

FUELLING CO² REDUCTIONS ACROSS SOUTH AYRSHIRE

SOUTH AYRSHIRE CASE STUDY



TREND

South Ayrshire cuts energy, expenses and emissions by almost 20% in one year with Trend BEMS.

The Scottish Government has set its sights on achieving net zero carbon emissions across the nation by 2045, aiming for overall emissions to be 75 percent lower than 1990 levels by 2030. Both the final and interim goals are ambitious, but local authorities are working hard to identify ways of reaching them.

South Ayrshire Council, responsible for around 112,000 people, is one authority leading the charge and making full use of technology to achieve more.



Scotland's 2045 target dates to the passing of the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019¹. This act enshrined into legislation the country's goal to see a 100 percent reduction in carbon emissions by 2045, with three interim targets: **56 percent lower** by 2020, 75 percent by 2030, and 90 percent by 2040.

The 2020 emissions interim target was achieved, with Scotland recording a 59 percent decline in emissions compared to 1990. However, the Climate Change Committee (CCC) has expressed concern for the country's progress towards the coming targets, stating that progress so far **"included a substantial contribution from the effects of the pandemic rather than policy progress"**². According to the CCC, "Scotland's 2030 goal rests on rapid action to decarbonise buildings."

The CCC's recommendation to decarbonise and manage emissions from buildings aligns with a focus for South Ayrshire Council. The council has

been taking steps to tackle its emissions for many years: between 2014/15 and 2018/19, the council cut its emissions by 26 percent³. Since 2020, the council's asset management team has been focusing on using Building Energy Management Systems (BEMS) to reduce the carbon footprint of its estate.

MODERNISING THE ESTATE

During the COVID pandemic starting in 2020, the asset team identified the need for remote management of building systems. This would not only allow systems to be monitored and controlled during the periods of lockdown, but longer-term would also allow energy use to be managed on an estate-wide scale rather than an individual site basis. The first step was to standardise the systems used.

Previously, buildings had been fitted with systems from various manufacturers, with many not being set up for remote access through IP connections. In addition, the IT team was transitioning over to use

Microsoft's Azure cloud platform and the facility network would need to be able to operate reliably on this platform — something that posed a challenge for conventional BACnet connections.

Several sites across South Ayrshire were fitted with control equipment from Trend Control Systems Ltd, which led to the council choosing IQVISION as BEMS for the estate.

Compatible with Azure and able to integrate with Trend and third-party controllers alike, IQVISION was the ideal option for connecting the estate.

"After 20 years, the Trend 963 Supervisor approached the end of its working life. Prior to reaching this stage, the Trend R&D Team had developed a new IQVISION Supervisor which was backward compatible with the existing Trend BEMS."

