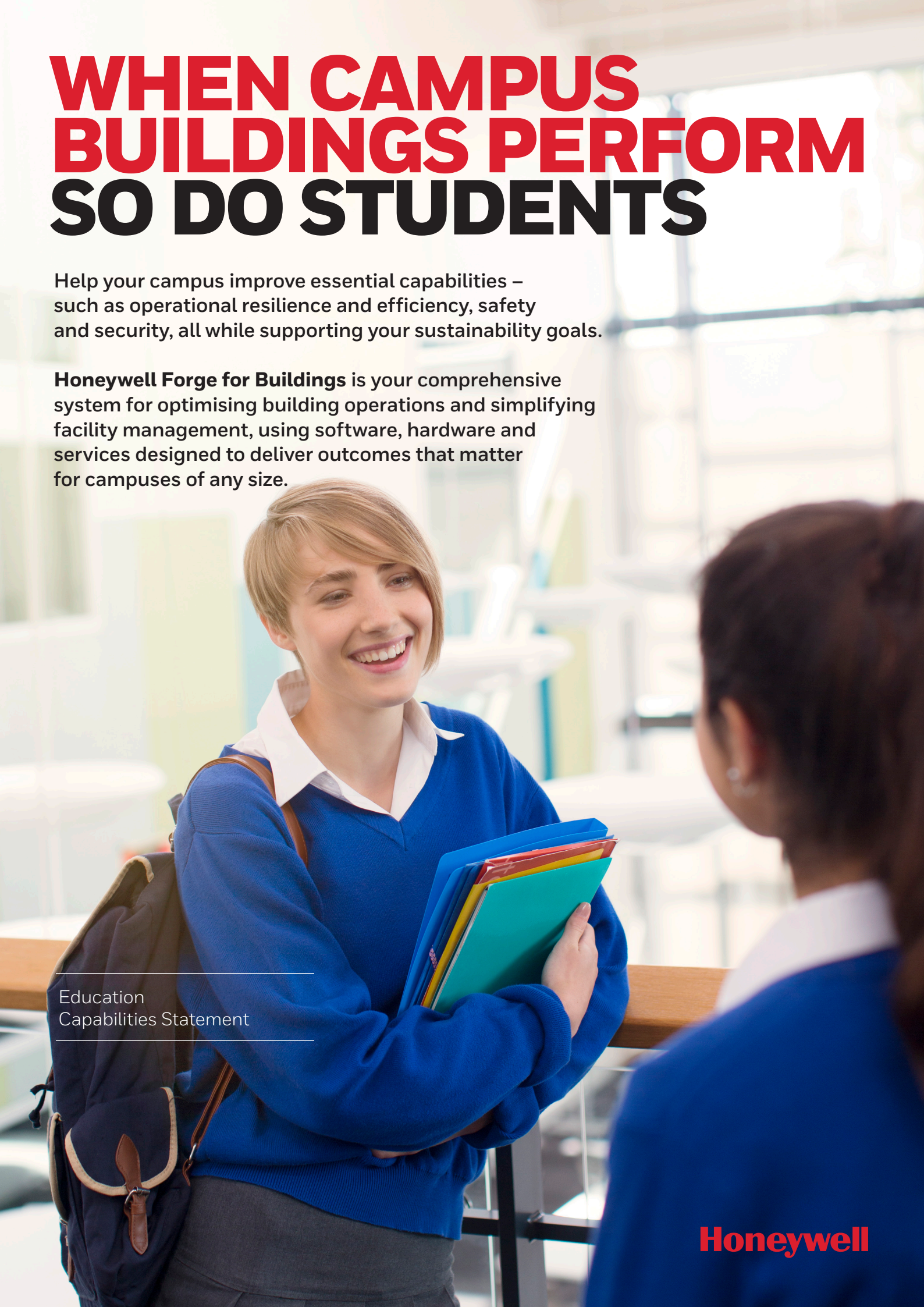
WHEN CAMPUS BUILDINGS PERFORM SO DO STUDENTS

Help your campus improve essential capabilities – such as operational resilience and efficiency, safety and security, all while supporting your sustainability goals.

