



Air quality in the built environment: national and global perspectives

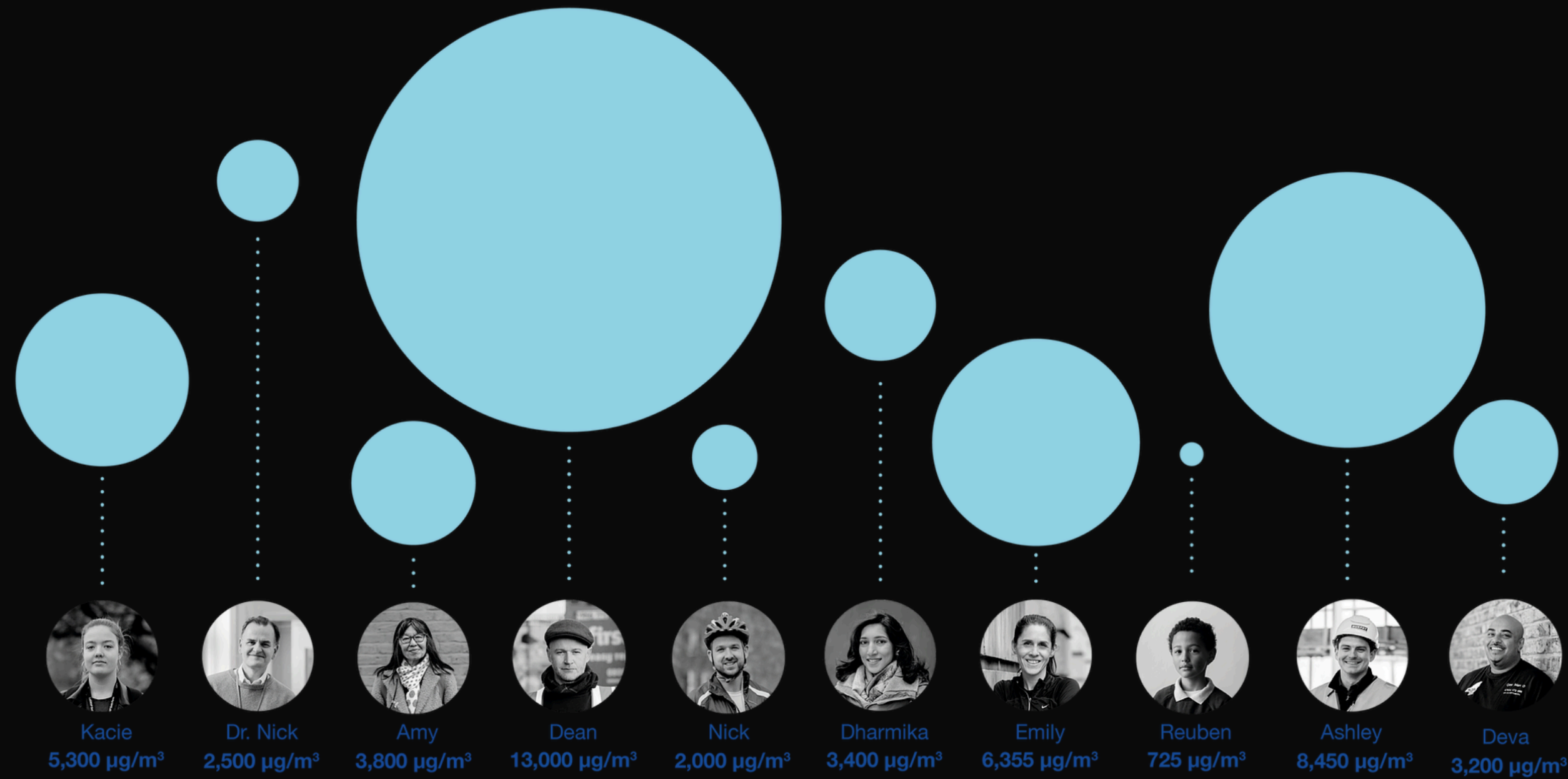
SALUS Healthy City Design Conference

Catriona Brady
World Green Building Council

Sophia Cox
UKGBC







Kacie
5,300 µg/m³

Dr. Nick
2,500 µg/m³

Amy
3,800 µg/m³

Dean
13,000 µg/m³

Nick
2,000 µg/m³

Dharmika
3,400 µg/m³

Emily
6,355 µg/m³

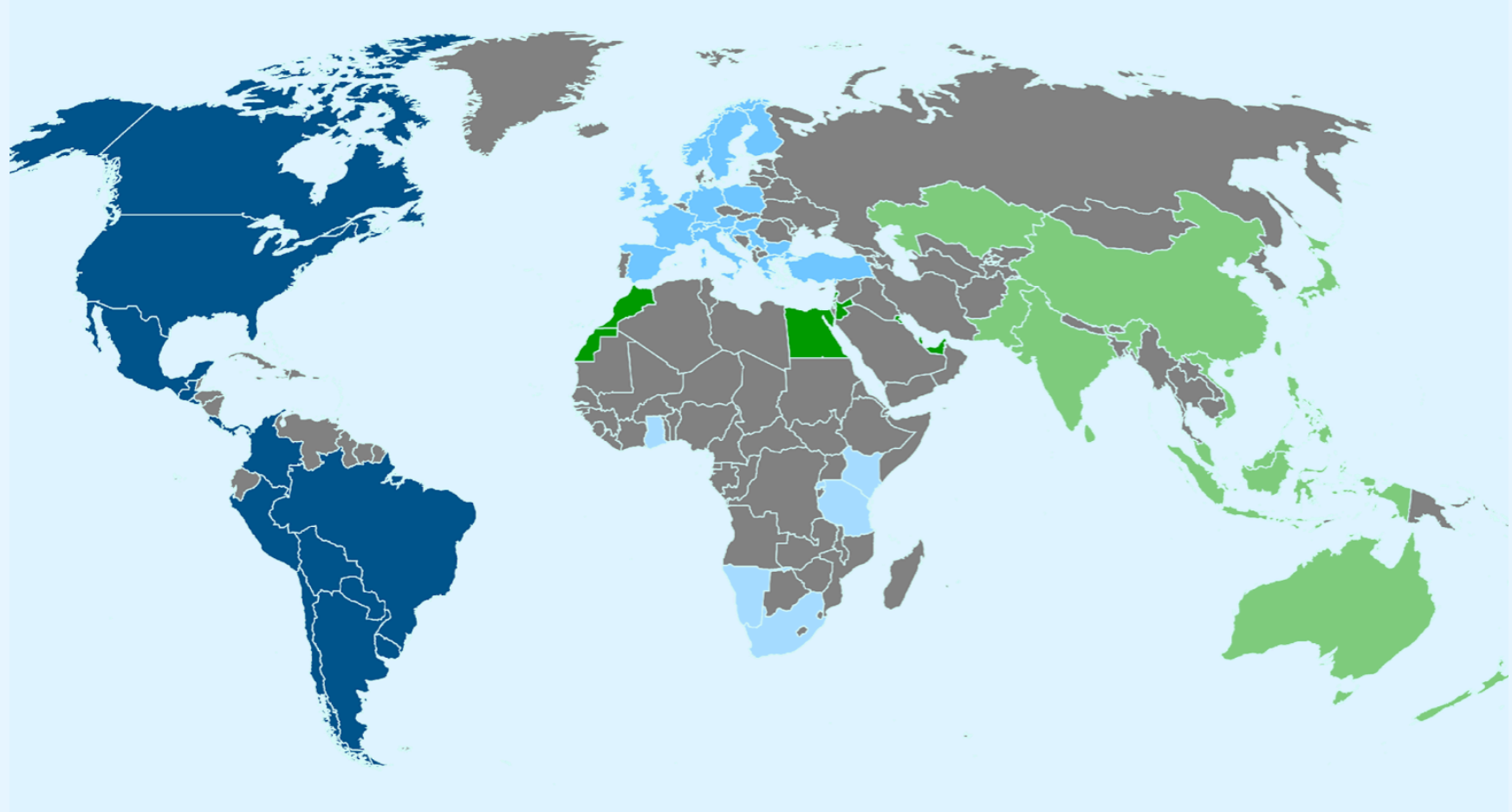
Reuben
725 µg/m³

Ashley
8,450 µg/m³

Deva
3,200 µg/m³

World Green Building Council

- A global network of 70 Green Building Councils
- The world's largest and most diverse network of sustainable built environment experts, with over 37,000 members
- Organised for local, regional and global impact



Accelerating solutions

Green Building Councils are independent non-profit organisations made up of businesses and organisations in the building and construction industry.

They bring together industry, government and civil society to facilitate market transformation, positioning buildings as a key response in the fight against climate change.