Stuart Lonie
Intelligent Buildings
Solution Consultant at Trend

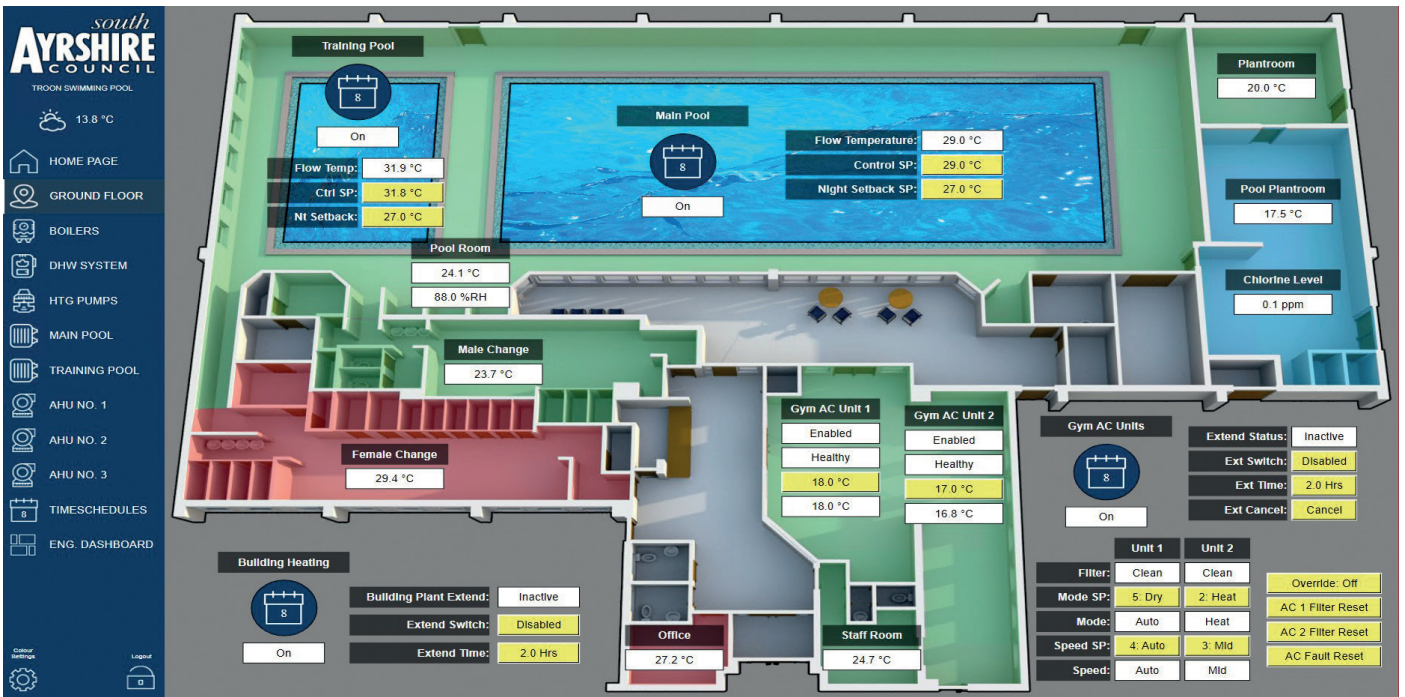


1. Scottish Parliament, Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, Published: October 31, 2019, Accessed: October 17, 2023. <https://www.legislation.gov.uk/asp/2019/15/contents>

2. The Climate Change Committee, Scotland's climate targets are in danger of becoming meaningless, Published: December 7, 2022, Accessed: October 17, 2023. <https://www.theccc.org.uk/2022/12/07/scotlands-climate-targets-are-in-danger-of-becoming-meaningless>

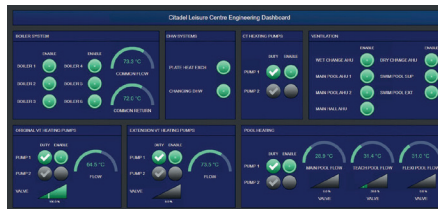
3. South Ayrshire Council, Tackling Climate Change at South Ayrshire Council, Accessed: October 19, 2023. <https://www.south-ayrshire.gov.uk/article/59329/Tackling-climate-change-at-South-Ayrshire-Council-Council>





“Backward compatibility helps to extend the life cycle costs for Trend customers. We advised South Ayrshire Council to upgrade from its 963 Supervisor to IQVISION and update the remote connections for each site. This would provide SAC with the opportunity to focus on energy reduction strategies across the estate as it strives towards net zero.”

Stuart Lonie

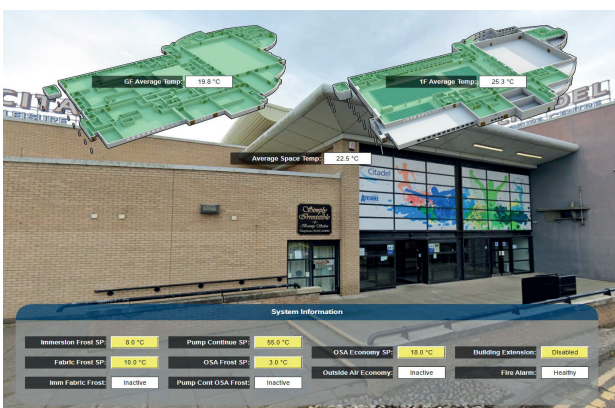


“With this being the council’s first pure Azure Cloud software deployment, there were several technical barriers we’d not encountered previously.”

Project lead David Thornton
Building Services Mechanical Engineer
South Ayrshire Council

“Creating an air gap between the facility network and IT network is essential, but ensuring cohesion between the networks and the setup of Azure was challenging,”

Thornton said. Multiple layers of security needed to be managed.



The estates team worked closely with Craigalan Controls, a building systems integration specialist with more than 20 years of experience.

Craigalan developed a project delivery plan with the estates team, and the Trend team offered technical support to help in overcoming the challenges of Azure integration.

“There were also challenges with connecting non-Trend controllers to the network due to the nature of BACnet. This is something we hadn’t dealt with before and the support from Trend and Craigalan was a great help.”

With the challenges overcome by using BACnet Secure for some of the non-Trend BACnet controllers, and with

much of the estate now connected through IQVISION, South Ayrshire Council set about addressing its carbon emissions.

REMOTELY REDUCING EMISSIONS

The estate management team can use the IQVISION platform to pull real-time data from across 69 sites to monitor information such as boiler plant operation, timeclocks, and internal and external temperatures. With 45 miles between the furthest connected sites, the ability to remotely access and manage systems provides immediate travel cost, time and emissions savings.

