



Specialists in Cleanroom Validation, Commissioning & Compliance,
HVAC systems, Indoor Air Quality & Building Wellness.

Bunscoil Rinn an Cabhlaigh Ventilation and Indoor Air Quality Monitoring

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1. visited classrooms to assess ventilation and brief comment on current practice of windows / doors / external doors all open etc

- Bunscoil Rinn an Cabhlaigh currently uses natural ventilation (open doors and windows) to provide fresh air to its classrooms.
- There is good practice in place as windows, internal and external doors were all open however the need to have everything open may not be required and only by continuous monitoring can this be ascertained

2. Whether current measures are effective in your opinion

- Certainly, the measures in place will allow large amounts of fresh air through the building and it is likely that the fresh air is very much diluting the CO₂ levels. This however will have a negative effective on energy usage and potentially occupant comfort. The balance between good Indoor Air Quality via natural ventilation, energy usage and occupant comfort is always a difficult challenge for any building.

3. The recommendation to get the *View* monitors and what they do

- View CO₂ for Business: Accredited Wireless Monitors (this means the monitor can be put in the correct location within a room not just where there is a socket)
- The View CO₂ monitors CO₂, temperature, humidity, light, noise, occupancy and can calculate virus risk (this is continuously monitored and recorded)
- User-friendly private dashboard to view the data e.g. laptop, phone etc.
- You can setup a Public Dashboard display e.g. put on a information screen
- There are full Indoor Air Quality reporting functions, Virus Risk reports, Indoor Air Quality reports and Certificate functions, potential energy saving reports that can be easily generated and printed
- Secure Cloud Network independent of building Wi-Fi/networks
- Local programmable traffic light indicator and QR code
- Full online support and training

4. Your opinion on whether we need HEPA filters at this point

- No HEPA filters are not needed at this time and probably unlikely to be required as per the Department of Education, CIBSE, RHEVA and WHO guidance
- HEPA Filters as per the Department of Education guidance are not a permanent solution and should only be selected to bridge the ventilation gap in the short terms until a permanent ventilation solutions is put in place.



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Install Eirdata Indoor Air Quality Monitoring system to improve:

Energy efficiency: Monitoring takes the guesswork out of ventilation, so you only use energy when you need to. E.g., windows may not be required to be open fully thus reducing heating costs.

Health: Healthy air lowers the survival rate of viruses and reduces sick leave by 58%. Poor air quality and radon levels can lead to health problems including cancer.

Productivity: Good air quality can result in a 61% improvement in cognitive tasks, and classrooms often have the worst air quality in the building.

Monitoring is key to understanding whether short term measures such as HEPA filters would be beneficial to the school. Data based decisions will ensure the “best bang for the schools buck”, so installing a robust monitoring system is key not just for the current pandemic but for the school’s future Indoor Air Quality needs.

Children’s lungs are still developing, so they’re particularly vulnerable to indoor air pollution. We should protect them by monitoring indoor air quality in the classroom, where kids spend such a significant part of their day.

Indoor air pollution damages our health and impacts how effectively we work and learn. Businesses, Schools and consumers are starting to recognize the importance of monitoring indoor air quality, but in schools, where children typically spend six or more hours a day in the classroom, this is vitally important.

Why indoor air matters

Indoor air quality is defined by the US Environmental Protection Agency (EPA) as “the quality of air in a home, school, office, or other building environment”. It estimates that concentrations of key pollutants are up to five times higher indoors than outdoors.

According to the WHO, indoor air pollution is responsible for 2.7% of the burden of global disease annually. The State of Global Air survey estimates that ambient and household air pollutants cut 2 years and 6 months from the average person’s life expectancy.

Indoor air quality has a huge impact on long-term health, but it also affects how well we feel and perform, in the shorter term. The Harvard Annual review of Public Health argues improvements to indoor environments have saved the US economy between \$25 billion to \$150 billion, thanks to increased productivity from workers.

Children learn and function better when they’re breathing cleaner air. A study co-authored by Harvard T.H. Chan School of Public Health found that improved indoor environmental quality boosted cognitive scores by up to 101%. And there are plenty of other reasons why you should monitor indoor air quality.