Collaborate



123,400 people participate in GBC events and networks annually

Innovate

GBCs invest \$7m in innovative research each year

Communicate



GBC communications have an estimated reach of +500m people

Rate



2.65 billion m² of buildings have been certified sustainable by 36 GBC rating tools

Educate



46,800 people trained by GBCs annually

Advocate



GBCs strengthened policy in 35 countries last year alone

EUROPE REGIONAL NETWORK



AMERICAS REGIONAL NETWORK



WORLD GREEN BUILDING COUNCIL



MENA REGIONAL NETWORK

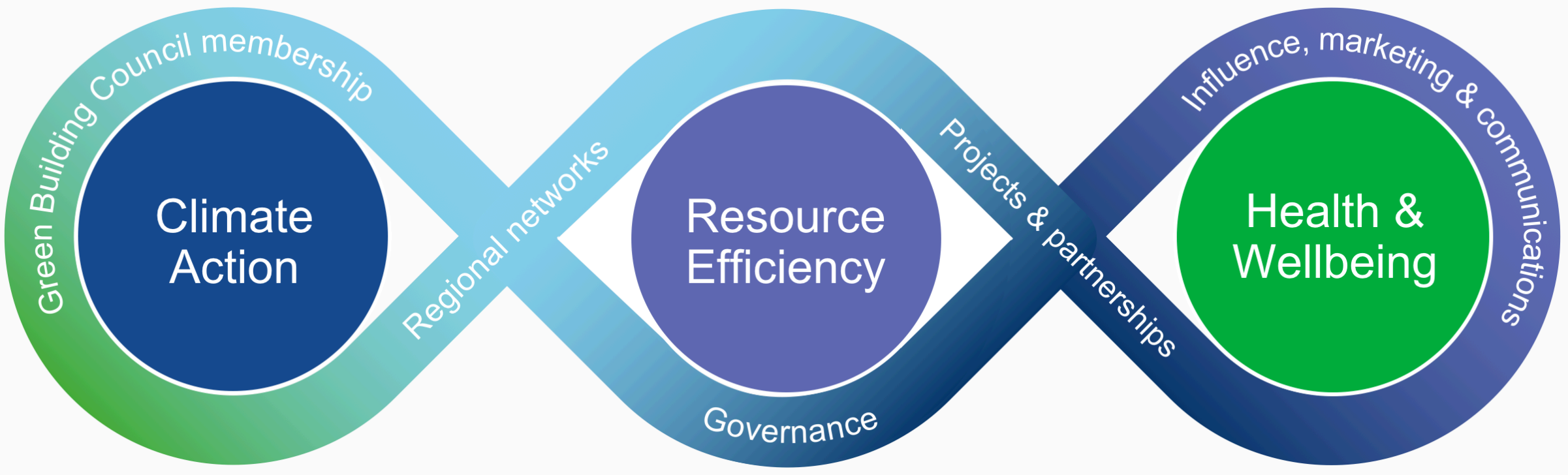


AFRICA REGIONAL NETWORK



ASIA PACIFIC REGIONAL NETWORK

Our Strategy: drive sector impact





UK
GBC

Together for a better built environment

Clients



Advisors



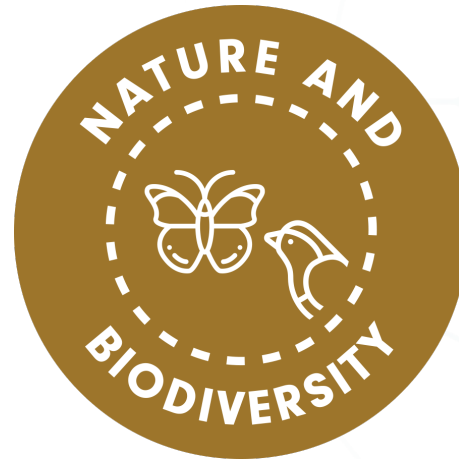
Contractors



Suppliers



A built environment that enables people and planet to thrive



State of play – the global air pollution crisis

China to host World Environment Day 2019 on air pollution

Chile: Supreme Court Hears Massive Air Pollution Case

WORLD HEALTH DAY 2019: INDIA ACCOUNTS FOR QUARTER OF THE WORLD'S AIR POLLUTION DEATHS



How air pollution is destroying our health

As air pollution increases in some US cities, the Trump administration is weakening clean air regulations

May 2, 2019 11:43am BST

23 APR 2019 | STORY | AIR

Air pollution and climate change: two sides of the same coin



WorldGBC 'Air Quality in Buildings' campaign in partnership with the Climate and Clean Air Coalition

Promoting a sustainable built environment to mitigate cause and effect of air pollution, reducing harm to people and planet.

