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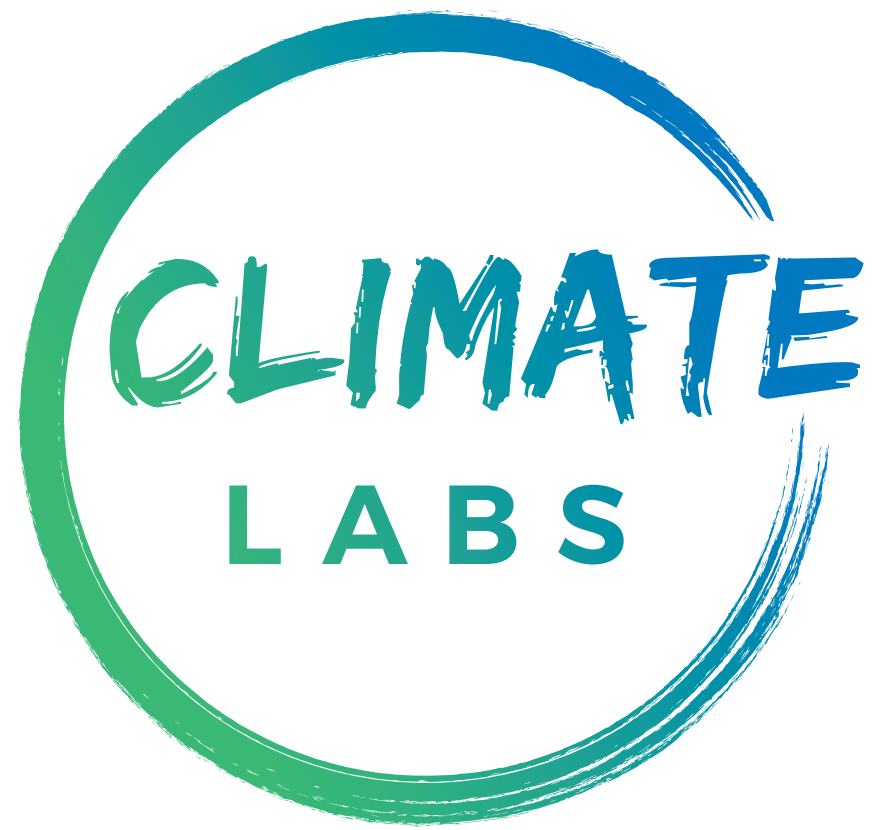
**Ahsan Khan & Phil Spencer**

