



Case Study

Evergen Systems



Overview

Fighting for Air was a BBC television programme which oversaw EarthSense, presenter Dr. Xand Van Tulleken and community action group, Kings Heath CAN to trial, test and evaluate the effectiveness of behavioural change for one day to improve air pollution in Kings Heath High, Birmingham.

Through deployment of Zephyr® air quality sensors in key hotspot areas, NO₂ concentrations were measured prior to, during and after the launch of the trial to identify whether adapting different behaviours impacts air quality. The project was documented and broadcasted on BBC2 in January 2018 and August 2019.

The Challenge

In Kings Heath, the high street experiences high levels of pollution due to a large number of vehicles such as cars and buses passing through on a daily basis and idling in nearby parking bays. The opportunity to hold a one-day behavioural change experiment to reduce air pollution was presented to EarthSense and following discussions with producers at the BBC, EarthSense were approached on how to help uncover results for the television programme. Using static Zephyr® sensors to measure air quality in Kings Heath and at St. Dunstan's School allowed us to identify air quality in the area before and post intervention.

The Solution

EarthSense worked with the BBC, Kings Heath CAN and teachers at St. Dunstan's School in King's Heath to understand the problem with congestion and pollution hotspots in the area. EarthSense advised that static Zephyr® air quality sensors would be the most appropriate tool to provide real-time insight into pollution hotspots. This enabled Kings Heath CAN to understand the current state of air quality and implement new ideas to drive behavioural change in the community.

Static Zephyr® sensors would measure air pollution during and after the trials to see whether a change in behaviour made a reduction on air pollution. Before implementing the trial, Zephyr® sensors were mounted on lampposts around suspected problematic areas of Kings Heath High Street and outside St. Dunstan's School to measure NO₂ levels under usual circumstances. Dr. Xand Van Tulleken and Kings Heath CAN then worked alongside the local council and bus companies to enforce a car free zone and free public transport for one day.

Further actions were taken by people living in Kings Heath and St. Dunstan's School enforced a walking to school bus for pupils and encouraged parents to leave their cars at home and to take eco-friendly modes of transport, such as cycling or walking. Kings Heath CAN worked to install hedges along the high street to shield people

from pollutants and encouraged the community to engage with the trial.

Zephyr® air quality sensors continued to measure the air quality throughout the trial and EarthSense Technical Director, Dr. Roland Leigh was on hand to provide the community action group with NO2 data to identify the impact of the project on surrounding air pollution.

Outcomes

Following the trial and comparison of prior NO2 measurements, the results of the project were in. Zephyr® sensors identified a 20% reduction in NO2 concentrations at St. Dunstan's School and a further 10% reduction of NO2 concentrations along Kings Heath High Street, indicating that the various pollution-lowering initiatives were effective in improving air quality.

After comparing Zephyr® measurements against the government's Department for Environment, Food and Rural Affairs (DEFRA) Automatic Urban and Rural Network (AURN) air quality network standard values at background and roadside locations in Birmingham, a conclusion was made. Kings Heath CAN, Dr. Xan Van Tulleken and EarthSense were able to evidence that behavioural change can have an impact on air quality if implemented, which may be significantly more if carried out on a wider scale.

Fighting For Air proved a successful case study for EarthSense and the community of Kings Heath. EarthSense were contacted by a number of concerned businesses, local councils and schools who wanted to lower air pollution in their own neighbourhood, some of which have since established into exciting new partnerships.

Get in Touch

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