

Making the Invisible, Visible Implementing a Clean Air Project



Agenda

1. Vortex – Who are we?
2. Why we're here?
3. Clean air project: Step-by-step guide
4. Case studies
5. Proven results
6. How can we help

Vortex - Who are we?

- Founded in Neath in 2017 with a Smart City vision, we build environmental sensor networks and data solutions to support decarbonisation and air quality initiatives
- Fully integrated technology, R&D and Manufacturing Hub based in South Wales
- With 50 people employed in Wales, working on Software and Hardware Engineering, Manufacturing, AI, and Electronics
- We operate the largest air quality monitoring network in Europe
- Now part of Marston Holdings since early 2022, part of a 5000-person organisation working with 200+ local authorities

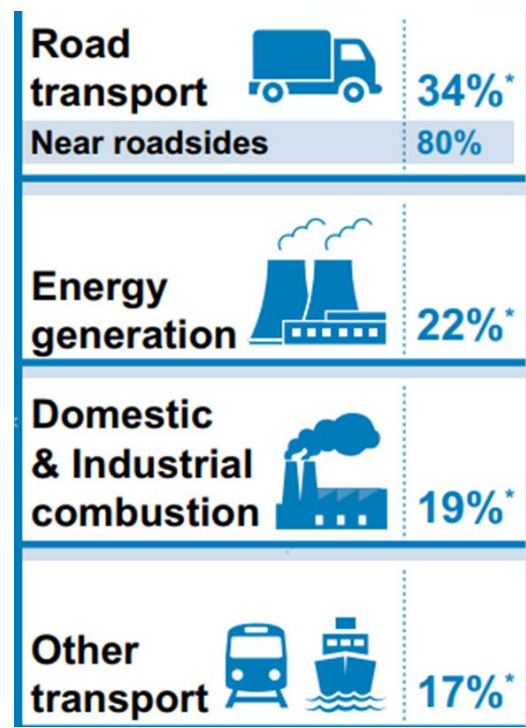


Why we're here?

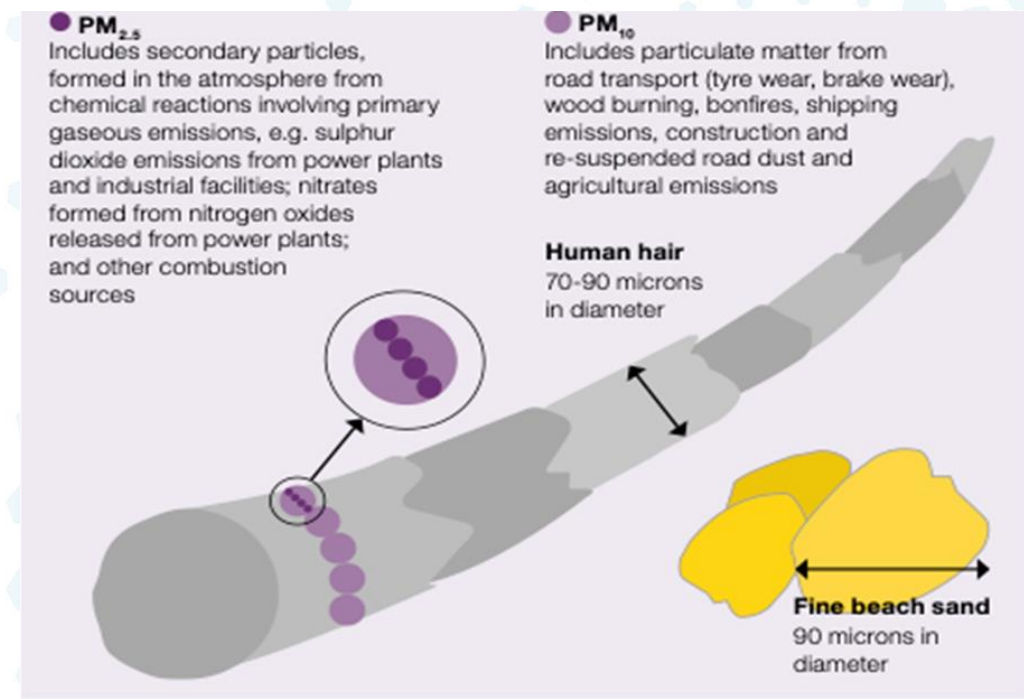
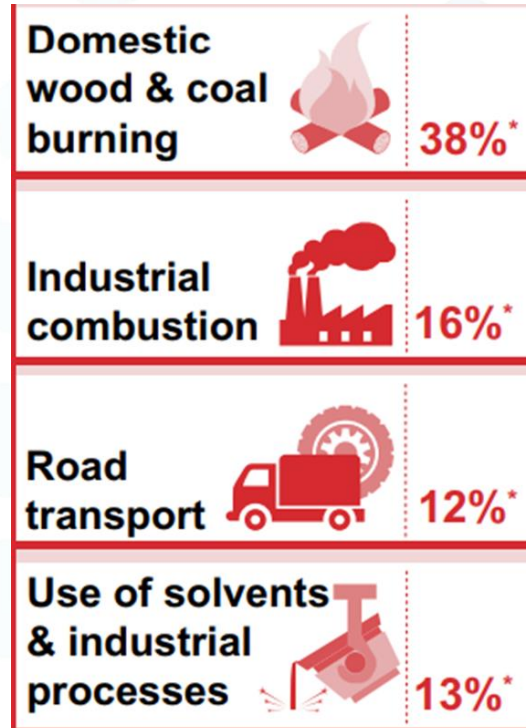
"There is clear evidence to show that exposure to air pollution reduces life expectancy and significantly increases the risk of dying from heart disease, strokes, respiratory diseases, lung cancer and other conditions"