Honeywell Forge for Buildings is your comprehensive system for optimising building operations and simplifying facility management, using software, hardware and services designed to deliver outcomes that matter for campuses of any size.



Education
Capabilities Statement

Honeywell

BETTER STUDENT OUTCOMES START WITH BETTER OPERATIONS

Honeywell solutions help keep people and places safe, improve the building experience and help support sustainability goals in more than 10 million buildings worldwide.

Educational institutions at every level of learning count on us to help enhance building performance and meet the expectations of students, staff and the local community.

A school's building footprint can vary greatly in size and number of buildings – from a single primary school building to a multi building school, university, polytechnic or TAFE campus.

Despite operational differences, schools in Australia and New Zealand (ANZ) serve a common purpose. They are places where dedicated teachers and staff seek to provide the best learning environment in a setting that is safe, secure and comfortable.

THE AUSTRALIAN SCHOOL GAP

Many Australian schools or school systems have buildings on their campus of varying ages - some built within the last five years and some built in the last century. The complication increases for campuses with heritage-listed buildings. For example, in New South Wales, the average age of a government school building is 46 years old.[1] This can present a host of challenges for facility management teams. Many require upgrades to improve energy efficiency, reduce environmental impact, increase safety and security, as well as enhance the student experience. Furthermore, there is a widening gap between the richest schools in the country and the poorest: Australia's four richest schools spent more on new facilities and renovations than the poorest 1,800 schools combined[2]. This gap is critical considering the poorest 50% of schools educate nearly five times as many students as the more well-off schools.

It's a similar story in higher education where the wealthiest schools have mostly weathered the pandemic's financial challenges while less-well off universities have seen their revenue decline[3].

School leaders are often forced to defer all but the most critical building repairs and upgrades because of scarce resources and more urgent priorities. As a result, many campus buildings continue to deteriorate, student learning suffers and facility teams are expected to keep decades-old systems operational.

The impact of a substandard learning environment is profound: the Gonski Review report found over the past decade Australian student performance has declined at all levels compared to international benchmarks – with a significant portion of students not meeting the minimum standards of achievement[4].

By considering smart building solutions and leveraging new technologies building operations teams can focus on higher value priorities versus constantly responding to reactive break-fix calls or hot and cold comfort issues – paving the way for solutions that can improve the learning environment for students, staff and visitors alike.

ABOUT THIS HONEYWELL CAPABILITIES STATEMENT

This capabilities statement identifies challenges education leaders and building managers may face with regards to aging and underperforming buildings. It also identifies ready-now technologies that can help school leaders deliver on their commitments and meet the high expectations of their communities.

Honeywell offers decades of experience helping campuses address their toughest building challenges. Our dedicated teams of building technology experts draw on unique domain knowledge, a network of highly qualified partners, and an extensive portfolio of software, hardware and services designed to support the specific needs of each campus.