**🐦 @ClimateLabs\_uk**

**Designers & Co-founders**

Communication | Service | Sustainability

**WE ARE A SOCIAL AND  
ENVIRONMENTAL IMPACT  
DESIGN AGENCY**



**ClimateLabs.uk**

**A MULTIDISCIPLINARY  
TEAM OF DESIGNERS,  
RESEARCHERS, ACADEMICS,  
AND SCIENTISTS**



**Ahsan Khan BSc, MA**

**Designer & Co-founder**



**Phil Spencer BA, MA**

**Designer & Co-founder**



**Paul Micklethwaite PhD, FRSA**

**Trustee / Senior Research Fellow  
Kingston University**



**Rebeca Torrez BSc, MA**

**Trustee / Social Design  
Researcher**

Design & Delivering



# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

**1** NO POVERTY

**2** ZERO HUNGER

**3** GOOD HEALTH AND WELL-BEING

**4** QUALITY EDUCATION

**5** GENDER EQUALITY

**6** CLEAN WATER AND SANITATION

**7** AFFORDABLE AND CLEAN ENERGY

**8** DECENT WORK AND ECONOMIC GROWTH

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**10** REDUCED INEQUALITIES

**11** SUSTAINABLE CITIES AND COMMUNITIES

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**13** CLIMATE ACTION

