



Case Study

Trinity College Dublin



Overview

EarthSense have worked with Trinity College Dublin to deploy a Zephyr® air quality sensor on their campus in the city centre. Funded by the Department of Civil, Structural and Environmental Engineering at Trinity College Dublin, the sensor has provided real time, localised insight into air quality.

Data is publicly available as part of an ongoing initiative to ensure air pollution information and health related impacts are widely shared with members of the public.

The Challenge

Public awareness of air pollution, particulates and gases and the impacts they have on people's health is something that is not widely understood.

EarthSense have worked with Trinity College Dublin to measure air quality using Zephyr® air quality sensors and provide data in real-time to inform and educate members of the public to encourage ways to improve local air pollution levels.

The Solution

After communicating with professors at Trinity College Dublin, it was decided that broadening knowledge on air pollution and providing insight into local air quality would be an effective first step in the strategy to improve air quality. By educating students and lecturers at the University about the health impacts of the harmful gases and particulates around them, EarthSense and project manager; John Gallagher, Assistant Professor in Environmental Systems Modelling wanted to encourage them to make behavioural changes to better air quality on the Dublin campus.

EarthSense worked with the University to deploy a Zephyr® sensor at their campus in the city centre. Doing this meant they were provided with real-time, localised measurements taken by the sensor for pollutants including nitrogen dioxide (NO₂), nitrous oxide (NO), particulate matter PM_{2.5} and PM₁₀. Air quality data measured by the sensor was then displayed via an easy to understand website hosted by the Department of Civil, Structural & Environmental Engineering at the University.

Displaying deployed sensor data through a website provided university staff, students and those visiting the University with information on the state of air quality and health related impacts. This type of information encouraged the general public to make changes in their usual routine, such as cycling or walking to the campus.

instead of using transport that emits pollutants into the atmosphere. Having access to the website also meant they were able to see how their changed behaviours had a positive impact on air quality and consequently, their health.

Outcomes

Since the deployment of the Zephyr® at Trinity College Dublin, the sensor has captured the state of localised air quality to educate and inform those attending and visiting the University about how it could be impacting them.

The sensor has also been successful in providing masters students taking modules about air pollution with data to be used in their measurement analysis and modelling coursework.

Trinity College Dublin also uses Zephyr® data to understand nearby pollution sources to quantify the impacts on campus. Using this information allows them to work towards current sustainability plans for air quality and improve the pollutant concentrations in the area.

Quotes

Dr. John Gallagher, Assistant Professor in Environmental Systems Modelling at Trinity College Dublin said "The Zephyr® has proven to be a useful tool for collecting real-time air pollution data. We have the ability to measure multiple pollutants simultaneously in one compact and mobile device. The Zephyr® data has allowed us to gain insight into trends and has helped us understand air quality on our University campus."

The Future

Trinity College Dublin plan to use air quality data gathered by the Zephyr® sensor to inform the green status of the University as vehicles parking on campus transition to zero-emission vehicles.

Get in Touch

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