Real Life Case Study: CO2 MONITORING IN SCHOOLS

SMARTER, QUICKER THINKING

How smart CO2 monitoring rapidly transforms classroom air quality and carbon footprint.

CHALLENGES

- Ensuring maximum safety and productivity in the classroom
- Reduce absenteeism
- Delivering a simple to use solution in a short time frame
- Supplying easy to use equipment that is simple to set up and use
- Providing a solution which can be remotely managed
- Creating a solution which could be up and running in just 2 days

The Customer

East Renfrewshire Council (ERC) manages 47 schools throughout Scotland - including three of the country's top 10 performers.

Like many schools across the UK, its team sought a smart monitoring solution to ensure maximum safety and productivity in its classrooms.

With winter quickly approaching and COVID-19 transmission rates climbing, ERC needed to act quickly. They turned to the IoT experts at Alliot for the data-driven insights needed to confirm air quality levels across every ERC learning establishment.

Business Challenges

While the pandemic brings attention to the subject of ventilation within classrooms, poor airflow is by no means a new problem.

Research underlines the powerful relationship between air quality and learning outcomes. High CO2 levels associated with poor airflow, for example, increase the risk of drowsiness and headaches - reducing productivity and increasing absenteeism.

Conventional CO2 monitoring allows for providers to identify when and where spikes occur, however gathering and utilising this data can be time-consuming.

"Alliot has enabled our students to learn and breathe more easily."

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The Solution

Working in close partnership with ERC, Alliot developed a three-phase strategy, implemented over a three-week period which consisted of:

- Engineers digitising the floor plans for each school
- The installation of 2,500 wireless sensors across 47 schools
- The implementation of a custom simple to use dashboard to enable users to visualise the data

Smart planning like this ensures minimal disruptions once engineers arrive on site.

Alliot's partner, Novacene completed the install in just 7 days. Once live, ERC were able to get a true overview of air quality within its learning areas using the Elsys ERS CO2 sensor to gather data including CO2, temperature and humidity levels. Within just three days of installation, ERC managers were able to prioritise the specific schools and classrooms in need of immediate intervention.

Thanks to Novacene's intelligent platform within one week of the live data tracking launch, Alliot were able to compile reports on the overall portfolio of schools, as well as one for each individual school offering a detailed analysis of air quality in all learning areas.

OUR ONE WEEK PROCESS TO ENSURE SPEED & EFFICIENCY

Customer gets in touch

Within 12 hours

Call to discuss requirements with IoT expert.

Within 24 hours

Customer sends floor plans, location and desired insights.

Within 24 hours

Send digitised building with sensor locations for acceptance

Within 24 hours

Customer approves design, picks install data and agrees SLA.

Within 72 hours

Fast intallation times estimated between 4 and 8 hours.

Within 1 Week

Gather data, training and review immediate savings and improvements.

The Results

- Digital twins of 47 schools created within 14 days
- Installation of 2,500 smart sensors at 47 schools within 7 days
- Insights and actionable data as quickly as 3 days from install
- Detailed analysis of air quality in all learning areas within 1 week of live data tracking
- Meets/exceeds Department of Education Scotland statutory requirements for indoor air quality in schools (similar to UKBB101)

Looking Ahead

Novacene's sophisticated AI continues to allow ERC the opportunity - in real-time - to identify emerging patterns and trends within the air quality data gathered across all 47 schools. Ongoing work with ERC's experts ensures efficient identification of ways to boost airflow.

Recognising the relationship between CO2 and energy use, the Alliot Team continue to work with ERC's energy specialists to provide them with a better understanding of implementing and creating the solutions necessary to reduce their carbon footprint.