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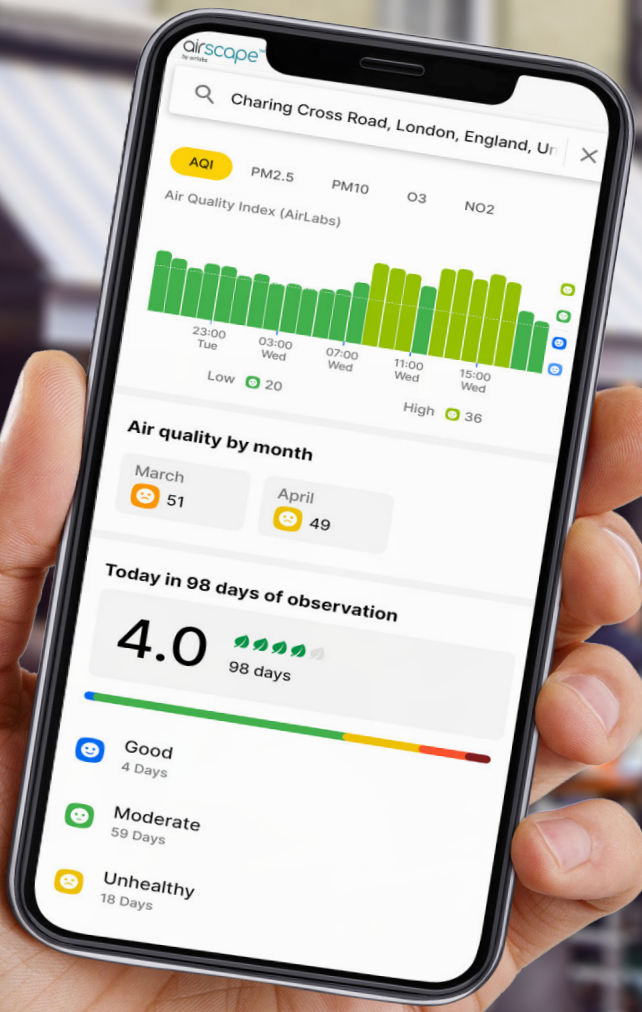
For the first time ever, street-level air quality data in real time

Sponsor your city and make a difference to your community



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A radical new approach for tackling urban air pollution

Making air pollution visible at street level.

Air quality is too important to ignore

The list of diseases linked to air pollution is growing all the time. Lung and heart disease, diabetes, obesity, Parkinson's, dementia and mental illness[1] – it affects every cell in the body. There is also evidence that air pollution harms unborn children during pregnancy[2].

Air pollution reduces attention span and focus, affecting workplace productivity and traffic safety. And recent scientific studies show that long term exposure to air pollution significantly increases the odds of dying from Covid-19.

The "State of the Air" 2022 report finds that despite decades of progress on cleaning up sources of air pollution, more than 40% of Americans—over 137 million people—are living in places with failing grades for unhealthy levels of particle pollution or ozone.[3] We not only have a climate emergency, we also have an air pollution emergency.

A hyper-local problem needs high-definition visibility

The problem with air pollution is that current information about air quality is vague at best or simply unavailable.

Today's air quality monitoring stations are many kilometres apart. They're unable to provide the full picture, when field research shows that air quality is hyper-local. It can vary from one side of the street to the other. So, unless you live next door to a monitoring station, it's anyone's guess what the air pollution level at your location is. In addition, existing monitoring stations tend only to provide hourly data instead of the minute-by-minute information needed to make important decisions about travel, exercise and recreation.

Without hyper-local visibility and insight how can you make effective decisions?

What if that information was available street by street, where you commute, work or that lovely coffee shop where you enjoy the alfresco terrace?

For many years scientists have tried to compute what the local air pollution level is based on far away monitoring station readings. These computer models have some validity for background air pollution levels or annual averages. But they can't give you a real-time, detailed picture of air pollution on your street, in your shopping area, or at your children's school. They also lack the 'smart' features that we now expect from mobile apps. For example, notifications when air pollution exceeds safe levels in your immediate surroundings.

The latest ultra-high definition TV screens have more than 8 million pixels. If high resolution is important for our entertainment, what about our health, the well-being of our children, our employees, our community?

The reality is that, at this moment, we only see air quality information in ultra-low definition. The US has about 4000 air quality monitoring platforms, which produce one data point per 2.5k sq kilometers on average[4].