**14** LIFE BELOW WATER

**15** LIFE ON LAND

**16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**17** PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS



# Design for Nature and Humanity

Research, insights, re-define problems

# What is Sustainability?



# It's a balancing act...



# Sounds like a religion?

TAKE CARE  
OF HUMANITY

**Social**

People

TAKE CARE OF THE  
ENVIRONMENT

**Environmental**

Planet

**Economic**

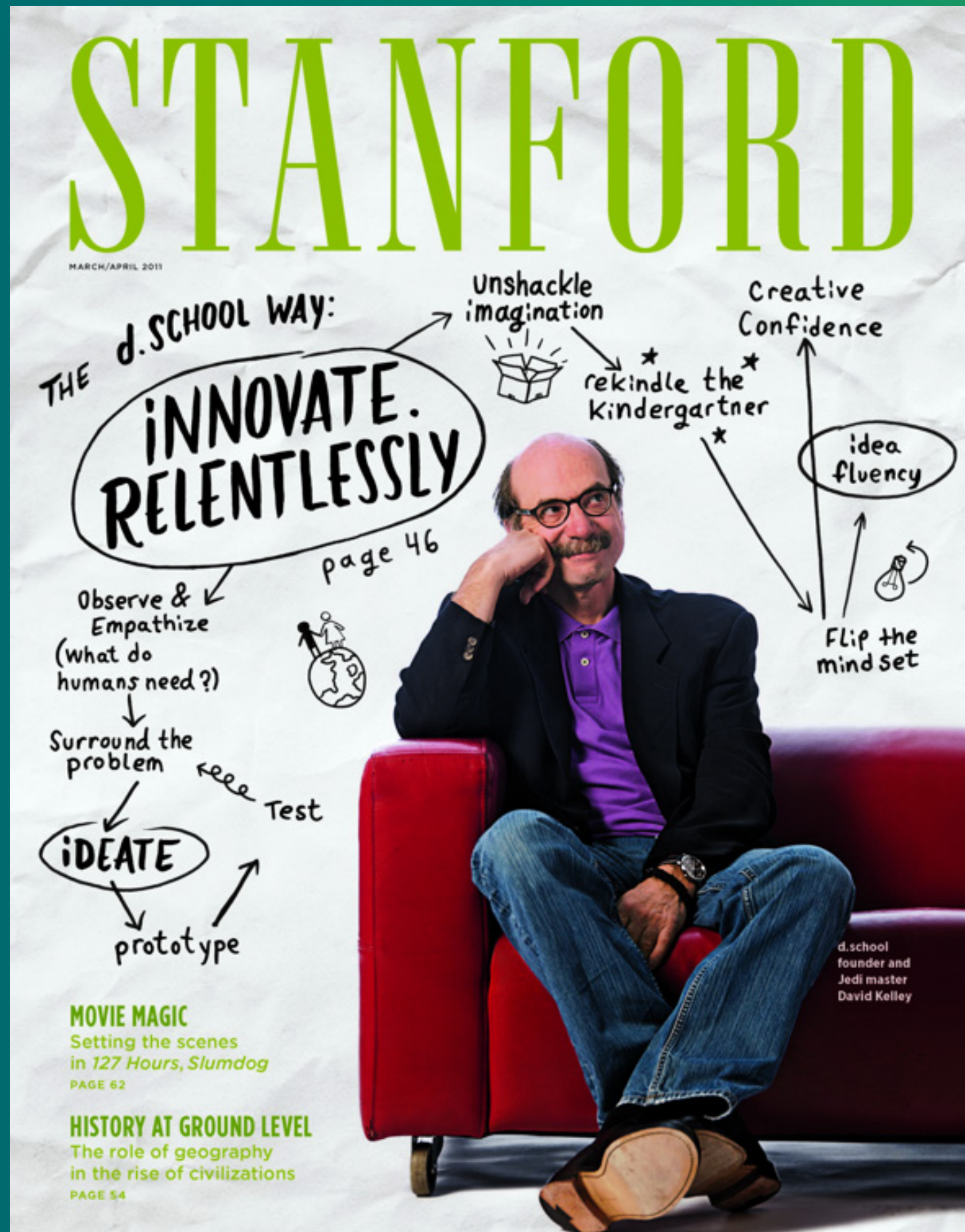
Profit

BE FAIR IN THE WAY  
YOU DO BUSINESS

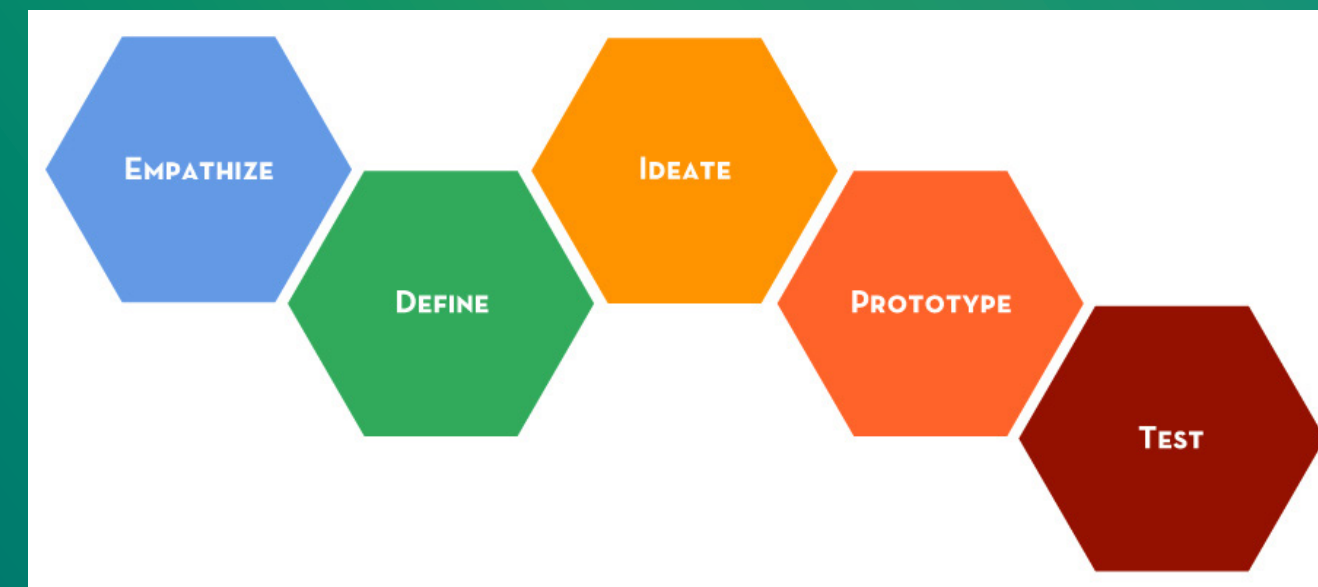
Peace?

Peace?

# About Design Thinking



We use design thinking, which is a collaborative and inclusive way to come up with innovative ideas for social good.



It started from user centred design company IDEO. David Kelly was the guy behind the first apple mouse. He went on to develop and refine this process so anyone can use it for solving real pressing issue, like water transport, sanitation issues in developing countries

Social, user-centered, inclusive and collaborative design processes. These methods create design outcomes that are strategic, informed, relevant, and impactful.



# Now who uses DT



Government Digital Service

Part of [Cabinet Office](#) and [Efficiency and Reform Group](#)