Councillor Dan De'Ath, Cabinet Member for Strategic Planning and Transport, Cardiff Council

Nitrogen dioxide NO₂



Particulate matter - PM₁₀, PM_{2.5}



Clean air project: Step-by-step guide

1. Deciding on your goal
2. Defining your evaluation method
3. Baselining your data
4. Implementing your solution
5. Project evaluation

Step 1 – What are you trying to achieve?

Local Authority	Private
<ul style="list-style-type: none"><li data-bbox="165 521 817 571">• Safer schools and streets<li data-bbox="165 649 932 763">• Air Quality Management Area (AQMA)<li data-bbox="165 835 682 892">• Political placement	<ul style="list-style-type: none"><li data-bbox="1177 521 2020 578">• Legislative emissions compliance<li data-bbox="1177 649 1658 706">• Carbon neutrality<li data-bbox="1177 778 2091 892">• Environmental, social and corporate governance

Step 2 – What does success look like?



Community Engagement & Awareness

Traffic Numbers/Modal Traffic

Reduced Traffic Violations

Other Specific Requirements

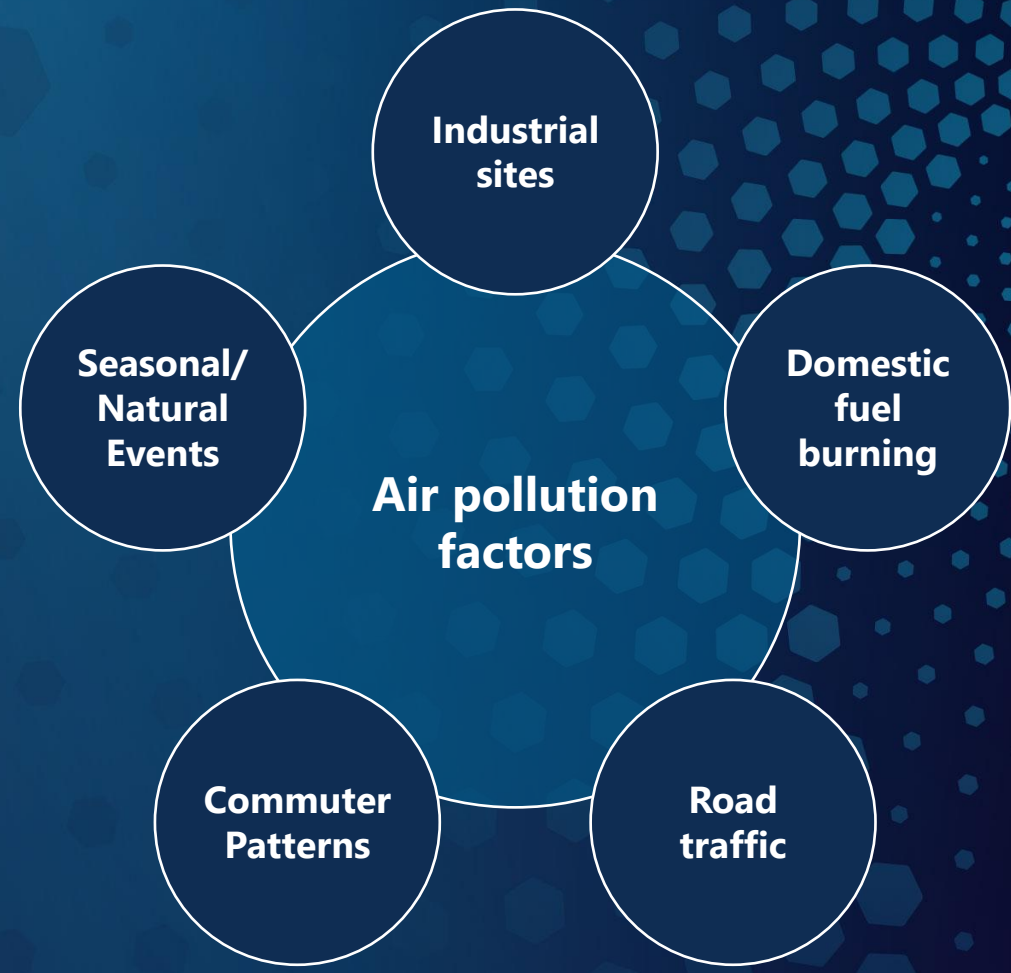
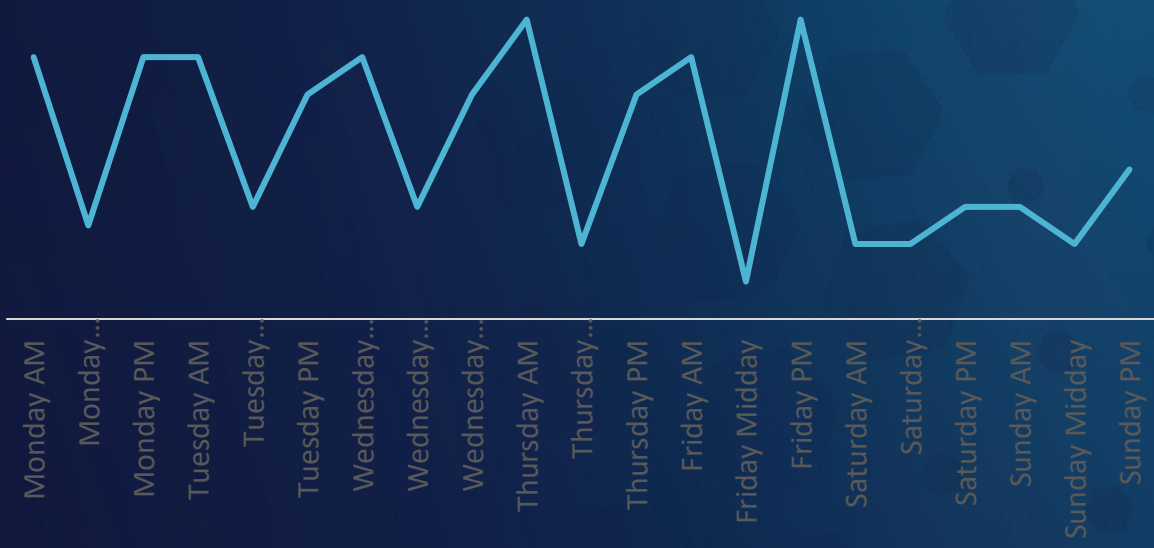
Active Travel Uptake