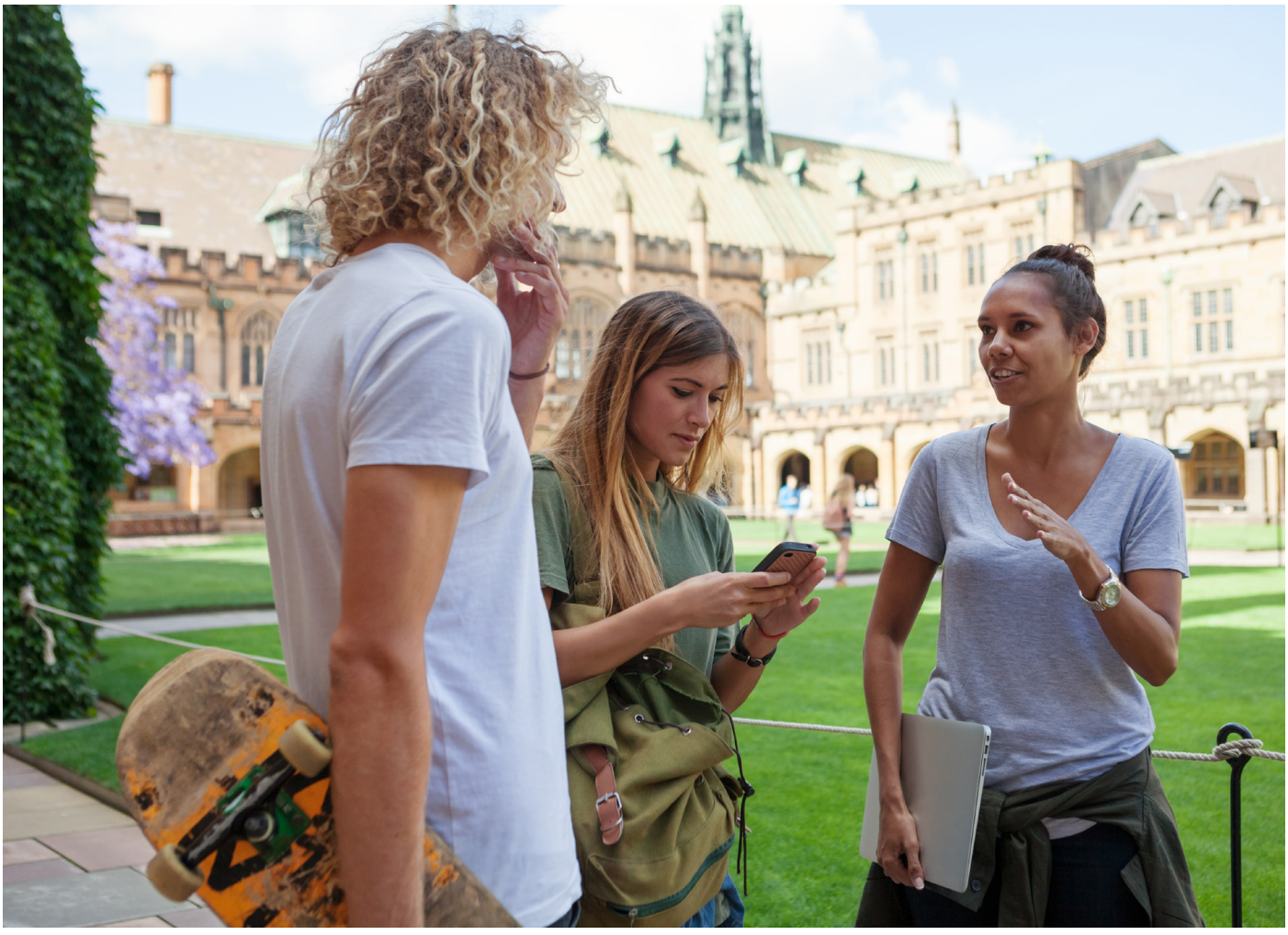
Through our integrated approach to smart building technologies, facilities teams can deliver on key outcomes, not just manage point solutions. This approach is rooted in data. The ability to connect, collect and control data from assets in your building portfolio can enable better decision making for both building maintenance and health, safety and environment (HSE) teams to make school facilities safer, healthier, more comfortable and even more energy efficient.

Our outcomes-focused approach is designed to help facilities teams to solve the problems that are most critical to them. This document outlines some of our key solutions that can help address specific outcomes; however, our team of experts will work with you to understand your challenges, the outcomes you want to deliver, and from there work with you to develop a package of solutions that can help achieve these goals. Many of these solutions can help to achieve multiple outcomes.

To learn more about how Honeywell can help you improve building performance and accomplish your most critical operational goals, visit us online or contact your Honeywell representative.

HONEYWELL FORGE FOR BUILDINGS CAN HELP YOU

- Demonstrate compliance
- Create an exceptional occupant experience
- Improve operational efficiency
- Build resilience
- Increase safety and security
- Help meet sustainability goals



SOLUTIONS TO HELP CREATE AN EXCEPTIONAL LEARNING ENVIORNMENT

Many older campus buildings may have outdated, inefficient HVAC systems and other potential hazards that make for less-than-ideal learning environments. Students – along with staff – are increasingly demanding healthier buildings with improved indoor air quality (IAQ). This is putting pressure on schools that have not yet modernised legacy structures and systems. Fortunately, advances in smart building technology now make it easier and more cost effective for them to upgrade and improve the overall occupant experience of their buildings.