10 good reasons to monitor indoor air in schools

1) Indoor air quality data helps with budgeting

There can be a trade-off between ventilating a building properly and energy costs. Indoor air quality sensors provide information that helps you use ventilation more efficiently. There's no point pumping cool air into a room that nobody's using. Equally, monitors help with better planning, so that air quality systems are deployed in rooms with greater capacity at peak times.

2) Protect the health of children and staff

We've seen already that the quality of indoor air has long term health implications. Industry leading radon and monitors can measure levels of radon – a colourless, odourless radioactive gas that is the second biggest cause of lung cancer after smoking. They detect VOCs that can be emitted from modern cleaning products, paints, solvents, and furniture, which can cause headaches and irritate the eyes, nose and throat.

3) Boost cognitive performance for students and teachers

The air we breathe profoundly affects our ability to work and learn. Research shows that workers' cognitive scores can double in a cleaner, better ventilated indoor environment. In schools, studies have found "compelling evidence of an association of increased student performance with increased ventilation rates." Scientists have also recently discovered that levels of carbon dioxide in classrooms may have harmful effects on the body, including clouding students' thinking. Indoor air quality monitors provide important information that highlights where ventilation is needed.

4) Gain insights with the right data

An effective indoor air quality solution will give you access to information, real-time and historical, in a user-friendly format that allows you to turn it into action. An online dashboard enables you to view, customize and analyse your data. The software will interpret key measurements and offer tips on reducing indoor air hazards, optimizing ventilation, and saving energy.

5) Evidence from reports

As budgets are required to stretch further, building owners and managers can be under greater pressure to provide evidence to back up and demonstrate any changes that will offer a return on investment. Indoor air quality monitors mean that you have the data to show where and when improvements are needed. If the sensors highlight problems, the clear links between student performance and air quality form a powerful reason to put them right.

6) Enhance your school's reputation

The best students and staff want to work in a clean, pleasant environment and they're attracted by improvements in performance. The Harvard Annual Review of Public Health shows that poor indoor air quality is associated, not only with lower productivity from building users, but also with higher rates of absenteeism. Better performing students and a cleaner, greener environment means a better reputation for the school.



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7) Keep up with changing regulations

As awareness of the importance of indoor air quality grows, there's every chance that laws and regulations will develop to keep pace with scientific evidence. Indoor air quality monitoring helps your school future-proof against changing compliance requirements. Good quality indoor air can be used toward achieving the WELL Building Standard, a global benchmark that recognizes comfort and healthiness in building standards.

8) Improve comfort in your building

In addition to detecting pollutants, an indoor air quality monitor can measure air conditions like humidity, temperature, and pressure, that determine how we feel and perform. To take one example, a study led by Harvard researcher, Joshua Goodman, revealed that higher air temperatures during the school year caused lower grades in the PSAT, that tests students' abilities in reading and math. Children, teachers, and other staff will appreciate a more comfortable environment, as they go about their day. Improvements are also likely to help them think more clearly and work more effectively.

9) Modern monitors are easy to install

Eirdata Airthings for Business monitors don't require a lengthy, disruptive installation process. The best modern sensors are battery operated and wireless. They won't take up valuable power outlets and data can be monitored remotely. The devices can be mounted on walls or ceilings, so they're up and running in no time. The process is particularly painless when you're revamping or extending your current rooms.

10) Integration with current systems

Advanced code called APIs allow monitors to work in harmony with existing IT equipment and other supported devices, like HVAC systems. The data is securely uploaded to the cloud, so that it can be analysed anywhere and anytime.

Key takeaways:

Children's bodies and lungs are still developing, so IAQ monitoring in schools is essential to make sure students, staff, and teachers have an environment that keeps them safe and helps them excel.

Indoor air has a huge impact on long-term health, but it also affects how well we feel and perform, in the shorter term. Children learn and function better when they're breathing cleaner air.

By monitoring indoor air, you can implement improvements that reduce the concentration of harmful pollutants.

Monitors can improve energy efficiency, by giving you information that enables you to use ventilation only where and when you need it.

Modern monitors such are quick and easy to install, and they integrate seamlessly with existing tech.