1 (2018, November 9). Air Pollution and Noncommunicable Diseases - CHEST. June 10, 2021, from https://journal.chestnet.org/article/S0012-3692(18)32723-5/fulltext
2 (n.d.). Ambient air pollution and low birthweight: a ... - ScienceDirect.com. June 10, 2021, from https://www.sciencedirect.com/science/article/abs/pii/S2213260013701929
3 https://www.lung.org/getmedia/74b3d3d3-88d1-4335-95d8-c4e47d0282c1/sota-2022.pdf - American Lung Association
4. https://www.epa.gov/outdoor-air-quality-data/air-data-basic-information#:~:text=Monitoring%20Data%20%2D%20Ambient%20(outdoor),mainly%20by%20state%20environmental%20agencies.

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Why depend on models if you can have the real measurements?

Now compare this with AirScape™, AirLabs' ground-breaking system that provides air quality information in high definition. With AirScape the average distance between two sensors is 250 metres. That's 13 data points per km^2. And instead of one measurement per hour, AirScape does a measurement every minute.

What does that mean in terms of air pollution data? In London, AirScape has **180X** more sensor locations per km^2 than is the case with reference monitoring stations. And AirScape has a **60X** higher data refreshment rate. The combined effect is **10,000X more data points per hour.** The best in the world.

This is the equivalent of a leap from black-and-white photos to full colour high definition video.

How does it work?

The AirScape system consists of state-of-the-art, science-grade air quality sensor devices called AirNodes™. These AirNodes have been developed in our Research Lab in Copenhagen and are designed to meet the stringent requirements of the CEN /TC 264 "Air Quality Measurement" standard[7]. Supported with advanced remote calibration, the accuracy of the measurements made by each AirNode are ensured to meet this CEN standard.

The AirScape platform gathers data from the AirNodes and provides a high-resolution, real-time picture of air quality at local level, not just isolated snapshots. This hyper-local air quality information can then be used and accessed in multiple ways including:

- The publicly available detailed air quality maps can be accessed by anyone with access to a computer or smartphone.
- The system can be configured to send alerts when air pollution reaches unsafe levels
  - Essential information for anyone suffering from respiratory diseases and for the general well-being of everyone in the community.
- The data intelligence collected by the system can provide medical centres, schools, community groups or local authorities with information to protect the most vulnerable and make effective decisions on how to improve air quality.

It's all about outcomes

The purpose of AirScape is to give everyone in the community the information they need to make informed decisions and influence change. Actionable data to improve air quality and protect their health and well-being. The AirScape system gives a bird's eye view of how air quality varies street to street, minute to minute. This level of insight is unprecedented anywhere else in the world. Such insights allow individuals and businesses to take decisions including:

Choice of transport: public, bike, on foot

Advising employees when to work from home

What routes to take on your daily commute

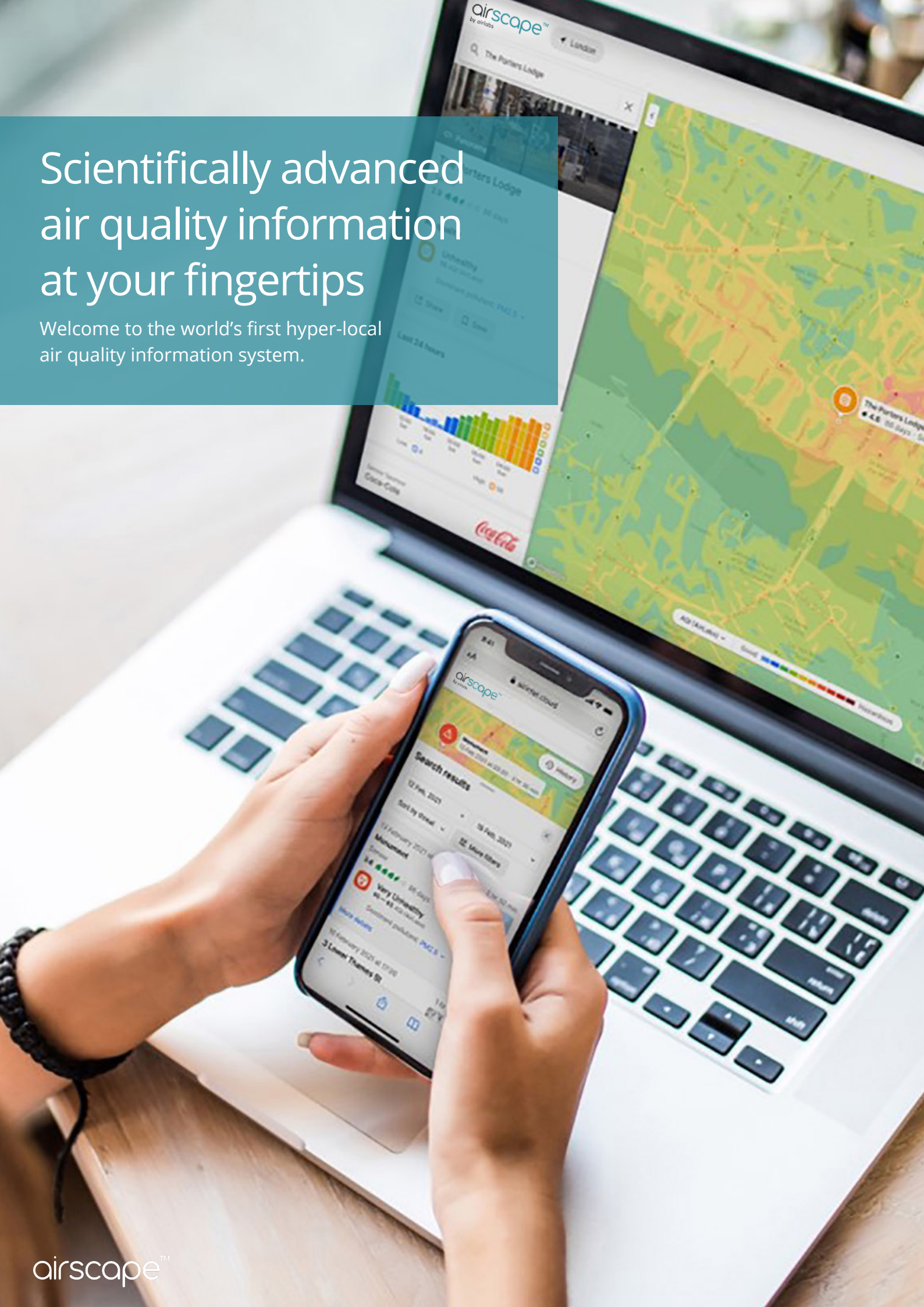
Where to rent new business premises

Moving house or flat: especially for those who suffer from respiratory conditions

Where and when to exercise

Scientifically advanced air quality information at your fingertips

Welcome to the world's first hyper-local air quality information system.



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Carbon footprint impact

Leaders in sustainability are coming together to solve our ecological crisis. Through identification of the problem, by measurement and building awareness, AirScape can show the tangible positive impacts of corporate ESG efforts. Being able to predict, monitor, react and plan for environmental pollution changes is critical to the future of our planet and humanity.

Activity x Emissions/Removal (CDR) = CO_2e

NO_2 is a potent catalyst of atmospheric reactivity, reducing methane and producing ozone, acid rain and PM. Ozone creates a vicious circle of increasing temperatures, allowing more ozone to form, which increases temperatures ... and so on. And particulate matter leaves lasting effects on the environment and climate. As improvements are made to air quality, equivalent CO_2 and carbon footprint are reduced.

1kg of Ozone is the equivalent of 1000kg of CO_2 and fossil fuel soot is 2,500 times the CO_2 equivalent.

AirScape is a high-density, real-time, low-cost air quality monitoring network, taking pollutant measurements every minute in cities and towns to inform policymaking for the environment and public health. Extremely versatile, AirScape creates a picture of the city, making it easier to pinpoint the most problematic sources and address them. The combined data tracks air quality and emissions across cities and regions to demonstrate progress over time.

> We firmly believe that air quality information should be accessible for everyone in the community. For the first time ever we want to put actionable air quality information into the hands of the community for the good of the community.
>
> **Jorge Vasquez**
> **CEO, AirScape**

AirScape – from in-depth information to collective action

A tool that helps individuals minimise their own exposure to air pollution or change their behaviour to help reduce air pollution is a great step forward. But the ultimate aim is to improve the air quality in local communities through **actionable information.**

Imagine that everyone in the neighbourhood was equally well informed. From your neighbours, to the baker on the corner, the newsagent at the tube station and that large corporate office in the business park. Equipped with this knowledge communities could join forces and work together to influence policies that affect air quality in the local area. To work as a team to bring about change and improve the environment.

The benefits are huge: a reduction in serious illnesses and respiratory related health issues, cleaner areas to live, work and play, safer schools.

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AirLabs is a mission-driven company and a world-leading pioneer in air quality management. We are passionate about clean air as a human right and work tirelessly on technologies that help people around the world to reduce their exposure to air pollution and airborne pathogens and allergens.

AirLabs is one of the few companies in the world which has deep intellectual property and know-how in both air filtration and air quality monitoring. We use this know–how to develop solutions that provide insight into air quality as well as protect people from the threats that poor air quality poses to their health and wellbeing.

We pride ourselves in being a sustainable and equal opportunities company.

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