INDOOR AIR QUALITY

Air quality is essential to the learning environment and creating a healthier school. It can impact a building's structural integrity, energy efficiency and even occupant well-being. However, according to a recent study from the UNSW Sydney many Australian school kids could be learning in classrooms with poor indoor air quality[5](IAQ). Studies of New Zealand classrooms identified widespread elements of poor IAQ including excess moisture, biological contaminants volatile organic compounds (VOCs) and CO_2 [6].

The backbone of indoor air quality – ventilation, relative humidity, filtration, and pressurisation – is also the starting point for a healthier building. Every building has these functions, but they may not be optimised for building health. A modern healthy building improves the well-being[7] and productivity of the people who use it while also considering energy efficiency and sustainability goals.

Honeywell offers a suite of Healthy Buildings solutions, along with a dedicated team of experts, that can help improve indoor air quality and create a better student and staff experience in a building.

Improvements start with measurement: The importance of IAQ sensing

You can't change what you don't measure. That mantra is true for many things in life – including IAQ. The Honeywell TR50 Sensor provides continuous IAQ monitoring and simple visual confirmation of air quality. A display keeps occupants and facility managers apprised of five key parameters – carbon dioxide (CO_2), particulate matter (PM2.5), volatile organic compounds (VOCs), temperature and humidity. The TR50 can connect to any controller, regardless of brand, or feed data to the Honeywell Remote Building Manager as part of an IAQ dashboard. The sensor displays a room's air quality score along with a color-coded LED indicator and can enable demand-controlled ventilation with additional parameters, on top of temperature control.

The brains of your building: Why building management systems matter

A building management system (BMS) is often considered the "brains" of a building. It is a centralised system that monitors and controls a building's mechanical and electrical equipment, including HVAC, lighting and even security systems. It can optimise energy consumption by adjusting the temperature, ventilation and lighting based on occupancy, schedules and external conditions such as weather. A deliberate and purposeful building controls strategy can also help to improve the health of a building by managing temperature, humidity, ventilation and even pressurisation.

The Honeywell ComfortPoint Open and ComfortPoint Niagara are robust BMS solutions that provide greater cybersecurity protection with an easy-to-install and maintain system.

Keep your upgrades performing: Why continuous monitoring and measurement matter

Continuous monitoring is a critical next step once IAQ improvements are made to understand ongoing building performance. Cloud-based dashboards that connect to the BMS and sensors on equipment can aggregate information to give a system-wide view of building performance – and can even provide insights across an entire building portfolio. Honeywell's Remote Building Manager makes it easy to monitor and manage building status, including the factors affecting IAQ.

In addition to helping create a building controls strategy and enabling continuous monitoring, Honeywell can also help improve the IAQ of your building through filtration, Electronic Air Cleaners, Portable Air Purifiers, along with other resources.

SOLUTIONS TO IMPROVE OPERATIONAL EFFICIENCY

In the previous section, we talked about the importance of a BMS solution to help manage your campus building. These systems, along with overall integration platforms, can help to improve the operational efficiency of school buildings – whether facilities teams are concerned about a single asset or an entire portfolio. Smart building technologies that help improve operational efficiency can potentially have a big impact on how your team manages its campus buildings. Some benefits may include better asset control and utilisation, improve the productivity of your building maintenance teams, automate workflows and provide visibility into how your entire building portfolio is performing against key performance indicators (KPIs).

Whether you need an on-premise integration platform because you manage sensitive and secure areas or you want the flexibility of a cloud-based platform, Honeywell has solutions that can change the way your school operates.

Integrate multiple systems with a powerful on-premise solution

The Honeywell Enterprise Buildings Integrator (EBI) allows education facilities to monitor and manage one building or an entire campus using a single platform. The highly scalable software makes it easy to bring new buildings online, even if they use different operating systems and equipment. Using a system agnostic ontology, EBI can also enable connectivity between new technology, legacy systems or other suppliers. It can provide actionable information across multiple building systems including the BMS, security and access control, as well as energy management to create a seamless building management solution to help operators make faster, better decisions about building operations.

