

Case Study

Portable Real-Time Monitoring System Used in MailOnline Study of London Indoor Air

A highly respected UK-based ventilation services provider partnered with the world's most widely read newspaper website to produce a study of indoor air quality throughout Central London.



Project

MailOnline Indoor Air Quality Study

Services

Aeroqual Series 500 Portable Air Quality Monitor

Location

London, United Kingdom

Measurements

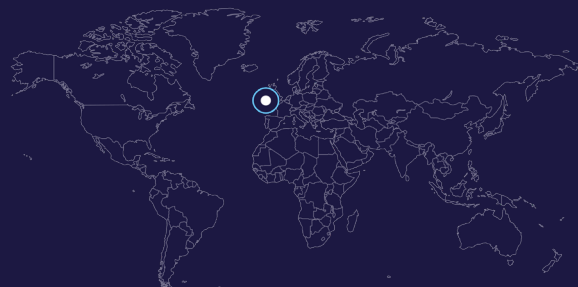
PM₁₀, PM_{2.5}, CO₂, VOCs

Date

2022

Sector

Indoor Air Quality



Portable real-time monitoring system used in MailOnline study of London indoor air

A highly respected UK-based ventilation services provider partnered with the world's most widely read newspaper website to produce a study of indoor air quality throughout Central London ahead of Clean Air Day 2022. Real-time handheld air monitoring technology enabled a reporter to easily record accurate air quality data, measuring CO₂ levels, particulate matter (PM_{2.5}, PM₁₀), and Volatile Organic Compounds (VOCs) across a series of popular locations. The resulting data showed air pollution levels well above recommended limits, with contamination in some indoor locations up to five times higher than outdoor levels.

Improving indoor air quality by building global awareness

Nuaire is a pioneering air technology provider specializing in the design and manufacture of fans and ventilation systems. Driven by a desire to “radically improve the quality of people’s lives by delivering clean air everywhere”, Nuaire partnered with the MailOnline to conduct a study that would help raise awareness around the importance of indoor air quality in the lead-up to Clean Air Day 2022.

Shivali Best, a MailOnline reporter, was tasked with measuring air quality across five popular indoor locations around Central London, along with one outdoor area for comparison. To complete this study, the technology needed to be easy to use, highly portable, and capable of delivering accurate measurements of key pollutants in real-time. For these reasons, Nuaire, with equipment and training provided by Farmwood M&E Services Ltd, selected the Aeroqual Series 500 Portable Air Quality Monitor (S500). Combining swappable sensor head technology, long-life battery, and an ultra-portable design, the S500 allowed Ms. Best to travel freely between locations, measuring a variety of pollutants and publishing the results to the MailOnline’s monthly readership of 191 million site visitors – showcasing the importance of indoor air quality to a global audience.



Indoor air pollution found to be worse than the London Underground

The indoor locations measured as part of this study were the London Underground (Piccadilly Line), MailOnline offices, Sainsbury’s, Wetherspoons, and McDonald’s. Ms. Best also measured pollution levels around Piccadilly Circus, comparing indoor air quality results with pollution found in outdoor air. The results highlighted McDonald’s and Wetherspoons in particular as recording worryingly high levels of CO₂, PM, and VOCs.

“Alarmingly, McDonald’s and Wetherspoons - both popular social eateries - have air quality readings similar to the London Underground tube carriage,” stated Nuaire Board Director, Stuart Smith.

In fact, while CO₂ levels on the London Underground came close to the recommended healthy limit of 1000ppm (coming in at 835ppm), both McDonald’s and Wetherspoons recorded measurements well above this mark. VOC levels were also leagues above the recommended limit (0.5-0.75ppm), with McDonald’s recording a reading of 58.4ppm, and Wetherspoons a staggering 99.5ppm – more than seven times higher than the outdoor reading at Piccadilly Circus. “The worst places the MailOnline recorded were public spaces where you would naturally assume ventilation would be taken care of and at its best”, elaborated Mr. Smith.

This data was combined with wind roses to prove the low impact the site had on dust creation in the community. While results were more encouraging at Sainsbury's and the MailOnline offices, with both recording CO₂ and PM levels within healthy limits, VOCs were still much higher than the ideal range provided by air quality professionals. The lowest levels of all recorded pollutants were found at Piccadilly Circus, with Mr. Smith noting that pollution levels at the only outdoor location "fell slightly but are still high when compared to recommended VOC levels". The fact that Piccadilly Circus, a busy traffic interchange and popular tourist destination, recorded lower levels of pollution than all indoor locations measured serves to highlight the importance of taking action to improve indoor air quality.

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Stuart Smith
Nuaire

Using real-time monitoring to create healthier indoor environments

Effective ventilation is critical to maintaining a healthy environment in which to live, work and play (a key part of the work done by industrial hygienists and other air quality professionals). From opening windows as often as the weather allows, to the use of extractor fans and home ventilation systems, regular airflow will help prevent dust build-up and alleviate CO₂, VOCs, and other indoor pollutants. If left unchecked, high levels of CO₂ can cause drowsiness, headaches, and nausea, negatively impacting productivity and learning outcomes. Even relatively low levels of particulate matter "can be inhaled and transported around the body and get embedded into organs, causing a range of poor health outcomes including heart failure", added Nuaire's Stuart Smith.

In addition to proper ventilation, accurate, accessible air quality monitoring is an excellent line of defense against indoor air pollution. Handheld monitoring systems like the S500 or Aeroqual Ranger (known as "the ultimate connected handheld solution") produce highly credible data on a range of relevant pollutants in real-time. The success of this study is a testament to the useability and reliable performance of Aeroqual handheld devices – doing our part to keep people safe from the dangers of poor-quality air.



About



Nuaire

Nuaire is a UK-based ventilation solutions provider established in 1966, specializing in designing and manufacturing products for the domestic, commercial, and industrial construction sectors. Their state-of-the-art facilities operate with minimal impact on the environment, driven by ambitious targets to drive forward green manufacturing practices.

Aeroqual



Aeroqual develops integrated monitoring and software systems underpinned by industry-leading sensor technology to support environmental, health, and safety professionals in protecting people and the planet from the impact of air pollution. That's why governments, industry, researchers, and consultants trust Aeroqual to deliver actionable data for their air quality monitoring projects.