

Columbia Basin College



Client Vision

Committed to being smart about its energy use, carbon footprint and finances, Columbia Basin College has found exceptional value through an ongoing, multiphase performance contracting relationship with Schneider Electric.



CUSTOMER BENEFITS

- Guaranteed savings
- Local and remote systems control
- Reduced energy consumption
- Increased operational efficiency
- Streamlined procurement and facilities improvements



PROJECT AT A GLANCE

Location: Pasco, Washington

Buildings: 20+

Project type: Performance contract

Energy conservation measures:

- Lighting retrofits and occupancy controls
- Intelligent building automation system
- Animated campus billboard/streetside sign
- Photovoltaic solar array installation and integration with energy metering system
- HVAC replacements and upgrades
- Heating system decentralization
- Chiller plant optimization
- Campuswide energy metering system and monitoring-based commissioning
- Underground piping replacement

Funding:

- \$4.9 million in grants from Washington State Department of Commerce
- \$185,000 in incentives from Cascade Natural Gas and Franklin County PUD (Public Utility District)

Guaranteed Savings:

\$225,000 annually

Payback:

15 years

Installation:

Phase 1- 2012

Phase 2- July 2015

Phase 3- July 2015

The Challenge

Columbia Basin College (CBC) offers a comprehensive two-year program for those interested in pursuing academic studies, as well as pre-professional, technical and vocational training. Situated on 148 acres of beautifully landscaped grounds in the southeastern section of Washington state, CBC has an enrollment of 9,000 students in day and evening classes.

Since many of the campus facilities were built after 1955, CBC faced several issues by 2009 that needed to be addressed. Issues ranged from strained budgets and rising operational costs ... to aging facilities and outdated systems and technology. Like many other public institutions, CBC faced mounting political and public pressure for financial stewardship and environmental sustainability, including state mandates regarding energy use and carbon emissions.

Determined to take a proactive, rather than reactive stance with regard to sustainability and financial prudence, CBC decision-makers began exploring performance contracting in 2009 as a way to fund much-needed repairs and system upgrades. (A performance contract is a turnkey solution that guarantees energy savings to pay for improvements. If those savings are not realized, Schneider Electric agrees to pay the difference.)

Prior to beginning a phased approach that would ultimately address CBC's energy and building needs, Schneider Electric carried out an audit of all systems, including those being considered for replacement or renovation in the future. Schneider Electric soon discovered that CBC had multiple sets of plans for each facility, a side effect of the many renovations and additions of a growing college, and that it would be valuable to digitize the complicated library of drawings for each system and building.

In 2010, CBC signed the first performance contract with Schneider Electric, collaborating to identify beneficial energy conservation upgrades and develop solutions for problems with various facilities.

Facing some of the typical challenges of working on a college campus, Schneider Electric worked around class schedules to minimize disruptions. However, a complete overhaul of one building's HVAC system required relocating students during the summer. Also, adding new natural gas lines to several buildings meant having to dig by hand to avoid hitting a host of buried wires and pipes. And one piece of HVAC equipment was in such a cramped space that Schneider Electric had to get custom-made modular replacement parts to upgrade the equipment.

*"Since 2009, Schneider Electric has been a key partner in helping us improve our facilities, decrease our costs, and optimize our consumption of resources."
Bill Saraceno, Sr. VP, Administration Services, Columbia Basin College*



The Solution

CBC's operations staff continue to be an integral part of the design and planned operation for each project phase, especially on the scope of work. From the start, CBC has valued its ability to specify outcomes and improve facilities in a strategic manner. Ultimately, this capability enables CBC to take better care of its facilities with fewer staff than comparable institutions.

For instance, through automation, digitization, and standardization, CBC's partnership with Schneider Electric has increased the effectiveness of each member of the operations staff. Over the past decade, the campus has witnessed substantial growth with the addition of new facilities to accommodate the large demand for higher education in this area of the state. As a result, facilities staff with specific facility knowledge may not always be available.

Schneider Electric devised an innovative solution to address this issue – scanning all paper-based drawings for each facility and then providing technicians with a tablet computer. This access to every generation of drawings for each building saves time and money each time work requires referencing the drawings.

Starting in Phase 1 (completed in 2012), Schneider Electric partnered with local contractors, who had a history of working on the CBC site, to take advantage of their institutional knowledge. In addition, Schneider Electric's expertise and creativity enabled CBC to prioritize the scope, based on a variety of factors, while still achieving the best possible solution for the least possible cost.

In Phase 2, Schneider Electric tackled a host of smaller scope items. Originally scheduled to be completed in February 2015, CBC has extended this phase numerous times to address additional scope as funding has become available.

In 2014, the Washington State Department of Commerce announced a competition for funds for its Energy Efficiency Grants program, which now includes solar energy. The collaborative team identified three buildings that could benefit from installation of a solar array, narrowing it to one choice for the grant application.

In December 2014, CBC received a \$750,000 grant to implement a photovoltaic solar array on the roof of CBC's business building, the first major step toward the college's goal of carbon neutrality by 2020. And so Phase 3 of the project began, with completion scheduled for July 2015.

Performance contracting is enabling CBC to use energy savings to fund major capital improvements. For instance, HVAC work has included replacing failing systems, decommissioning the old inefficient central heat plant, optimizing the central chiller plant, replacing underground piping, and implementing new systems and technology in strategic areas.

The long list of completed upgrades also includes an energy metering system, building automation (HVAC) controls, occupancy sensors, lighting retrofits for interior/exterior/parking areas, an animated street sign visible from the highway, and extensive HVAC system improvements/replacements.

The Bottom Line

As a result of Schneider Electric's performance during Phase 1, CBC elected to add \$1.3 million to the contract for additional HVAC and lighting improvements. CBC also secured one of the largest awards (\$2.1 million) of the state's energy grant program.

As a result of all the upgraded facilities and systems, CBC is saving hundreds of thousands of dollars annually in energy costs. In fact, with the new solar array, CBC will use net metering to "sell back" (i.e., get credit for) energy it generates, but doesn't use.

CBC expects to generate over \$2.3 million in savings over 15 years, while reducing its utility costs by 26 percent.

To streamline state-mandated carbon inventory reporting, Schneider Electric installed a new utility monitoring system throughout the campus to automate the collection of both electrical and gas data. This real-time data has enabled even further tightening of operations to minimize expenditures and reduce the college's environmental footprint.

Despite the growth of its facility inventory, CBC's energy consumption has decreased as a result of its partnership with Schneider Electric. Web-based control and monitoring puts information about any facility at a technician's fingertips, anytime and anywhere. Also, graphics pinpoint operational issues proactively, saving time and money while accelerating the remedy of any issues.

Schneider Electric and CBC have worked together to identify and develop many more improvements and replacements to the point of being ready for construction. A portion of this scope will be funded via CBC's budget and proceeding late summer of 2015, which is referred to as Phase 4. The balance of the developed scope (and anything else identified in the future) will remain in a holding pattern until funding comes available.

The annual environmental impact resulting from CBC's improvements equates to reducing its carbon footprint by removing 1,836 cars from the roads, planting 360,801 trees to balance the ecosystem, and generating energy savings sufficient to power 1,164 houses.

www.enable.schneider-electric.com

