



CASE STUDY

Taking the next step in building automation control with the new Desigo Automation PXC4 controllers

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Lowell 17 and Holbrook Service take the next step in building automation control with the new Desigo Automation PXC4 controllers

In Denver, Colorado, Lowell 17^{LLC} and Lead Building Engineer Mike Spratt provide mechanical and HVAC maintenance services for an eight-story, **mixed-use medical building**. This facility not only provides community health services, but it is also home to long-term care and rehabilitation services.



As a healthcare facility, Spratt explains that maintaining building controls and pressurization is especially critical to creating safe, healthy operations for patients and providers alike. “Because these are healthcare facilities, we do 100% outside air, which can be tricky in given how the seasons change here. So, good controls that are reliable and keep our equipment up and running – that’s essential. We cannot afford any downtime,” he says.

For this medical building, specialized applications require even more specialized implementations, which is part of why Lowell 17 works with a Siemens Solution Partner—Holbrook Service and their Controls Manager David Carpenter.

“For this particular project,” says Carpenter, “the building had an out-of-date controller failure for one of their 100% makeup air units. It was a critical concern and they needed to be up and running the next day.”



Desigo PXC4 controllers transform buildings into high-performance buildings. PXC4s intelligently connect field devices, enabling quick and easy engineering and providing all the information necessary to optimally manage a building. And, because they’re designed with flexibility and security in mind, these controllers let you plan, engineer, install, commission, and operate highly reliable and efficient building automation systems.

PXC4 controllers offer significantly faster, more efficient programming



Holbrook Service had already begun recommending and installing the new Desigo PXC4 controllers at other projects. So, when Carpenter got the call from Spratt, he says: **“It was easy to take the PXC4 to the jobsite, program it, install it, and have their equipment running later that day. It was a very smooth and easy implementation.”**

Holbrook Service depends on the Desigo PXC4 controllers for a variety of applications, according to Carpenter, who notes that they have explored other controller options with Lowell 17. But at the end of the day, Carpenter cites several features of the Desigo controllers as deciding factors in their selection:

- **Modular** – Carpenter appreciates that the PXC4 comes with 16 onboard points with the ability to add modules up to 40 total points based on what the site and customer need. “Bottom line, with the PXC4, every panel is a better fit for what you’re using it for,” notes Carpenter.

- **Block programming** – Significantly faster, more efficient, easier programming compared to competitive controllers. For Holbrook Service, programming of this nature means engineers can see live data and live de-bugging as the logic operates.

- **Live downloads and program changes** – Downloads and program changes can happen in real time without rebooting or cycling equipment, which reduces equipment downtime and is particularly important in medical facilities like this one.

“All of this gives us choices, depending on the critical nature of the infrastructure we’re working with, to get the customer exactly what they need and exactly what they want to pay for. It makes people feel like we’re addressing their specific needs, and not just making a blanket recommendation based on a generic project.”

Likewise, Lowell 17 has been impressed with the new Desigo PXC4 controllers, in large part because of the built-in flexibility that lets them adapt to what their tenants and accreditation organizations require. “With the PXC4, we can size them for exactly what we need, and if things change, we have options to add modules so our tenants can maintain their accreditation,” Spratt explains.



If you’re not looking at the PXC4, you’re missing out. It’s not just a superior product for the end user, but it’s also significantly less effort. **The combined savings of lower material costs plus 50% faster engineering times is powerful.** So, if I’m bidding against another contractor, the PXC4 makes me feel really confident.”

David Carpenter, Controls Manager
Holbrook Service

Installation and commissioning benefits from PXC4 controllers

According to Carpenter, the PXC4 engineering and installation process was significantly faster than they had experienced with other controllers: “This project took us about half the time because of the custom saved library. That is, it was easy to use an existing PXC4 controller that was already configured then manipulate the block programming; that’s smoother and faster than what we’d have to do with other controllers. And the PXC4 fits into the panel easier.”



Further, the license-free ABT Site simplifies the engineering process for contractors like Holbrook Service. With this, Carpenter can download necessary documentation, start the engineering process, and complete the programming and commissioning – all within a license-free and openly available environment.

This project took us about half of the time because of the custom saved library.

