

Case Study



The Loreto College Foxrock improves classroom safety and comfort with IoT-enabled indoor air quality (IAQ) monitoring solution enabled by Connected Inventions

The Challenge

Loreto College Foxrock needed a simple and effective solution to continuously monitor indoor air quality to ensure the comfort, safety, and productivity of students and staff across its campus

The Solution

Loreto College chose solution provider ZiggyAir to deploy an IoT-enabled indoor air quality monitoring solution. The solution connects IoT devices to a dashboard which displays a "traffic light" system to indicate when increased classroom ventilation is necessary.

The Results

Since deploying the solution, the college has easy, instant access to the data it needs to proactively optimize the indoor air environment for students and staff fostering:

- Improved wellness
- Reduced absenteeism
- Increased productivity and learning

Solution Partner



ZiggyAir is a leading provider of indoor air quality and energy monitoring solutions.

www.ziggytec.com

Customer



Loreto College Foxrock is an independent Catholic secondary school for girls in Dublin, Ireland, run by the sisters of the Institute of the Blessed Virgin Mary.

loretofoxrock.ie

The Loreto College Foxrock takes control and improves classroom safety and comfort with IoT-enabled indoor air quality monitoring solution

Loreto College Foxrock proudly provides 560 students with expert guidance from staff and full access to extensive academic, creative, musical, and sporting facilities. A valued part of the College's ethos is promoting student well-being, pastoral care, and developing each girl's unique gifts and talents in classroom environments.

The impact of Indoor Air Quality on learning environments

Monitoring indoor air quality in educational facilities significantly enhances cognitive performance by optimizing CO2 levels in classrooms, ensuring maximum comfort campus-wide with appropriate temperature and humidity, and providing crucial health and safety assurance by tracking CO2 content, humidity, and temperature, which are key indicators for virus transmission speed.

Remote monitoring and centralized reporting enabled by the IoT

Loreto College required an indoor air quality monitoring solution that was fast and easy to deploy, maintenance free, and capable of operating independently of the campus' IT and building management systems. Another key requirement was for the solution to send real-time alerts of air quality issues for corrective action.



The Loreto College team chose ZiggyAir to deploy an IoT-enabled solution to monitor the indoor air quality of all classrooms remotely.

The solution uses Connected Finland's AirWits IoT devices, with sensors constantly monitoring the ambient air quality against set parameters.

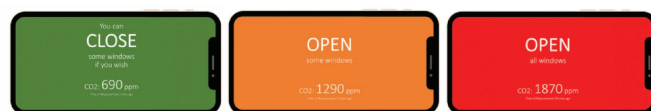
The devices are configurable to remotely monitor carbon dioxide (CO2) levels, humidity, temperature, and particles. High levels of CO2 indicate a requirement to improve ventilation for greater safety and cognitive performance.

Long-life batteries power the IoT devices, which means they can be easily placed in any indoor environment of the College campus without requiring access to power supply. The entire solution is secure and runs independently from the College's local IT infrastructure.

Data captured by each device is shared in near real-time to a cloud-based data management platform via the 0G Network, powered by Sigfox technology. The 0G Network is the public, low-cost LPWAN (low-power wide-area network). ZiggyAir's centralised data platform gives the College instant access to indoor air quality data via a web browser, the classroom device, or text message to the Building Manager.

Each classroom-based device features a "traffic light" system to indicate ideal ventilation requirements.

- Green guides that air quality is good, and ventilation is not immediately required.
- Orange shows CO2 levels are rising, and some ventilation is necessary.
- Red signals ventilation is immediately needed to improve air quality.



When CO2 measurements reach unacceptable levels, the ZiggyAir solution alerts the classroom-based device to flash a red warning light and also sends a message to staff. Students familiar with "traffic lights" in their daily routine open windows whenever the display changes colour.

The Loreto College Foxrock takes control and improves classroom safety and comfort with IoT-enabled indoor air quality monitoring solution



At Loreto College, we aim to build independence of mind, and we regard the classroom as a vital resource in that process. ZiggyAir monitors provide pupils, staff, and parents with the reassurance they need to commit fully to classroom learning. Thanks to ZiggyTec's traffic light' system, we can now extend responsibility for air quality to our students.

Joanne Brook, COVID Safety Officer, Loreto College Foxrock

The benefits of indoor air quality monitoring for Loreto College teachers and students

Since deploying ZiggyAir to monitor the indoor air quality of its classrooms, Loreto College has improved the safety and comfort of its campus environment for students and teachers. Benefits include:

- improved wellness
- reduced absenteeism
- increased productivity and learning



We all learned at school that people breathe in oxygen and breathe out carbon dioxide or CO2. Research shows higher transmission of COVID-19 in environments with high levels of CO2. Our indoor air quality monitoring solution has a smart tablet with a digital display that makes it easy for teachers and students to understand when to open or close windows. We encourage schools to measure, monitor, and mitigate CO2 risks to help make classrooms safer.

Kieran Murphy, Director and co-Founder, ZiggyTec



We are excited about the results our partner ZiggyTec achieves for Loreto College and many more commercial facilities. Our technology provides the devices to collect and manage the environmental data that enables these outcomes for modern facilities management. These results are repeatable and scalable. Enabling our partners to run more sustainable and healthy buildings is what we are passionate about.

Markku Patronen, Founder, Connected Inventions



About Connected Inventions:

We provide cost and energy efficient IoT solutions that enable data-driven operations, allowing building owners and managers to reduce energy consumption, lower carbon-emission and transform their buildings into sustainable, healthier and more resilient assets. Our secure IoT solutions encompass our devices, data management platforms and connectivity services that help facility managers simplify the deployment of maintenance free solutions. ConnectedInventions.com