Air Quality Levels

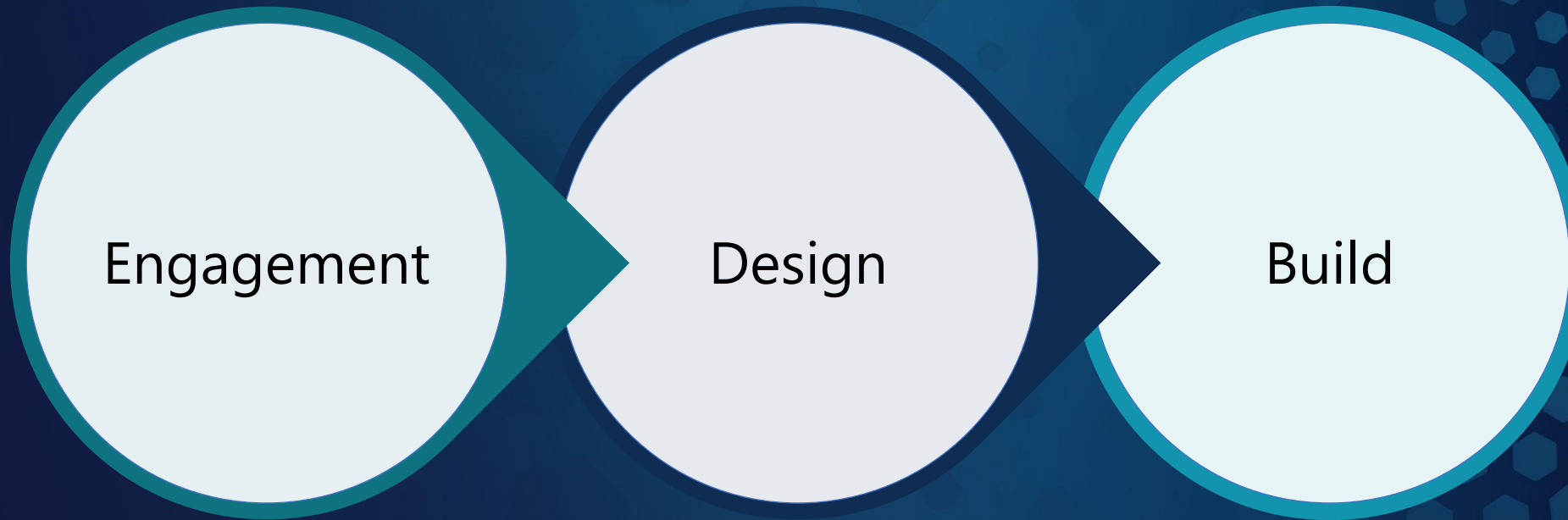
Step 3 – Baselining your data

TLDR — “Air pollution levels are far from constant — they can vary by season, time of day, across large spans of time, based on meteorological factors, and in connection to climate change”