“The ABT Site is especially good for sharing, so all of our technicians can access the entire database that’s current and up-to-date. And, once the job is programmed and commissioned, any controller can become the starting point for a new controller on

another project. It becomes a database that grows as you continue with new projects, which saves more time going forward,” says Carpenter.

For Spratt, the faster and more efficient installation and commissioning is especially important to the building’s tenants, who depend on comfortable and safe environments for patient care. “We have to maintain this building for our tenants under contract and for health and safety standards. So, when you have something that’s quick and easy to install, you just can’t put a price on that,” he says. In fact, Spratt explains that this particular installation was so efficient that he didn’t need to notify their customers of any downtime at all. “That’s a big plus for us,” he notes.

“One other big difference we noticed,” notes Carpenter, “was when it came to tuning PID loops.” Proportional, integral, and derivative – or PID – loops are used to maintain precise control of temperature, pressure, flow, or any other physical property within the HVAC system. Carpenter explains that PID loops can end up being very sensitive and reactive with 100% outside air. “But with the PXC4, being able to tune [PID loops] these required very little effort. We might spend a half day manipulating other controllers to get the required deadbands, but the live debugging in the PXC4 block programming makes this very simple and reduces the time required to program.”

Spratt concurs, and also notes that, when compared to previous controllers, the PXC4 offers a simple “install



and go” solution. “We just haven’t had any problems. Normally, you’d install a new controller and then spend a few weeks to a month tweaking it to get it exactly right. Holbrook installed and programmed it, got the PID tuned, and that was it. We were up and running in just one day.”

Spratt recognizes that the technologies and controls within their building help create the environments that enable patient care, recovery, and healing. And thanks to the partnership with Holbrook Service and the Desigo PXC4 controllers, Lowell 17 can make patients – some of whom stay in this medical building for months – more comfortable.

According to Carpenter, “The way the building operates is really based on how you do your programming in the building automation system. With the PXC4, it’s easier to get to these outcomes. For example, compared to controllers from other manufacturers, the PXC4 lets us make a controller that really knows what’s going on in the building so you can respond to current demands.”

Better control for patients thanks to remote management

“We’re on call 24/7,” says Spratt, who lives about an hour away from this medical building. With the PXC4, he notes: “I can remotely access the building controls and make adjustments. Something that used to take a couple of hours to drive in then manually troubleshoot can now be done quickly from my computer.”

In other words, with remote access through Desigo Optic, Lowell 17 can bring a patient’s room back online in 15 minutes or less, compared to the previous solution, which required onsite changes. “This gives us better control for our patients. And when the patients are happier, we’re happier. So having remote access to the building controls is invaluable,” says Spratt.

“My expertise is on the mechanical side, so I appreciate working with David. Every building is different, and David gets that. He doesn’t tell me what to do; I tell him what we need to achieve and he helps us get the programming in place to make the building work the way we need it to,” Spratt concludes.

PXC4 Advantages for Holbrook Service



Block programming

A single programming tool and shared, central database make it easy to complete all field devices and plant controls.



Flexibility

16 onboard I/Os can expand up to 40 I/Os, enabling providers to build the controllers best suited for the application. As the customer’s needs change, I/Os can be extended without replacing the device.



Reliability

Powerful controllers with extensive functionalities, the PXC4 reliably provides alarming, scheduling, trending, and integration.



Visibility of equipment

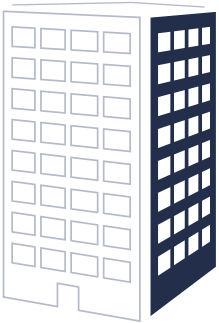
Built-in web interface provides ease of access to PXC4 controllers as well as remote management, maintenance, and troubleshooting.

Enabling patient care, recovery, and healing with PXC4 controllers

“One of the largest tenants in this building is a long-term care facility. These patients are here for a really long time, so keeping them comfortable while they’re recovering is very important for us. It’s also important that we’re able to keep patients safe,” says Spratt.

PXC4 Advantages for Lowell 17’s medical office building

- Application flexibility
- Ease of programming
- Remote access
- Reliability
- Streamlined cost structure



Published by

Siemens Switzerland Ltd

Smart Infrastructure

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6300 Zug

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For the U.S. published by

Siemens Industry Inc.

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Status 10/2022