EcoStruxure™
Innovation At Every Level

PERFORMANCE

University of Iowa increases campus performance and nets $900K in energy savings in one year

University of Iowa – Iowa City, Iowa, USA

How EcoStruxure™ Building Advisor improves campus performance and drives energy savings at a premier public research university

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- University deploys EcoStruxure Building Advisor as a system agnostic solution to monitor 6.7 million square feet across 49 buildings with four different building management systems, which resulted in over $900,000 in energy savings within the first year, phase one of the project.

- An average of 17% or 705 HVAC related work orders completed were predictive maintenance orders, ensuring that the University can plan and schedule maintenance more effectively.

- University of Iowa has earned three FDD-related awards in recognition of its sustainability efforts and energy savings.

Ranked among the top-five percent among universities worldwide, the University of Iowa is one of the country's top public research universities. The University's campus is comprised of 165 major buildings serving nearly 33,000 students and more than 24,000 faculty and staff. The maintenance team was tasked with managing a large influx of data across multiple complex building systems. In order to prioritize and streamline their workflow, the University looked for a tool to automate task management, fault detection and building systems analytics.

Basepoint Building Automations partnered with Schneider Electric to deliver EcoStruxure™ Building Advisor Managed Services to the University of Iowa, including automated fault detection and diagnostics (aFDD) technology, advanced analytics, task and project management functions, and performance trending and diagnostics, along with expert guidance and actionable information. The implementation of Building Advisor represents an overlay of the University of Iowa's building management systems, enabling the university to proactively discover building system problems more easily, as well as identify optimization opportunities before they lead to alarms, excessive waste of resources, occupant discomfort, or system failure. The implementation has already resulted in an overall reduction of occupant complaints, unscheduled maintenance, and energy costs.

Goal

Proactively discover building system issues and identify optimization opportunities before they lead to more serious problems in order to better manage work orders, increase staff productivity, and significantly reduce costs.

Challenge

The University of Iowa's maintenance team was tasked with managing a large influx of data across multiple complex building systems. In order to streamline their workflow, the University looked for a tool to automate task management, fault detection and building systems analytics.

Solution

The University of Iowa implemented EcoStruxure Building Advisor enabling them to offer a cloud-based aFDD software solution, across 49 buildings within the campus encompassing academic, lab, recreational and office spaces. Integration included all major HVAC equipment, air-handling units, heating/chilled water systems, pumps, terminal units and four different legacy building management systems.

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Streamlining building management

The University of Iowa selected certified EcoXpert™ partner, Basepoint Building Automations to work with Schneider Electric to implement Building Advisor. Basepoint Building Automations was selected for its deep expertise in building automation systems installation and integration, as well as its long-standing partnership with Schneider Electric. EcoXpert partners are trained and certified on Schneider Electric's IoT-enabled EcoStruxure architecture and platform, and are the implementation arms of EcoStruxure all over the world.

Transforming university-wide systems

Schneider Electric & Basepoint Building Automations worked with University personnel to establish industry best practices with Schneider Electric's Building Advisor. The solution includes an automated fault detection and diagnostics (aFDD) solution across 49 buildings encompassing academic, lab, recreational, and office spaces. Schneider Electric provided essential technical training and support following the integration efforts, including all major HVAC equipment, air-handling units, heating/chilled water systems, pumps, terminal units, and four different building management systems (BMS): Andover Continuum, EcoStruxure Building, JCI Metasys, and Pi OPC. The new system uses the university's existing data infrastructure, comprised of building management, process automation, and computerized maintenance management system (CMMS), while web APIs enable two-way communication between the CMMS and aFDD software.

From reactive to proactive maintenance

As a benefit of the implementation of Building Advisor, the University formed a multidisciplinary Analytic Response Group (ARG) that now uses Building Advisor to enhance prioritization and troubleshooting of building system issues, including the use of automated fault detection and diagnostics to check and prioritize the tasks that need attention, assign those tasks to a team member and manage each work order in the University's CMMS. After the analytics system was fully deployed, Schneider Electric's remote experts were on hand to advise the University of Iowa on their use of Building Advisor and interpretation of the data generated whenever necessary.

In addition to using Building Advisor, the University of Iowa's Analytic Response Group now has the ability to:

- Fix comfort issues before occupants complain

- Uncover hidden issues and identify optimization opportunities using analytics, saving time, energy, and money

- Justify maintenance and project expense with clear return on investment

- Clearly demonstrate the value that the facilities team delivers

- Significantly increase team efficiency, accomplishing more within existing operating budgets

In the first year, the University used Building Advisor as a system agnostic solution to monitor 6.7 million square feet across 49 buildings with four different building management systems, which resulted in

Results

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- Clearly demonstrate the value that the facilities team delivers

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Data points

- In the first year, Building Advisor monitored 6.7 million square feet across 49 buildings with four different building management systems, which resulted in over $900K in energy savings.

