THE BENEFITS OF CONSOLIDATING SCHOOL BUILDING SYSTEMS

Managing any building is complex, and when it's a school, reliable performance is essential for supporting classroom focus, as well as budgets. Yet as regulations evolve for concerns like indoor air quality, sustainability, and safety, facility managers may find it difficult to get the performance they need from a patchwork of aging, siloed systems.

If these challenges sound familiar, system integration may be the answer. This technical brief will help you navigate the key factors to consider.

CHALLENGE #1: OLD SYSTEMS, POOR PERFORMANCE

Many schools struggle to get by with old building systems that perform poorly.

It may be difficult to get the HVAC system to perform to current industry standards, which in turn can lead to poor indoor air quality (IAQ) and wasteful energy use. Security or life-safety systems may be laborious to maintain and adapt to new needs. The lighting systems may also be wasting energy. And it can be difficult to even know which systems are currently running, without being onsite to see for yourself.

All of this adds up to numerous opportunities for aging building equipment to waste energy, money, and time. Yet schools typically operate on tight budgets with many demands – so replacing every old system is usually not a realistic option.

Fortunately, your systems don't necessarily need to be replaced to achieve effective operations.

CHALLENGE #2: LACK OF INTEGRATION

"How do I get all these systems to work together?" It's another common point of frustration among school facility managers.

As challenges become more complex, it can become increasingly necessary to coordinate building systems for greater efficiency. For instance, to meet sustainability targets, you may need an easier way to monitor whether lighting and HVAC systems are operating, and to reduce their use in parts of the school that aren't currently occupied.

Yet traditionally, each system has its own server with its own login, its own user interface, its own programming tools, and it may run on a different protocol from other systems. None of it plays nice together, and everything has a separate password to keep track of.

Multiply that confusion across numerous systems, and you may feel like you spend more time wrangling applications rather than managing your building.

Honeywell

CHALLENGE #3: LOCKED INTO CONTRACTS

Some districts have tried to overcome such challenges by consolidating building systems with a single vendor – only to discover that the suggested savings have never quite materialized, and now they're also stuck in a long-term service contract that prevents them from seeking help elsewhere.

And because that service contract could last 10 years, such examples can lead other schools to delay addressing their building needs, simply to avoid getting locked into an unwanted contract.

CHALLENGE #4: CONFUSIONS ABOUT "OPENNESS"

It's not always clear what vendors mean by "open," which is why schools can inadvertently get locked into an exclusive provider for engineering and maintenance – rather than the fully open system they thought they'd invested in.

This happens because the term "open" gets used in numerous overlapping ways, such as "open system," "open procurement," "open protocol," "open service," "open managed" – to name a few variations. Unfortunately, these terms are often used inconsistently or incorrectly, and they can be distorted to the advantage of particular vendors.

So while a developer might call their product an "open system," some aspects such as the service contract may not be open. Your school could own the equipment and software license, which can theoretically be managed by anyone with the know-how, yet only the installer has access to the programming tools and your unique passwords – effectively giving them exclusive control over service for your building.

For a more in-depth primer on the many types of "openness" and the pros and cons of each, see our technical-resource guide on "How Open Systems Optimize Building Operations."

STEP #1: START WITH AN INTEGRATION PLATFORM

The answer to the first two challenges is to get your school's systems talking to each other on a common network. When properly integrated, building systems become much easier to monitor and manage.

An integration platform such as the Niagara Framework™ speaks many system languages and protocols, enabling it to connect to nearly any existing building system. And Niagara doesn't just connect systems – it also "normalizes" or translates the data from each system so that they can share information and interact with each other.

For facility managers, an integration platform means that you now have only one system to learn, with a single password to remember. All settings and data are provided in a unified interface, making building operations much more straightforward. For example, you can set common schedules and alarms across all systems and devices.

Integration also makes it easier to get analysis of your data across systems (old and new) to identify broader trends – insights that may help you improve energy use and indoor air quality, or give you earlier warning of maintenance needs.

Ultimately, when building operations are easier to manage and understand, you can more readily improve performance – even with older systems and equipment. From working towards sustainability targets to maintaining consistent comfort and IAQ, you can meet operational goals much more effectively once your systems are integrated.