EBI is designed for native integration with Honeywell Building Manager, Energy Manager, Security Manager, LifeSafety Manager and Digital Video Manager.

Before issues escalate: Manage maintenance and asset performance

Facilities teams can identify issues before failures occur to improve building performance, promote asset longevity, reduce downtime and identify maintenance improvements based on needs, not a schedule, with Honeywell Forge Performance+ for Buildings | Predictive Maintenance.

The cloud-based software uses real-time predictive analytics, equipment models and easy-to-use dashboards to display building performance, identify improvement opportunities and help service teams track corrective actions to conclusion. With Predictive Maintenance, building operators can view asset availability, identify performance risks and easily manage open service cases. They can also track, compare and reduce energy and water consumption and costs.

CREATE A BASELINE PERFORMANCE

A thorough assessment of your school's performance can establish a baseline for improvement. This means conducting a comprehensive review of building systems to identify opportunities for improvement, areas of strength and the most optimal ways to use your budget to make necessary changes. Honeywell can help conduct the assessment or engage a third-party organization. **Register here** for a free assessment and guidance on how to improve your campus's performance.

SOLUTIONS TO BUILD RESILIENCE

Downtime is not an option for school buildings. Creating and maintaining building resilience is critical when it comes to your campus. Resilience can mean creating a better cybersecurity defence, making sure your campus doesn't go offline with better maintenance support, and also creating redundancy from a power management perspective in the case of severe weather or unexpected events.

Proactively protect your campus's operational technology (OT)

A recent report from a cybersecurity firm says cyberattacks on New Zealand education institutions are growing exponentially, and schools are in need of better protection[8]. Australian schools face similar threats: the Australian Cyber Security Centre (ACSC) threat report identified the education sector as one of the top sectors at risk of cyber attacks[9].

Discussions about cybersecurity usually focus mainly on IT systems – protecting data, proprietary systems and personal information. Security for operational technology (OT) systems – those that control, monitor and actuate processes, equipment and operational environments – continues to gain attention and schools need to take a proactive approach to protecting their building's OT environment.

Honeywell can help schools strengthen their OT cybersecurity strategy. From cyber assessments to plans and advanced software capabilities to remote monitoring to enable a fast response in the case of a breach, Honeywell experts can help schools mitigate potential damage to finances, operations and reputation. We offer cost-effective solutions that are scalable in both size and an organisation's cybersecurity maturity level to help optimise the integrity, availability, and safety of your systems. Additionally, Honeywell holds ISA/IEC 62443-4-1 Process Certification for its software development lifecycle. ISA/IEC 62443-4-1 certification underscores out commitment to following best practices and standards in developing secure, cyber-resilient products.

Improve building maintenance

Help your campus maintenance teams do more with support from Honeywell Building Performance Services. We go beyond the conventional approach to service and support by creating a proactive, flexible end-to-end solution that can be tailored to meet each building's key performance indicators for energy consumption, uptime and other requirements.

The scope of our services ranges from providing essential maintenance and training to full-service remote monitoring and lifecycle management.