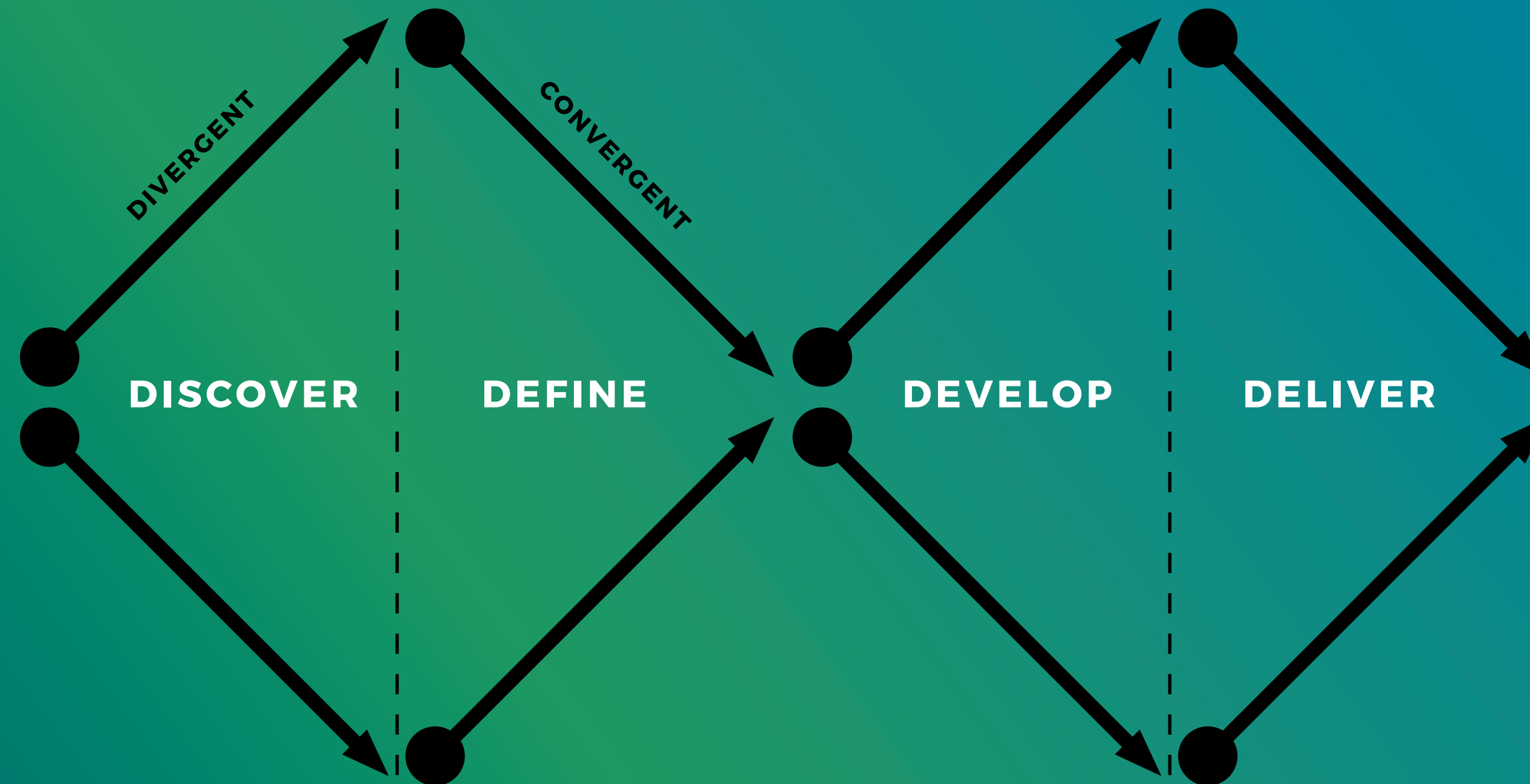
**PHILIPS**



# Design Thinking with the Design Council



## THE DOUBLE DIAMOND



### DISCOVER

Initial ideas or inspiration & establishment of users needs

- Market Research
- User Research
- Design Research
- Technology Research
- Interviews and Insights Gathering
- Observation & Shadowing
- Empathy Mapping
- Information Management

### DEFINE

Interpretation & alignment of findings to project objectives

- Information Analysis
- Synthesis & Identification
- Project Refinement
- The Design Brief
- Project Management
- Project sign-off

### DEVELOP

Design-Led concepts & proposals Iterated & Assessed

- Ideation
- Multi-disciplinary working
- Visual Management
- Development Methods
- Testing & Prototyping
- Review and Improvement

