

Indoor air quality measuring for tastier food

A restaurant in New Zealand has placed a [NB-IoT](#) enabled [Libelium Plug & Sense! Smart Environment](#) device in their kitchen allowing indoor air quality monitoring. So they can prevent smoke and fire leaks that could affect both the premises and the rest of the building.

Benjamin ‘Ben’ Bayly is one of the best New Zealand chefs. Indeed, his multiple awards give a good example of this. In addition, Ben has participated in some TV shows in New Zealand, such as “Master Chef” and “My Kitchen Rules”.



In his [restaurant Ahi](#), Ben delivers a complete, pure New Zealand gastronomic experience. Ahi literally translates from māori to mean fire. This is why the chef wants to have the fire in his kitchen under control.

Since Ben wants to have the authentic smells and flavours of natural wood smoke and charcoal, every dish pushes the limits of the extraction systems.

NB-IoT and environment sensors enable indoor air monitoring

Assisted by [Adroit](#), the distributor of Libelium’s technology in NZ, the Ahi restaurant was equipped with Plug & Sense! Smart Environment sensors. Data is reported via NB-IoT minute-by-minute indoor air quality, so the team can track their performance.

“We worked with Air Matters consultancy to select the correct sensors for the air pollutants found inside of the building, including nitrogen dioxide, carbon monoxide, carbon dioxide, and particle matter, plus a few other ones as well,” says Ulrich Frerk, Founder & Technical Director of Adroit.



Air quality measurement is not something new, however, internet-connected air quality measuring is. In this case, the entire system is connected to an app for remote monitoring. Alerts can also be set up on the system to notify Ben and his team to any sudden change in the inner atmosphere. Notifications on the platform can be set to different parameters of air quality sensors. So, for example, they can set an alert that notifies when the particle matter gets to 50 microns per cubic meter ($\mu\text{g}/\text{m}^3$). Standards marks 50 $\mu\text{g}/\text{m}^3$ as the limit for PM10 concentrations. Exposure above these values puts human health at risk.

Better taste in a cleaner environment

The staff are delighted to see that, despite the huge grill, the ventilation inside is extremely effective. “We see a spike in the data when we light the fire. When we see that happen, we just make sure that all our windows and doors are shut to allow the extraction to work at its peak, and we can see it drop back to normal,” Ben says.



Now, when the air quality performance goes down, Ahi staff knows that they must clean the extractor filters or there is an uncontrolled opening.

As Ben can see the air quality in his premises up to the minute, he has several very notable benefits:

- Greater control of the efficacy of the extraction hood and the hermetic nature of the kitchen. Early detection of a drop in air quality performance enables timely improvements and significant savings in money.
- Improved health care and worker productivity. When the CO2 level, or any other type of pollutant, is too high can cause drowsiness and sleepiness in staff, as well as other serious health effects.
- Food tastes better! Thirdly, many studies talk about the importance of a restaurant having clean air because it can affect people's taste buds.

“So having clean, healthy air should be a part of good business practice for restaurant owners, as well as eating great food and drinking good wine, obviously,” concludes Ben Bayly.

Indoor air quality monitoring



THE CHALLENGE

Know minute by minute the indoor quality of the air in a restaurant where fire is the protagonist.

THE SOLUTION

1 Libelium Plug & Sense! Smart Environment with NB-IoT connectivity to share quickly the parameter data with owner and staff.



Auckland, News Zealand



Smart Environment, Air Quality Index



Plug&sense! Smart Environment



NB-IoT

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Benjamin Bayly
Chef and owner of Ahi restaurant

More information:

- For technical details on Plug & Sense! Smart Environment: [Plug&Sense! Smart Environment PRO Technical Guide](#)
- NB-IoT Networking Guide: libelium.com
- Read more about Libelium sensor product lines in the [Waspote](#), [Waspote Plug & Sense! Sensor Platform](#) and [Meshlium Gateway](#) websites.

Other Smart Environment Success Stories:

- Preventing asthma attacks in children with a sensor network that monitors air quality conditions in play areas: libelium.com
- Athens International Airport trusts EXM and Libelium's IoT platform to enhance environmental monitoring: libelium.com
- Smart City project in Ljubljana Shopping and Business Centre to follow its Green Mission strategy: libelium.com
- Smart Airport project: monitoring environmental conditions in Santiago de Chile airport: libelium.com
- The city of Tilburg (NL) becomes smart and sustainable teaming with Libelium and Ericsson to develop an IoT environmental control platform: libelium.com

Discover the kit at The IoT Marketplace: [Air Quality kits](#).

More case studies at: <http://www.libelium.com/resources/case-studies>

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