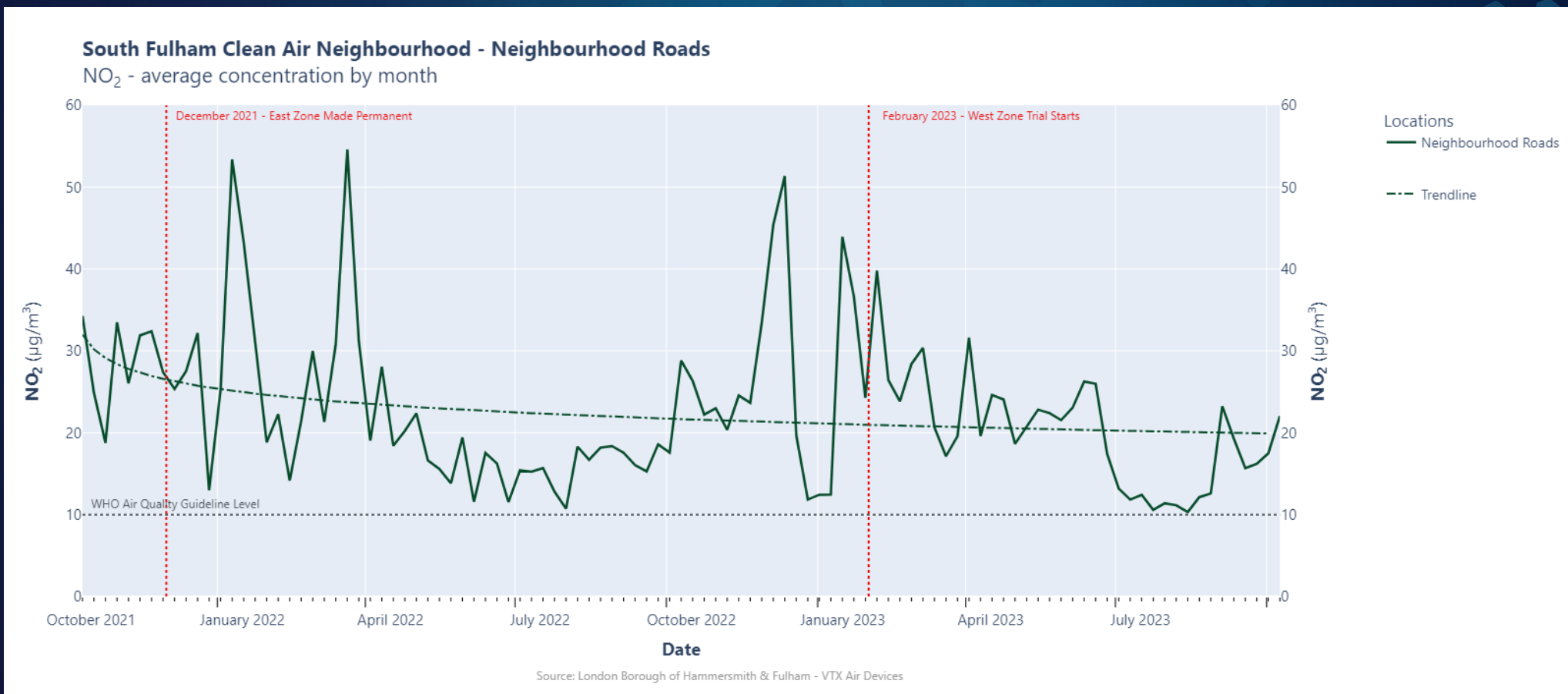
Before Intervention



Step 4 – Implementing your solution



Step 5 – Project evaluation



Case Study

Waltham Forest School Street Scheme

Vision

Monitor the effectiveness of their ANPR enforced School Street programme

Solution

12 maintenance-free VTX Air monitors with real-time street-level accuracy data, across three schools

Outcome

Drive behaviour change and convince residents of their health and road safety benefits

Results



Exposure to NO₂ levels below WHO guidelines 10x more often than non-school streets



Waltham Forest

Proven results



London Borough of
Hammersmith and Fulham



Improved
traffic flow by
60%



Cardiff City Council



Pollution data
distributed across
26 schools



London Borough of
Hammersmith and Fulham



Removed 1 tonne
of carbon per day
in the first 6 weeks

How can we help?

Hyperlocal air quality monitoring



Continuous monitoring and data collection:
PM_{2.5} / PM₁₀ / NO₂ / O₃ - MCERTS Certified

Maintenance free: No additional resource or filter changes needed

360-degree visibility: Identify hidden pollution hotspots with precise real-time data

Evidence-based decisions: Use baseline data to validate interventions and investments

Marston Holdings End-End Services



Consultancy

Designing safe and sustainable communities



Technology

UK's leading traffic management and enforcement provider



CPE

Civil Parking Enforcement – Supporting over 75% of UK Local Authorities



BPO

Back-office processing – saving time and money



Marston Recovery

Protecting your revenue

Thank you / Any questions?

**We will be holding live demo of our
air quality portal on stand EN-G82**