### DELIVER

Process outcome(s) Finalised & Implemented

- Final Testing & Approval
- Launch of outcomes
- Evaluation & Feedback
- Targets

# Design Thinking for a pressing social problem...



## CLEAN AIR CAMP SCHOOLS PROJECT

Air Pollution Awareness at Schools

# Why? ...well lets see the Research on air pollution

---



Royal College of  
Physicians report  
**EACH YEAR  
40,000  
DEATHS  
IN UK**

Linked to cancer, asthma,  
stroke and heart disease,  
diabetes, obesity, and  
linked to dementia.



**COSTING  
NHS £20  
BILLION  
PER YEAR**

# What's in the air we breath?

## **NITROGEN DIOXIDE NO<sub>2</sub>**

From road traffic,  
mainly diesel

## **PARTICULATES**

PM10 and PM2.5s solid and  
liquid droplets in the air  
from traffic

## **OZONE**

a gas formed when  
other pollutants -  
Like NO<sub>2</sub> react in  
the atmosphere

## **DIESEL**

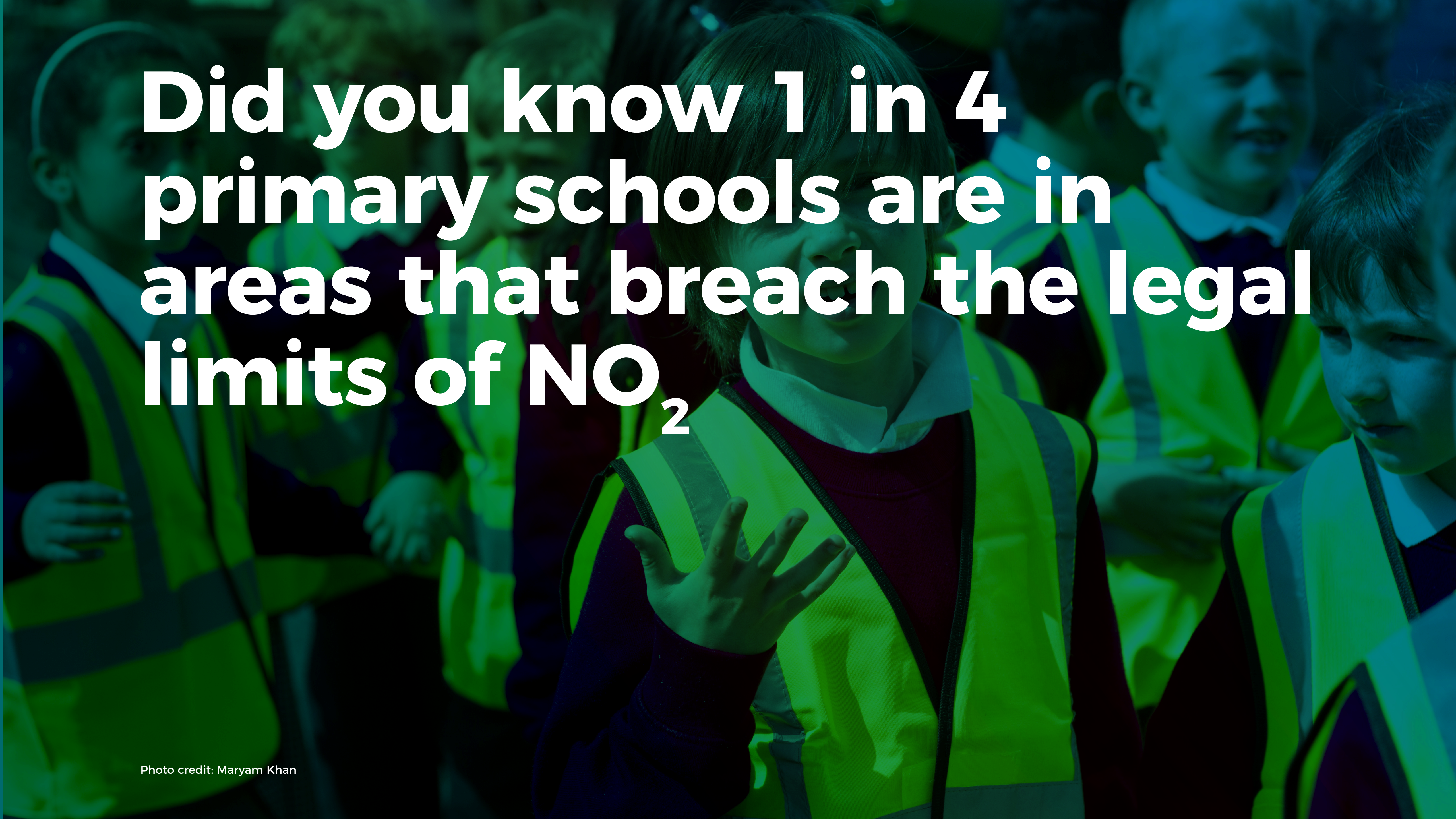
Fumes are a major  
source of deadly NO<sub>2</sub>  
and particulates