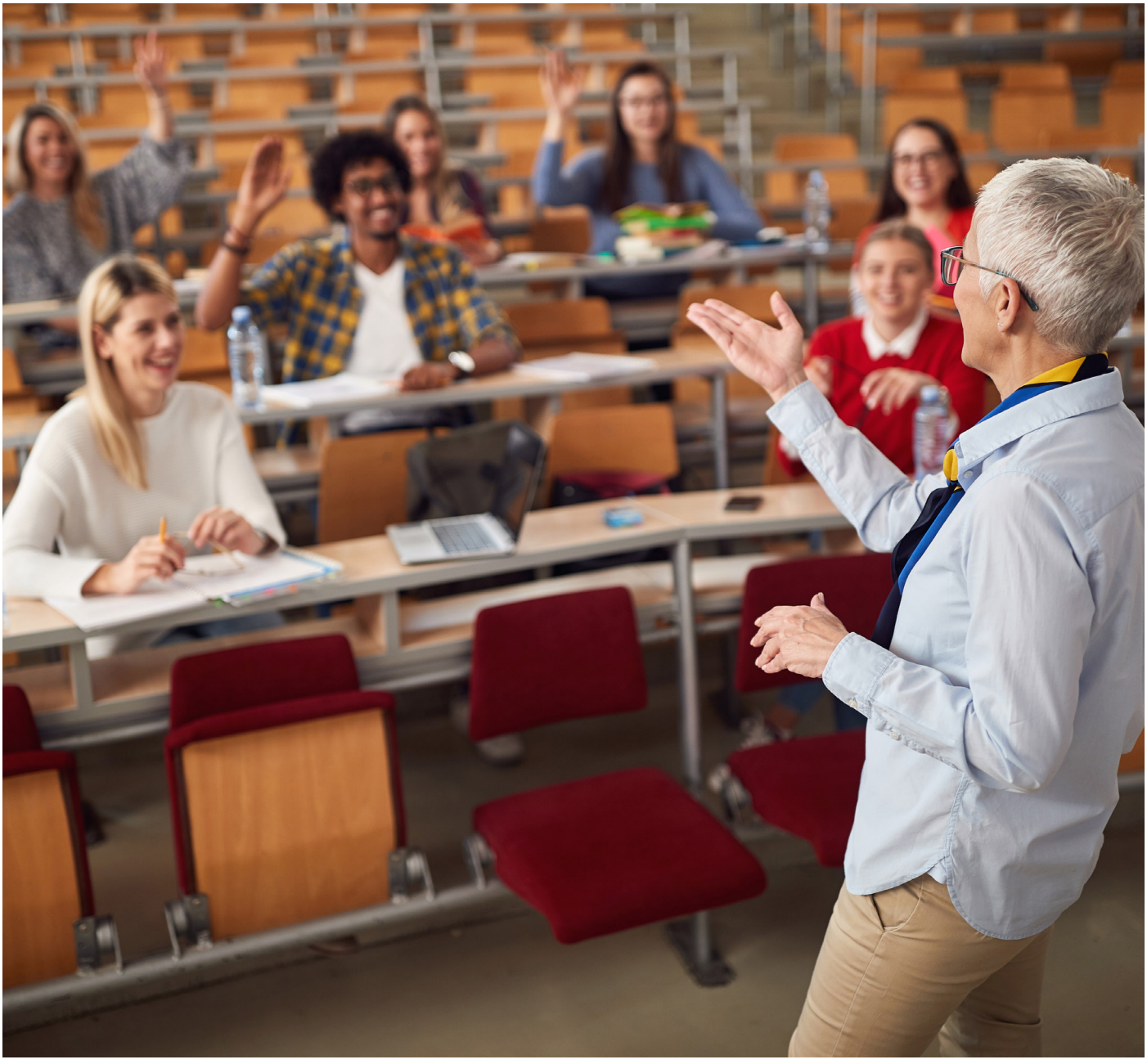
Our most comprehensive service plans feature artificial intelligence-based maintenance, leveraging Predictive Maintenance to improve asset uptime, industry leading cyber protection, remote support, guaranteed uptime and energy saving provisions.

By digitalising the service process, Honeywell can help reduce response times and service truck rolls, provide real-time status updates, improve first-time fix rates, and make the overall service experience more efficient and resilient. When we do dispatch technicians, they are fully briefed on the problem and have the right parts in hand before the truck heads to your school.

Create energy resilience for tomorrow while optimizing results today

Rising energy costs, complicated utility billing, and expanding sustainability requirements are already challenging schools worldwide. Moreover, experts in numerous fields – scientists, market analysts, investors, insurers, legislators – predict bigger changes ahead. Energy shortages, heat waves, and extreme weather lead the news, and climate effects that were modeled for 25–50 years in the future are also emerging now10. In short: the frequency and cost of volatile weather and unstable grids are creating an urgent need for governments to be better prepared.