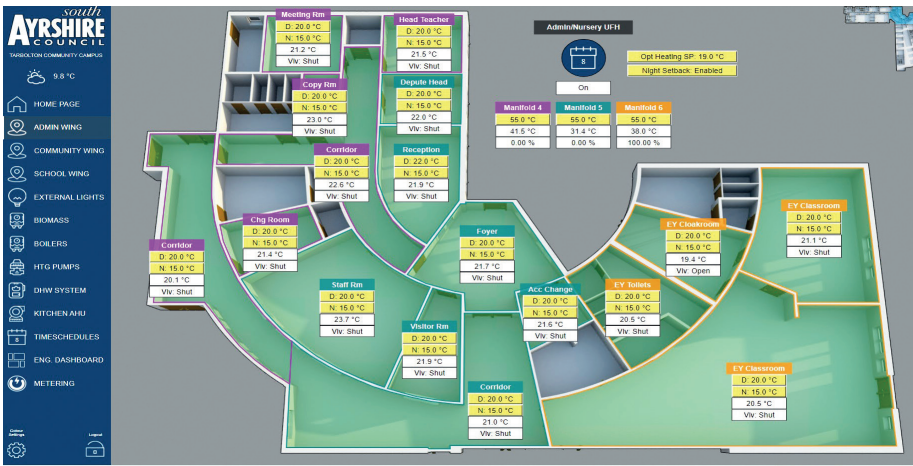
South Ayrshire Council has been able to measure the improvement in estate efficiency across the phases of the project.

In the first phase in 2021/22, where 48 systems were integrated, gas consumption was reduced by 10.2 percent — equating:

- 2.9 million kilowatt hours (kWh)
- £60,000 in cost savings
- 522 tonnes of carbon dioxide equivalent (CO₂e) reductions

This is 7 percent higher than non-BEMS sites.

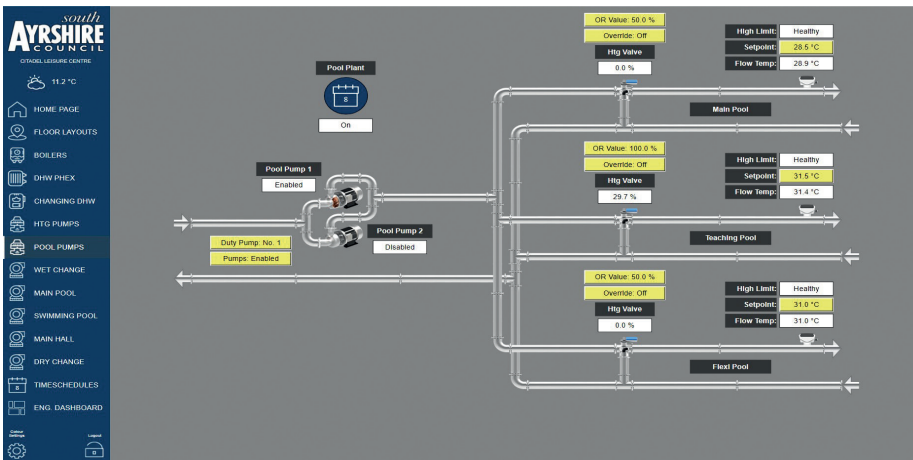
TREND



“The difference we’re seeing across the estate is huge. There are still more sites that we’re working to integrate into IQVISION, which will no doubt bring with them additional improvements.”

“Just having this view into data across the estate gives us insights that can bring us closer to our heat and energy efficiency strategy goals.”

David Thornton
Building Services Mechanical Engineer, South Ayrshire Council



As 2030 draws ever closer, tools such as BEMS that enable continuous reductions in carbon emissions will become increasingly important for local authorities across Scotland and the wider UK. South Ayrshire Council is leading the way in modern BEMS deployments — and is reaping the cost, time, and efficiency benefits.

For more information on this project, please contact

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All sites were integrated with IQVISION and managed directly by the asset management team in 2022/23, which has led to an 18.2 percent reduction compared to 2021/22 for the 45 gas-heated sites.

In total, reductions equate to 4.6 million kWh, £245,000 of costs avoided, and 833 tonnes of CO₂e reduced — 11 percent higher than non-BEMS sites.

The estate-wide visibility has also unlocked new potential approaches to managing carbon emissions. Previously, because sites were managed individually, it was difficult for the council to offer broad guidance for heating systems. The greater level of control using BEMS has allowed development of council-wide guidance on heating schedules, set points, and established procedures for heating requests to streamline and standardise processes.

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 Automation](https://www.honeywell.com/building-automation)

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