## **SULPHUR DIOXIED**

from buring fossil  
fuels, mainly power  
plants

## **METALS**

Lead emissions from iron  
and steel production -  
arsenic from burning  
treated wood



**Did you know 1 in 4  
primary schools are in  
areas that breach the legal  
limits of NO<sub>2</sub>**

# WHO (World Health Org.)

## GUIDELINES FOR PM2.5

**10  $\mu\text{g}/\text{m}^3$  annual mean**

**25  $\mu\text{g}/\text{m}^3$  24-hour mean**

microgram / cubic meter

- Coarse dust particles (PM10) are 2.5 to 10 micrometers in diameter. Sources include crushing or grinding operations and dust stirred up by vehicles on roads.
- Fine particles (PM2.5) are 2.5 micrometers in diameter or smaller, and can only be seen with an electron microscope. Fine particles are produced from all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes

<https://www.airnow.gov/index.cfm?action=aqibasics.particle>

# Where to start? Research with specialist and people affected...



**Dr Benjamin Barratt**

Research Group

Environmental Research Group

MRC-PHE Centre for Environment & Health

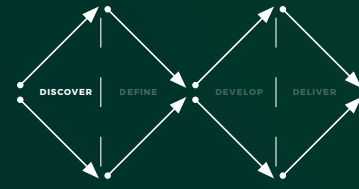
The logo for King's College London, featuring the text 'KING'S' in a large serif font, 'College' in a smaller script font, and 'LONDON' in a large serif font below it, all in white on a red background. Two horizontal lines are positioned below the word 'LONDON'.