Honeywell Forge Sustainability+ for Buildings | Power and Demand Management can help schools reduce utility costs, take steps towards supporting decarbonisation goals, and bring clarity to energy management plans while helping to maintain operational continuity and resilience. Its Power Manager application can be used as a part of Honeywell Forge Sustainability+ for Buildings to help schools build energy resilience with on-site generation and storage with the option to incorporate renewable sources; modify power usage as needed, including dynamic load management, automated demand response, and distributed energy resources; and dynamically reduce non-critical building loads and optimise on-site microgrid operations to support critical building functions when the utility is experiencing high usage, frequency changes, and/or power disruptions.



SOLUTIONS TO INCREASE SAFETY & SECURITY

The task of securing a campus is complex. Security breaches can and do happen at schools of all sizes. Security staff need to be prepared for anything.

Honeywell security offerings are flexible and adaptable enough to meet the security needs of a campus. Honeywell's expertise in access control, intrusion prevention, video systems and visitor management provides a comprehensive end-to-end security solution.

Manage security across a campus to improve situational awareness and access control

Honeywell offers robust, global integrated solutions for schools to help protect staff and property, optimise productivity, and comply with strict industry regulations all while reducing operational costs.

Honeywell Pro-Watch 6.0, the latest iteration of the Honeywell Pro-Watch Integrated Security Suite, provides automated incident workflows and system health dashboards to further reduce operational costs and enable stronger compliance, without adding work to security teams. It also provides information-driven focused responses to help improve uptime. It features Salvo views without a bounding box and allows security operators to access incident reports with evidence attachments; operators can also manage both access and video control through a unified mobile app. It also features enhanced alarm management allowing operators to search, filter and rollup events by severity and time. It also integrates across Honeywell access control platforms and features native integration to Honeywell Vindicator panels, offering military-grade intrusion detection capabilities.

Additionally, Honeywell EBI which was discussed earlier in this document can also support your integrated security needs across a campus. Both EBI and Pro-Watch are open platforms that can integrate with third-party technologies like Oloid, iLOQ, Idemia, and more.

Honeywell Forge for Performance+ Buildings | Visitor Management takes managing who is in the building from a clipboard to a smartphone by enabling seamless building access for staff and letting visitors complete the prescreening process using their own phones. The solution streamlines the sign-in and badging process and allows security teams to monitor the current location of everyone in the building. An intuitive dashboard also enables leaders to monitor and manage building occupancy to ensure compliance with specific protocols.

Leverage advanced video capabilities

Video systems are an essential element of any building's security strategy.

Designed with cybersecurity in mind, Honeywell Video Products, including cameras, video management systems and analytics, work with video systems that comply with regulatory requirements. The 35 Series rounds out Honeywell's full range of cameras that provide a greater emphasis on cybersecurity and compliance. The higher-resolution IR cameras cover larger areas, both day and night, with smart human and vehicle motion detection to reduce false alarms.

Pro-Watch VMS R750, is a feature-rich, user-friendly video management platform which controls video subsystems to collect, manage and present video in a clear and concise manner. It also intelligently determines the capabilities of each subsystem across various sites, allowing video management of digital video devices through a unified configuration and viewer. Digital Video Manager is another option for a smart, scalable video system that can deliver critical information to help reduce risk and save valuable time.

Improve fire and life safety with earlier detection, faster responses and centralised decision making

Honeywell is a leader in fire and life safety systems. We create fire and life safety products that leverage connectivity to help create a smarter and safer world. Honeywell creates life safety systems that provide the earliest detection, enable the fastest responses, and centralise decision-making and management. We aim to create innovative technology designed to keep people safe, including those responsible for saving lives.

Honeywell fire safety devices including smoke and carbon monoxide detectors, fire alarm control panels, HVAC and sprinkler monitoring systems, and audible and visual alarm systems to detect anomalies as well as notify and communicate to building occupants the actions they should take.

Use advanced detection to stop fires from escalating

Every second counts during a fire. Advanced detection technology can detect minute traces of smoke, enabling a building operations team to assess the situation and summon first responders immediately to the scene. Honeywell pioneered very early warning aspirating smoke detection (ASD) systems, which can typically identify the presence of smoke much earlier than conventional smoke detectors. Honeywell VESDA Aspirating Smoke Detectors can provide the earliest possible warning of an impending fire hazard.