Green buildings are part of the solution



The Campaign

We are targeting the **specific impacts of the built environment** on the crisis of **air pollution** **across the world**, in order to reduce the impacts on **human health** and our **natural environment**



Green buildings are part of the solution



Causes of air pollution in built environment: ambient

Ambient, or outdoor, air pollution is caused by a range of factors, including transport, agriculture and waste degradation. However the contribution of the built environment, in both the construction and operational phases, cannot be underestimated.



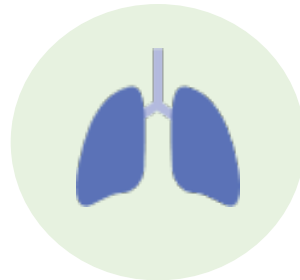
Energy

39% of global energy-related carbon emissions are attributed to buildings



Construction

Most of the 1,500 billion bricks produced annually are using polluting kilns



Construction

Concrete production can release silica dust, a known carcinogen



Heating

Traditional cookstoves cause 58% global black carbon emissions



Cooling

HFCs, potent climate forcers, are often found in AC systems

Causes of air pollution in built environment: indoor

Pollutants found within buildings of all types can be harmful to people across the world, with 4.3 million deaths attributed to exposure to household air pollutants each year.



Heating

Combustion of solid fuels causes indoor as well as outdoor pollution



Damp and mould

Caused by air infiltration through cracks in building fabric



Chemicals

VOCs, emitted from certain materials, have adverse health effects



Toxic materials

Construction materials, e.g. asbestos, can cause harmful airborne pollution



Outdoor infiltration

Most exposure to outdoor air pollution occurs inside buildings

Impacts of air pollution

Polluted air within and outside our built environment is causing harm to;



People



Planet



Buildings

Impacts of air pollution on people



**Air pollution
causes
1 in 9 deaths
worldwide**

7% lung cancer deaths
18% pulmonary disease deaths
20% stroke deaths
34% heart disease deaths

**Also impacting
concentration,
productivity, and
health and
wellbeing**

Impacts of air pollution on planet



Carbon dioxide
and other greenhouse gases
responsible for
greenhouse
effect



SLCPS
(Short Lived Climate Pollutants)
responsible for
45% current
global warming

Building materials
and construction
practices
negatively affect
natural habitats

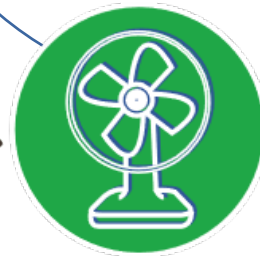
Impacts of air pollution on buildings



Polluted outdoor air reduces use of natural ventilation strategies



Emissions multiplier effect due to increased filtration demand



Further increasing urban heat island effect and cooling demand

Promoting sustainable solutions

We are targeting **different stakeholder groups** to reduce their impact to and from **air pollution in the built environment**

Citizen

Corporates

**Health
sector**

**Policy
makers**

Green buildings are part of the solution



We cannot improve what we cannot measure

World Green Building
Council is committed to
increasing public access
to vital data on air
quality worldwide

Plant a Sensor

A global air quality monitoring campaign

worldgbc.org/plant-a-sensor



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What will the Plant a Sensor campaign do?

Provide universal access to valuable air quality data

Generate data-driven action for a sustainable built environment

What are the goals of the Plant a Sensor campaign?

Generate data-driven action for a sustainable built environment

Enlighten citizens about the air around them, indoors and outdoors

Equip researchers and policy makers with rich, global data

Empower a global audience with information for effective advocacy and policy change

Enable awareness and understanding of the built environment's impact on air pollution

How does the Plant a Sensor campaign work?

Plant a Sensor participants monitor and report air quality data

Air quality data publicly accessible via [RESET Earth](#) platform

Connection and data sharing with existing air monitoring networks

Data from **Plant a Sensor** contributed to Earth Challenge 2020

Be part of our clean air future

Get involved in Plant a Sensor

Download the
campaign materials
and guide at

[worldgbc.org/
plant-a-sensor](http://worldgbc.org/plant-a-sensor)

and join our global air
quality network

Share your
participation
and support on
social media

Free materials at
[worldgbc.org/
plant-a-sensor](http://worldgbc.org/plant-a-sensor)

For information or
partnership opportunities
please contact:

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Thank you

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