues quickly with monitoring and control. Alerts in real-time enable building managers to

monitor equipment performance, track anomalies of operation outside of setpoints and scheduling, and react to resolve any issues quickly, reducing downtime.

Energy Monitoring, Analysis and Optimization

Reducing energy use and making real savings is impossible without good data on which to make management and investment decisions. Active Energy shows you how, where and when you are consuming energy.

- Active Energy issues alarms via email and push notification services when it detects anomalies in expected consumption, putting you in control.
- Alarms can be viewed via the map-based interface, particularly useful for a quick overview of multiple buildings in multiple locations.
- View actual normalized energy usage against patterns of expected consumption and identify the drivers of your energy consumption to produce information you can act on that will help deliver energy savings.
- Active Energy allows you to compare meters, view data by time, calculate energy costs and carbon emissions and more.
- Access regression analysis, overspend and consumption charts.
- Multi-building energy performance benchmarking. Active Energy's fully customized reporting feature allows you to generate instant or scheduled reports on energy consumption, costs, carbon emissions, performance versus targets, as well as tenant costs reports.

Extensible

There are no limits to the number of information points or geographical locations that can be connected to the system which makes it an ideal central energy monitoring and management tool for multisite and multi-building organizations.



Future proof your investment

The ABB solution provides ease of upgrades and the extension of BMS through the gradual replacement of older, outdated, and ineffective BMS systems delivering a more flexible, energy-efficient, and cost-effective solution.



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