**KING'S**  
*College*  
**LONDON**

**Leading air quality research,**

**International data modelling**





- 1. IDENTIFY
- 2. IDEATE
- 3. INSPIRE

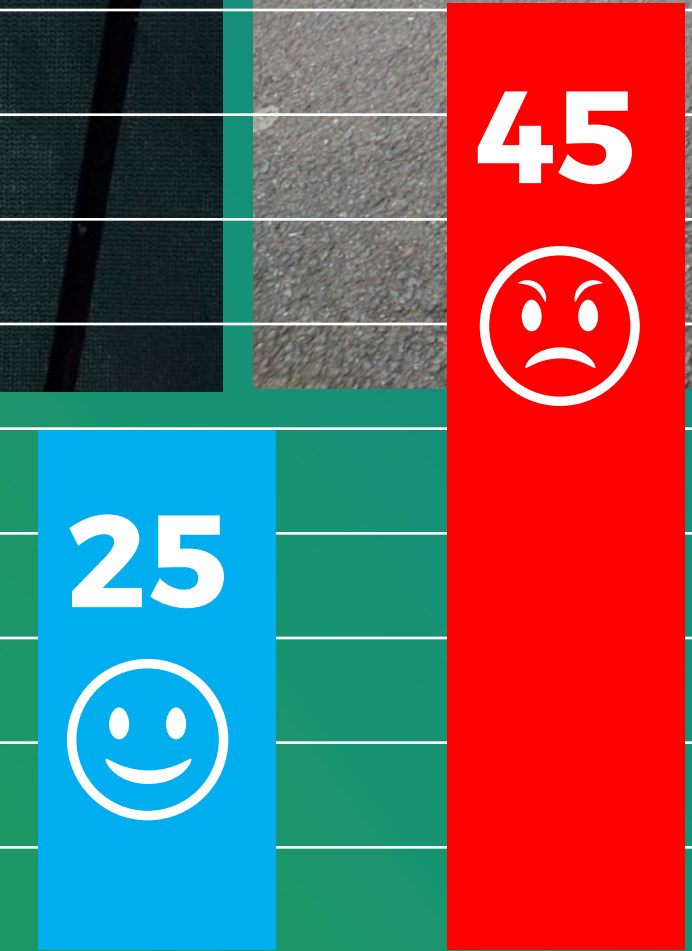


40  $\mu\text{g}/\text{m}^3$

30  $\mu\text{g}/\text{m}^3$

20  $\mu\text{g}/\text{m}^3$

10  $\mu\text{g}/\text{m}^3$



WHO GUIDELINES FOR PM2.5

10  $\mu\text{g}/\text{m}^3$  annual mean

25  $\mu\text{g}/\text{m}^3$  24-hour mean

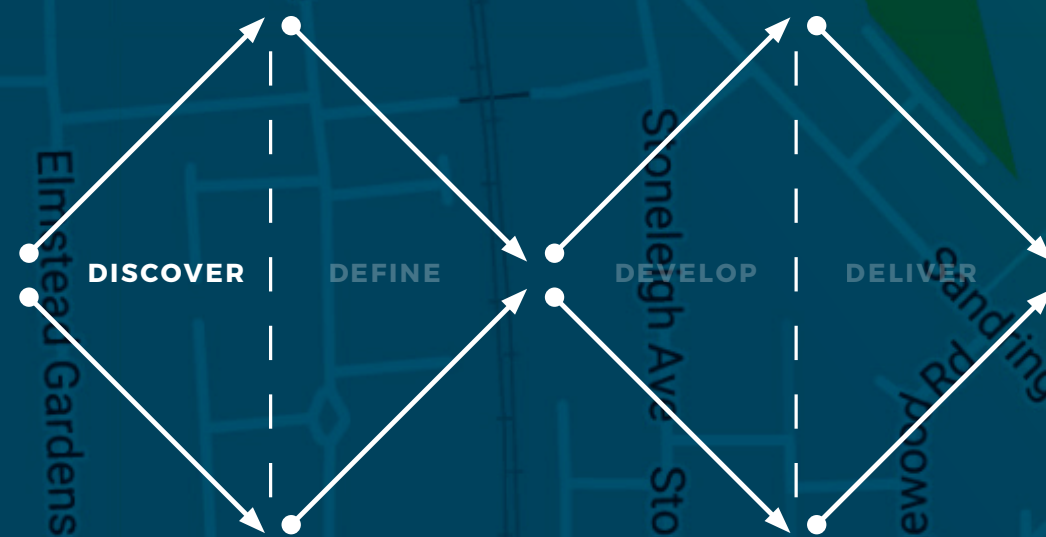
microgram / cubic meter

Photo credit: Maryam Khan

