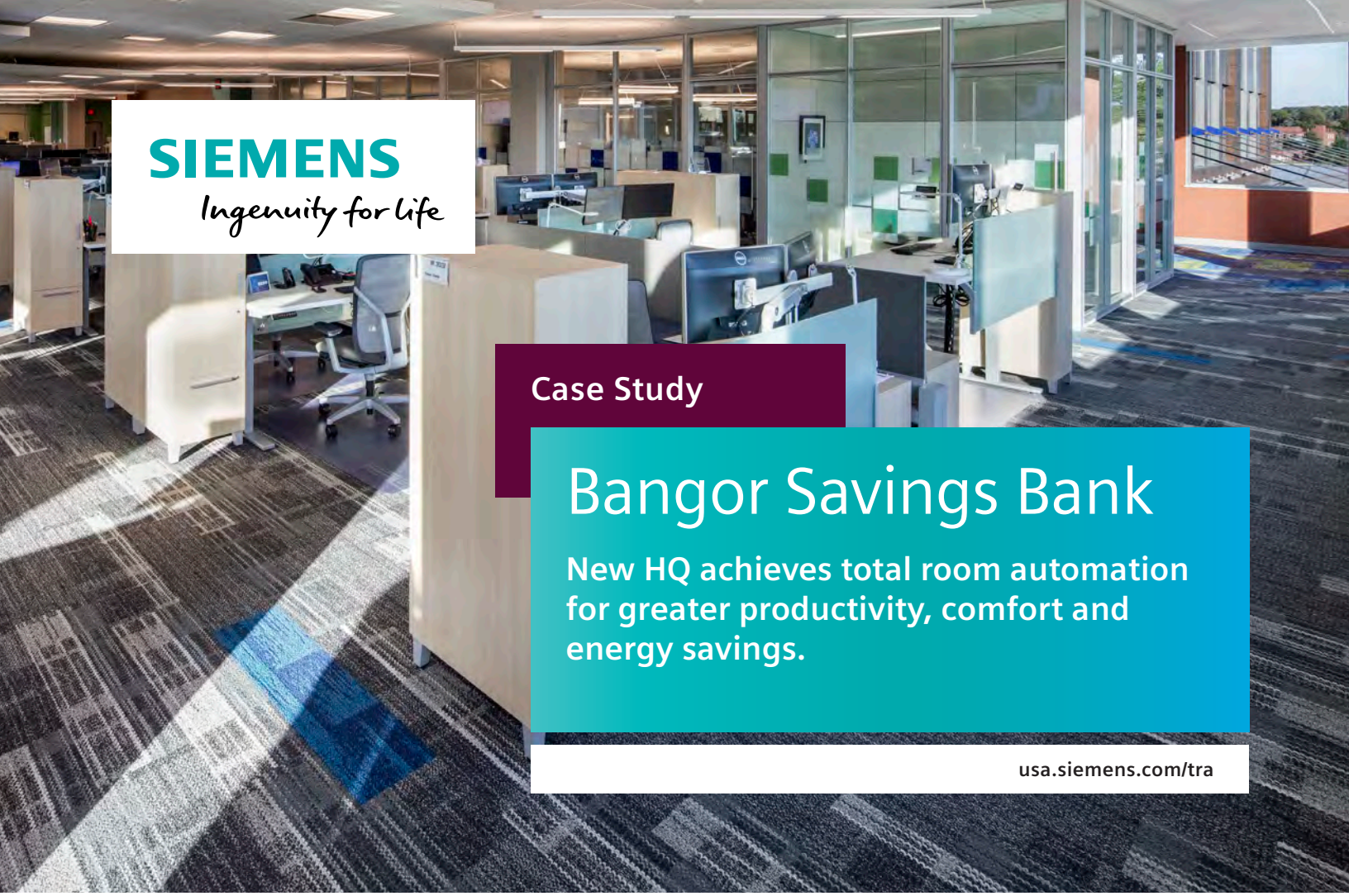

SIEMENS
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Case Study

# Bangor Savings Bank

**New HQ achieves total room automation for greater productivity, comfort and energy savings.**

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## Establishing a unified vision in design spec ensures customer achieves everything desired.

Bangor Savings Bank was founded in 1852 and is headquartered in Bangor, Maine USA. In 2019, to accommodate growth, the bank relocated its corporate offices onto a modern central campus. The new campus, known as Founders Place, leverages environmentally sustainable technology. The Founders Place campus includes a renovated administrative office building, a newly built operations center, and multi-story parking garage occupied by 400 employees.

Jason Donovan, Senior Vice President, manages the Real Estate Management department for Bangor Savings Bank which includes three property managers, one purchasing agent, two maintenance technicians and two custodial staff working under the mission to provide quality, timely, cost effective facilities management and procurement services for the bank while helping to strengthen ties to the communities served.

Donovan was part of the Bank's project team that oversaw the construction of the bank's new headquarters with the goal to construct a healthy building that employees enjoyed coming to work each day; that would provide employee access to ample daylight and be very comfortable; while also being extremely energy efficient and with low operational costs. Siemens Solution Partner, XL Automation & Energy Management Services worked with Bangor Savings Bank to deploy Desigo™ Total Room Automation solution for combined lighting, shade and HVAC control.