YOU CAN REUSE OLD WIRING, TOO

Increasing data speed can also improve building performance without replacing older equipment – and T1L Ethernet is a low-cost way to do this.

T1L is a new open standard (IEEE802.3CG) for high-bandwidth networking. It creates an IP network (Internet protocol) using the twisted-pair wires from traditional building networks.

This lets you reuse old wiring for high bandwidth – which used to require expensive "CAT 5/6 Ethernet" wiring. Building controllers such as the Honeywell Optimizer family can enable T1L Ethernet.

STEP #2: AN OPEN SYSTEM SHOULD BE FLEXIBLE

Look for an integration platform that can support the infrastructure and needs you have now while also giving you the flexibility to add new systems or capabilities in the future.

The Niagara Framework is highly open, enabling extensive development of new functionality on top of the base system. And because it normalizes data between systems, Niagara can integrate old, new, and future systems from multiple manufacturers.

Such flexibility gives schools more control over equipment upgrades, enabling a broad choice of manufacturers and a gradual, phased approach to upgrades when needed.

Likewise, because Niagara's interface is browser-based, it's easy to use on a wide variety of devices such as computers, tablets, and smartphones. This in turn gives you options for cloud-based connectivity, meaning that when needed, school systems can be operated remotely outside of regular hours, or multiple schools can be managed from one central district location.

For example, this is just what Honeywell's Remote Building Manager does – it's a secure, cloud-based supervisor system that lets you operate any number of buildings from any location. An application like this is easy to pair with an integration platform such as Niagara, giving you oversight and control beyond school grounds and hours.

In short, a good integration platform should enable you to choose capabilities and adapt to future needs, even if you aren't able to fully anticipate them today.

STEP #3: THE IMPORTANCE OF OPEN SERVICE

As discussed earlier, many vendors sell "open systems" that are nonetheless restricted in key ways.

For instance, system set-up, programming, and device commissioning are often done with proprietary engineering tools. These engineering tools and databases might not be provided to you, meaning that, in effect, you are still partially restricted to a particular vendor for their access to these tools and the details of your school's configuration.

To determine how open a system truly is, be sure to carefully investigate who has access to the engineering tools and databases, the source files for controller programming, and the supervisor software.

With Niagara, Honeywell ensures that you are provided with all tools, databases, files, and permission to use or modify them as needed. From server tools and building manager tools to the tools for controllers, thermostats, and field devices – everything is built in and transparently provided for your use.

Likewise, in an effort to ensure customers have access to fair, competitive pricing, we do not restrict our authorized contractors by territory.

In short, Niagara is an example of an open system that also enables open service. You have the flexibility to choose the service provider you want, and to change at any time.

THE NAME BUILDINGS TRUST: HONEYWELL

Helping buildings achieve safer, smarter, and more efficient operations has been the bedrock of our business for generations – which is why today, Honeywell technologies are used in more than 10 million buildings worldwide.

How? Because we've developed expertise in each part of the job – from developing the software and equipment, to integrating open systems, and engineering the performance that buildings of all types depend on to get results.

We support schools and districts of all types and sizes, and we're ready to help you too.

Whether you're seeking a reliable contractor to help you integrate your building systems, looking for ways to achieve specific goals, our are simply trying to understand what to prioritize and how to fund it, our experts are available to consult.

ADDITIONAL RESOURCES

This technical brief summarizes the benefits of integrating school building systems.

If you'd like to explore other topics that may be relevant to your school's building operations, these resources can provide further insights.

- "How Open Systems Optimize Building Operations" – this technical guide explains the many flavors of "openness," and the pros and cons of each.
- "The Future of Building Integration Could Be Old Wiring" – this technical guide explains the new T1L Ethernet standard and why it's ideal for buildings.
- Honeywell Remote Building Manager – learn more about this system for providing secure and easy control of any number of buildings, from anywhere.
- Honeywell Optimizer Building Controllers – see how our latest family of building controllers are designed for convenience, compatibility, and cybersecurity.

Find out what your school can achieve
Honeywell knows buildings – and we're always ready to help
buildings.honeywell.com/BMS

Honeywell Building Technologies
715 Peachtree St NE
Atlanta, Georgia 30308
buildings.honeywell.com

THE FUTURE IS WHAT WE MAKE IT

Honeywell