In addition to advance smoke detection, using Li-ion Tamer® can help school buildings to reliably detect the very early signs of failing Lithium-ion batteries by sensing battery electrolyte vapors (off gas detection), allowing earlier response to impending thermal runaway events by facility managers. The system also provides multi-point temperature and humidity measurements for improved environmental control and situational awareness across a wide range of applications.

Gain better awareness of fire system performance and access the data from anywhere

Connectivity and the Internet of Things (IoT) are changing the way fire life safety systems are installed, tested and maintained. Honeywell's Connected Life Safety Services (CLSS) is an end-to-end connected platform that gives public building HSE teams and facility managers insight into a fire systems' performance, testing and compliance data and potential maintenance needs from the convenience of a smart phone or tablet. It provides remote access to the fire alarm panel so the right people can receive alerts when events are generated and view asset information and system status across a campus.

The CLSS platform can also provide reliable and accurate alarm-event communication and maintain critical connection to central monitoring stations as POTS (Plain Old Telephone Service) is displaced and 3G networks sunset.

When used with CLSS, Honeywell Self-Test Detector is a new range of self-testing detectors that can help automate system maintenance, including testing and inspecting life safety systems. The patented and approved technology allows testing teams to overcome obstacles such as locked rooms, hard-to-access areas, high ceilings and large sites while the system remains operational. It provides efficient compliance with local regulations with the least disruption to operations.

SOLUTIONS TO SUPPORT SUSTAINABILITY GOALS

Energy efficiency and sustainability go hand in hand as more governments recognise the benefits of environmental, social and governance (ESG) principles[11]. As we've discussed earlier, improving the occupant experience and supporting sustainability goals do not have to be contradictory ideas.

Leverage systems that can monitor, control and optimize energy consumption

Many building operators do not have device or asset level energy use or carbon emission data. This can make it difficult to know how to make energy improvements. Honeywell Forge Sustainability+ for Buildings | Carbon and Energy Management is a ready-now application that can help building operators address two pressing, yet often conflicting objectives: optimising indoor air quality and reducing the environmental impact of buildings with the aim of improving carbon-reduction goals. The scalable, system-agnostic platform uses advanced controls capabilities, artificial intelligence (AI) and machine learning (ML) algorithms to create a baseline of energy consumption and carbon emissions across building assets and can help monitor, control and optimise those assets.

SOLUTIONS TO HELP DEMONSTRATE COMPLIANCE

Many of the solutions previously covered in this capabilities statement can help educational facilities demonstrate their compliance to guidelines and regulations related to cybersecurity, security, fire and life safety and sustainability. Ask a Honeywell expert about how you can leverage our solutions to address our specific compliance needs.

FEATURING PACKAGES THAT CAN BE CUSTOMIZED TO SUIT A SCHOOL FACILITIES' NEEDS, CARBON AND ENERGY MANAGEMENT CAN:

- Track energy use, Scope 1 and Scope 2 emissions and key performance indicators (KPIs)
- Prioritize the most cost-effective ways to save
- Manage utility bills and automate utility bill analysis
- Integrate with any BMS to manage alarms and alerts, monitor points, adjust schedules and proactively control your building
- Monitor live meter data for CO_2 emissions, energy and utilities
- Track multiple IAQ measures
- Use reinforced ML and AI algorithms to analyze historical and real-time weather data, HVAC data and IAQ parameters, and then autonomously adjust systems to meet desired parameters
- Optimize energy-intensive assets

THE HONEYWELL DIFFERENCE

Balancing competing priorities and doing more with less is business as usual for school officials. That goes double for HSE, security and facilities professionals tasked with making sure campus buildings are safe, secure, more sustainable and comfortable for students, staff and visitors.

Honeywell knows how to help improve building operations to deliver on critical outcomes with ready now solutions that can help meet the highest expectations of the community you serve.

Find out what your campus can achieve, with Honeywell

Visit us online or contact your Honeywell representative.

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THE FUTURE IS WHAT WE MAKE IT

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