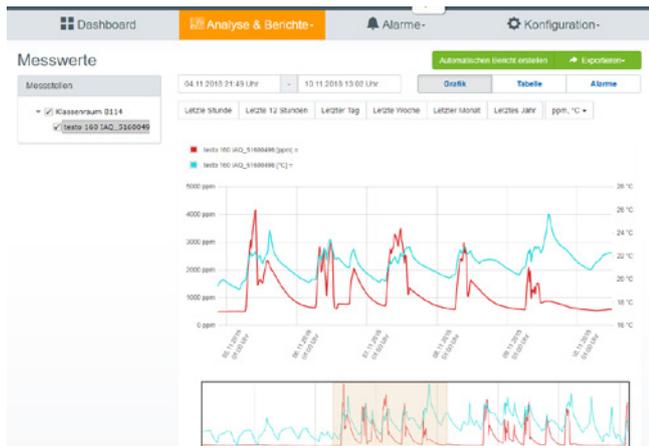


Detecting elevated CO₂ concentrations in the classroom using the **testo 160 IAQ WLAN data logger.**



The FTS College for Precision Technology in Villingen-Schwenningen in the Black Forest was founded in 1900 as the “Royal Württemberg College of Precision Engineering, Electromechanics and Watchmaking”. In the 1960s the college was expanded to include more courses of study, and this included the Technical Grammar School.

Today, a total of 600 students are enrolled in all subjects, 200 of them in the Technical Grammar School. The school complex includes 4 buildings: the oldest is over 100 years old, two of them date back to the 60s and the most recent one was built in 2008.



Detecting the cyclical increase in CO₂ concentrations.



The testo 160 IAQ WLAN data logger in use.

The challenge:

The older buildings at the FTS College for Precision Technology in particular are poorly insulated (sandstone buildings). They also contain the odd faulty window, which makes regular ventilation of the classrooms impossible.

The oldest building at the Technical Grammar School – over 100 years old – houses 16 classrooms. In some lessons, there are up to 30 students plus the teacher in one classroom. Particularly when you have larger groups of students in the classroom, this regularly results in a rapid increase in CO₂ concentrations in the indoor air.

According to Mr. Fehrenbacher, Head of Department at the Technical Grammar School, the CO₂ levels go through the roof after just one 30-minute lesson.

After a measurement phase of several months using the testo 160 IAQ WLAN data logger, it became apparent that the CO₂ levels in the classroom increased to more than 4,000 ppm on some days.

The solution:

Since the testo 160 IAQ WLAN data logger has been used at the FTS College for Precision Technology, a quick response (e.g. by means of ventilation) to excessively high CO₂ levels in the classroom can be guaranteed. In the event of limit value violations, the Saveris 2 Cloud automatically triggers an alert via SMS and/or e-mail. The data logger's LED traffic light function also facilitates user-friendly presentation of CO₂ limit value violations.

“Ever since the testo 160 IAQ data logger and the testo Saveris 2 Cloud showed me the elevated CO₂ concentrations, there has been a new level of awareness in the classroom. I try to actively ventilate every 45 minutes. At the same time, I make my colleagues aware that they need to watch out for poor air quality in the classroom and to open the windows regularly. So far, there is no recommendation for action within the school, but the first synergy effects are already visible,” said Mr Fehrenbacher. Often, annual budgets for maintenance, etc. are tight and there is a need for prioritization in order to establish which repairs are undertaken first.

The urgency of remedying certain defects in the building (e.g. broken windows) can be better demonstrated by evaluating the data in the cloud at the school board, Mr Fehrenbacher added.

Another advantage of the testo 160 IAQ WLAN data logger is the flexibility of the system. Via several access points in the school building, the data logger can be quickly mounted on the wall in any classroom and monitor the air in the room from there.



Marc Fehrenbacher
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