"I really like how easy the system is to use. With a small facilities department staff and over 70 properties to manage, we need controls systems that are intuitive. By having one system control all aspects of our building HVAC, lighting, shades, as well as monitor energy usage and equipment operation, it really gives us the tools we need to operate the building optimally."

**Jason Donovan**
Senior Vice President
Bangor Savings Bank

## Challenge

As the design plans were coming together for the new 120,000 sq. ft. headquarters, Donovan knew he wanted an all-encompassing building control system for lighting and HVAC. The team had experience working with a variety of separate HVAC and lighting system controls and knew they wanted a system that was reliable and straightforward to operate. Donovan found many lighting systems complicated to use, "With a small staff, we really can't be experts on any one system. For the new campus, the system had to be simple to use. It was also important we know who to call if an issue arose."

They also decided, among other goals, to design the building according to the Maine Advanced Building Criteria for Tier 2 performance or better. This is a very prescriptive program that focuses on energy usage in buildings with rigid performance requirements for the building envelope, lighting, and HVAC systems. Buildings designed to these criteria are expected to be 35% more energy efficient than if designed to building code.

As Donovan worked with the design engineers on the specifications, the desire was to produce a single bid spec to Division 25 as one solution and not parsed into separate divisions to bid out, which is typically done. While everyone embraced the concept, the combined spec approach was relatively new, and the General Contractor did not have a complete set of Division 25 plans to easily use for the bid. Instead, the bid was based on a modified Division 23 spec to provide the right information to both the mechanical and electrical contractors that included controls, lighting and shade specifications.

During the bid process, XL Automation had the opportunity to learn more about Donovan's lighting control pain points and presented a Total Room Automation solution that addressed HVAC, lighting and shade control to uniquely solve his problems.  Upon learning the benefits, Donovan was convinced to implement the integral solution as a project managed by XL Automation. He advised, "some engineering firms and general contractors are not comfortable in using the Division 25 spec, when that is really the most cost-effective integrated control solution. There were a lot of good compelling reasons to pull the specs all together, and it was worth pursuing what we needed and to develop the spec that met our requirements."

**Complete Bangor Savings Bank BMS spec:**

- 229 Occupancy controlled lighting zones with daylight harvesting and auto dimming
- Shade / façade control (for 231 shades)
- Perimeter radiant floor system based on OA conditions
- HVAC controls for all central plant operations
- Control of all geothermal wells and pumps
- Control of domestic hot water system
- 73 WSHP – BACnet integration
- DOAS – over 70 VAVs dedicated to ventilation sequences which accommodate partial occupancy and $CO_2$
- Snowmelt System – integration to real-time weather service for pre-emptive action based on storm data
- DMX façade exterior RGB lighting with adjustable scene controls
- 480 kW PV array integration
- Monitoring of critical equipment and alarms
- MODBUS integration of 1MW of backup generators
- Integration of all Tier 3 data center components
- Integration to security system
- Monitoring of all energy and water consumption
- Energy efficiency dashboard
- Custom 3D GUI with selectable layers, overlays and pop-ups providing a single display of all system components

# Solution

XL Automation implemented Desigo Total Room Automation (TRA) controllers by Siemens for lighting, shade and HVAC control to be integrated into the bank's building management system. Siemens TRA solution is designed to maximize performance and energy savings throughout the life of a building, key to Bangor Savings Bank's energy efficiency goals.

While the shade control was initially thought to be a small portion of the project, it quickly developed into one of the biggest pieces; given the number of windows in the building and desire for as much natural daylight as possible while ensuring occupant comfort and satisfaction. Donovan noted, "we wanted to take advantage of the natural daylight from both an energy and employee health perspective, and manual shades wouldn't achieve the results desired to manage glare while benefiting from the open views."

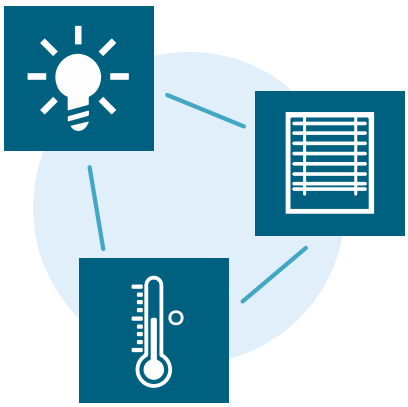
XL Automation worked with Donovan and his team to give them full control of every shade for each floor, which was only possible with the integrated solution. From the user interface, Donovan can see the real-time shade position percentage for each window as well as any manual overrides implemented.

The system also leverages real-time weather data to adjust temperature and shade controls based on follow-the-sun logic; and activates other systems such as their automated sidewalk snow melt system for the winter months. Donovan noted, "I really like how easy the system is to use. With a small facilities department staff and over 70 properties to manage, we need controls systems that are intuitive. By having one system control all aspects of our building HVAC, lighting, shades, as well as monitor energy usage and equipment operation, it really gives us the tools we need to operate the building optimally."

Overall, the Bangor Savings Bank new campus has exceeded initial design and performance goals. The new building is two times larger than the two smaller buildings previously occupied and uses 30% less energy per square foot. Aside from being very energy efficient, the building is extremely comfortable in all seasons with employees enjoying the building and feeling proud to work there.

**Shade Control for Each Window**


Examples of shade control user interface



An integrated room combines all the disciplines within a room to create a perfect interplay of HVAC, lighting, and shading.

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