

GET SMARTER ABOUT BUILDING MANAGEMENT

UNIVERSITY OF BRISTOL CASE STUDY



TREND

University of Bristol gets smarter about building management with Trend Controls

As a member of the prestigious Russell Group and one of the UK's original red brick universities, the University of Bristol has a long history of research and innovation dating back to 1876.

To prepare its site for changing user requirements and evolving energy management goals, the university set out to unify the various systems at work across the site into a single modern Building Energy Management System (BEMS) — turning to [Trend Control Systems Ltd](#) and Kendra Energy Solutions to integrate a standardised, open and robust platform for use across the site.

Although it first opened in its current form in 1876, the University of Bristol's history can be traced as far back as 1595. This long-standing history, as well as a reputation for social progressiveness — being the first university institution to offer equal admittance opportunities to men and women upon its 1876 opening — and innovation, has made the University of Bristol one of the UK's most popular higher education institutions.

Sitting at the intersection between social progression and innovation is the university's commitment to energy monitoring as it transitions to more energy-efficient practices. The University of Bristol is home to more than 6,000 members of staff and 22,000 students who use more than 300 buildings, which inevitably results in a significant amount of energy use. The university makes clear its energy management commitments and objectives, along with a timeline of achievements. Among these achievements is the strategy that the facilities team developed to minimise the site's baseload during the COVID-19 lockdown — an activity that highlighted a challenge in the university's BEMS.



On top of this, the university identified that its current setup was just not able to reach the goals for the future of the campus in terms of smart technology.

ROB COLLINS, HEAD OF CAMPUS SMART TECHNOLOGY AT THE UNIVERSITY OF BRISTOL, SAID :

“Prior to COVID-19, we assessed the building systems and identified some potential challenges and risks in the university.”

“Most of the risks came from functions like reporting and alarms in the supervisor system, which was old and falling behind the latest IT security protocols.”

“The building systems had been configured over time which limited how we could make changes to the existing BEMS and made projects more expensive. Departments and members of staff didn't want to pay for specific vendors to onboard projects onto the existing system, which subsequently led to a lack of trust in the system.”

With a legacy system that was expensive and no longer receiving maintenance support, the University of Bristol's campus innovation team needed a change.



AN OPEN UNIVERSITY SYSTEM

Following advice from an independent consultant on how to overhaul the university's BEMS in favour of a more open system with ongoing support, the University of Bristol was recommended Trend's IQVISION supervisor system. Built on the Niagara 4 Framework, IQVISION is a powerful platform that allows facility staff to monitor and manage buildings with full integration of controllers and devices across the campus — regardless of vendor or internet protocol.

[Kendra Energy Solutions](#), a Trend approved partner, was selected through tender to deliver the project. In addition to integrating IQVISION into the university in place of the existing collection of systems, Kendra was tasked with developing graphics for the interfaces across the various buildings — resulting in nearly 2,000 custom graphics templates.

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“The University of Bristol reflects one of the bigger changes happening within many organisations, which is that the normal facilities management role is transforming to be more data driven as the university works towards becoming a smart campus.”

DAVE CLAYTON, DIVISIONAL DIRECTOR, MIDLANDS & SOUTH WEST AT KENDRA



The integration of IQVISION into the university required a strategic approach to deploy the large-scale upgrade project. The Kendra and Trend teams had to navigate the university's existing architecture, including unifying the various separated communications protocols across the site. For example, the university's existing BACnet system was compartmentalised on different VLANs around the university. Each operated completely independently of one another, which produced duplicate addresses that caused clashes during integration.

BUILDING TRUST

With IQVISION installed, it became a matter of delivering the much-needed campus-wide insights. During the project, the campus innovation team engaged with the facilities managers, site engineers and department heads to identify the different needs across the site.

This helped define the interface design and level of accessibility for each user, allowing them to get the most value from the system.

“This involves employing new technologies and systems that can benefit efficiencies across the campus and moving away from multiple systems. We find that for organisations like the University of Bristol, this process can involve streamlining complex control networks. It leads to the question: are you really getting benefit from a PLC system when there is a BEMS also installed that can do 80 percent of the same tasks?”

DAVE CLAYTON

“There was a lot of work involved during the integration, but it was a good opportunity for us to also update our building visualisation.”

“There were situations where some of the visualisation still included equipment that had been removed several years ago, so this allowed us to address that and put better controls in place to capture future upgrades better and more quickly. The teams at Trend and Kendra were helpful and supportive throughout this process.”

“One of the strengths with IQVISION has been the ability to tailor it to individual users and their use cases.”

“It's also intuitive enough that we've been able to train users to diagnose and override equipment when necessary, wherever they are and without feeling that they need to call our team out each time. This has been helpful in getting users not only trusting the system again but also engaging with it in new ways that are adding value.”

ROB COLLINS



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As a university leading in research, the University of Bristol is focusing on unique outcomes from the IQVISION upgrade. One unique outcome is that the BEMS is going beyond ordinary building management and is supporting several of the research projects being undertaken.

A prime example is research being carried out on campus involving the monitoring of fish tanks. Previously, data was displayed on a small screen near the tank that someone had to manually check periodically. Data from this tank is now integrated into the IQVISION system and interface with custom graphics, so sensor data can be monitored on a mobile device from anywhere, at any time.

Moreover, facilities managers can use the BEMS interface and its digital capabilities to drive user engagement across the university.

ROB COLLINS:

“Whereas before there was no trust or interest in the BEMS, people are now coming to us regularly to ask about new functionality and graphics. The teams are regularly engaging with the system and identifying new potential use cases for it, and this comes from the open and flexible nature of the IQVISION platform.”

The University of Bristol is now looking ahead to the future goals that the BEMS can support. As the team works towards the University of Bristol’s targets and establishing a smart campus, they are confident that IQVISION and the ongoing system support from Trend are providing a future-ready platform for success.



ABOUT TREND CONTROL SYSTEMS

With a worldwide distribution and support network covering more than 50 countries, Trend Control Systems is a major international supplier of Building Energy Management Systems (BEMS). Trend’s BEMS are supplied, engineered and commissioned by approved systems integrators. Trend Control Systems is part of [Honeywell Building Technologies](#).

Trend Control Systems

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