- An average of 17% or 705 HVAC related work orders completed were predictive maintenance orders, ensuring that the University can plan and schedule maintenance more effectively.

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over $900,000 in energy savings. An average of 17% or 705 HVAC related work orders completed were predictive maintenance orders, ensuring that the university can plan and schedule maintenance more effectively. As a result, in April 2018, the University of Iowa's new approach to maintenance was recognized in APPA Facilities Manager magazine, which named the University of Iowa as one of the 36 campuses across North America practicing campus sustainability. Additionally, the University of Iowa was recognized by Lawrence Berkeley National Laboratory and the U.S. Dept. of Energy in May 2018 for their exemplary work to save energy through the use of Fault Detection Diagnostics (FDD).

In 2019, Environmental Leader magazine also recognized Schneider Electric and the University of Iowa for the project's success in providing significant sustainability and energy management results.

The University of Iowa continues to work closely with Schneider Electric and Basepoint Building Automations to review and act on analyses resulting from phase two of the Building Advisor implementation. This second phase added 29 more buildings to the portfolio and brings the total number of devices connected to EcoStruxure Building Advisor analytics cloud to over 12,000.

About University of Iowa

The University of Iowa is one of the nation's premier public research universities with 32,948 students from 114 countries and all 50 states. Founded in 1847, it is the state's oldest institution of higher education and is located alongside the picturesque Iowa River in Iowa City.

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Basepoint Building Automations was selected for its deep expertise in building automation systems installation and integration, as well as its longstanding partnership with Schneider Electric. EcoXpert partners are trained and certified on Schneider Electric's IoT-enabled EcoStruxure architecture and platform. The program's mission is to connect expertise, ignite growth, and enable success for its EcoXpert partner companies, because together they deliver best-in-class services and solutions to customers all over the world.

A member of the Association of American Universities since 1909 and the Big Ten Conference since 1899, the UI is home to one of the largest and most acclaimed medical centers in the country, as well as the famous Iowa Writers' Workshop.

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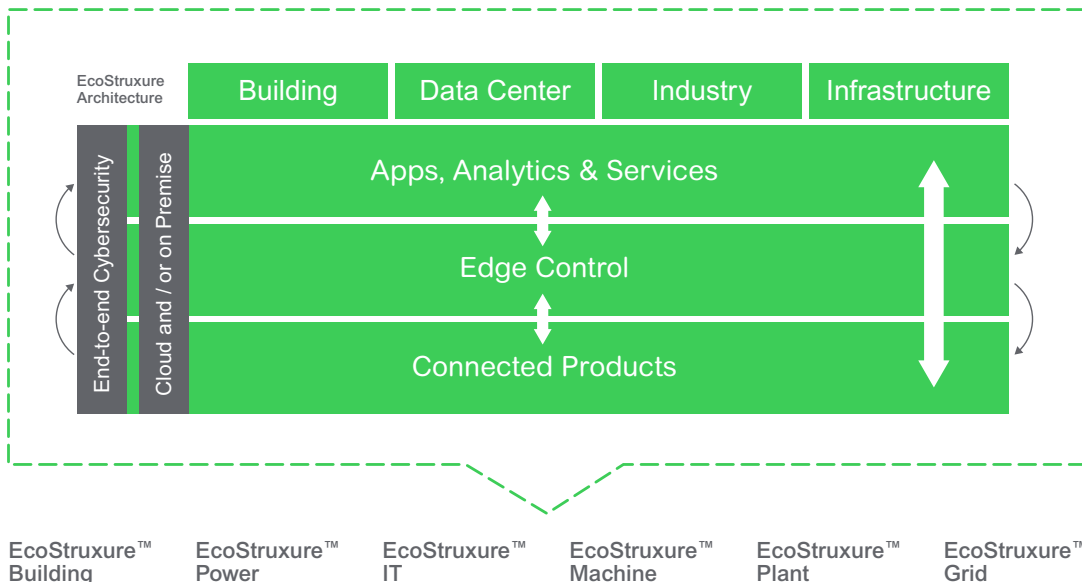# Eco Struxure™
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IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure™ has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise

EcoStruxure Architecture

| Building | Data Center | Industry | Infrastructure |

End-to-end Cybersecurity | Cloud and / or on Premise

Apps, Analytics & Services

Edge Control

Connected Products

EcoStruxure™ Building   EcoStruxure™ Power   EcoStruxure™ IT   EcoStruxure™ Machine   EcoStruxure™ Plant   EcoStruxure™ Grid

Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure

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