FEB 2017

# Design for social impact and behaviour change

1. IDENTIFY
2. IDEATE
3. INSPIRE



# Air Awareness at Schools

## IMPACT MODEL

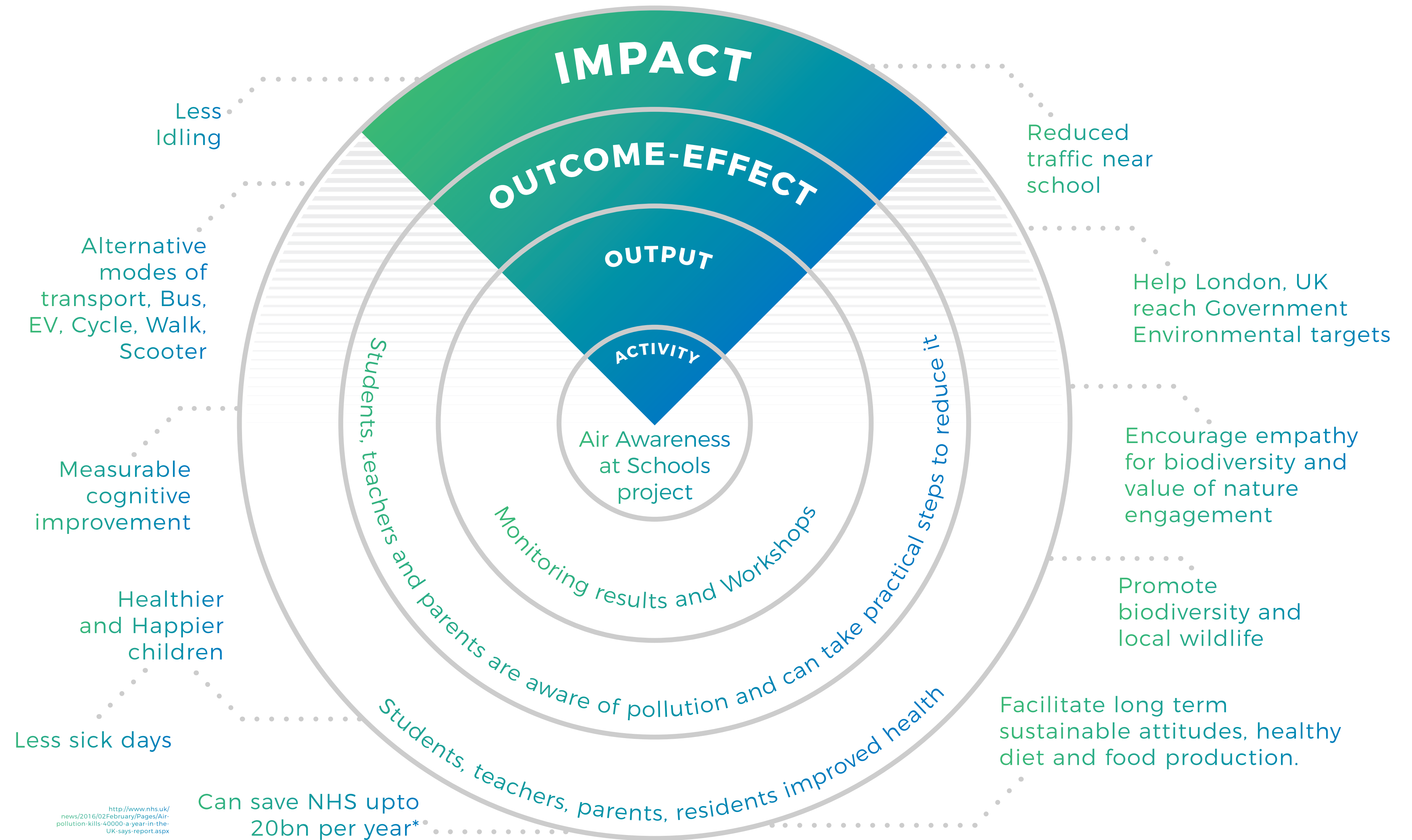
CL\_Impact\_02  
© 23/02/17

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# IMPACT MODEL









NEW TECH &  
INNOVATION TO  
ALLOW DATA TO  
INFORM US

# 1. IDENTIFY





6 WEEK  
PROGRAMME

WEEK 2

# 1. IDENTIFY



Photo credit: Maryam Khan



6 WEEK  
PROGRAMME

WEEK 2

# 1. IDENTIFY



Photo credit: Maryam Khan



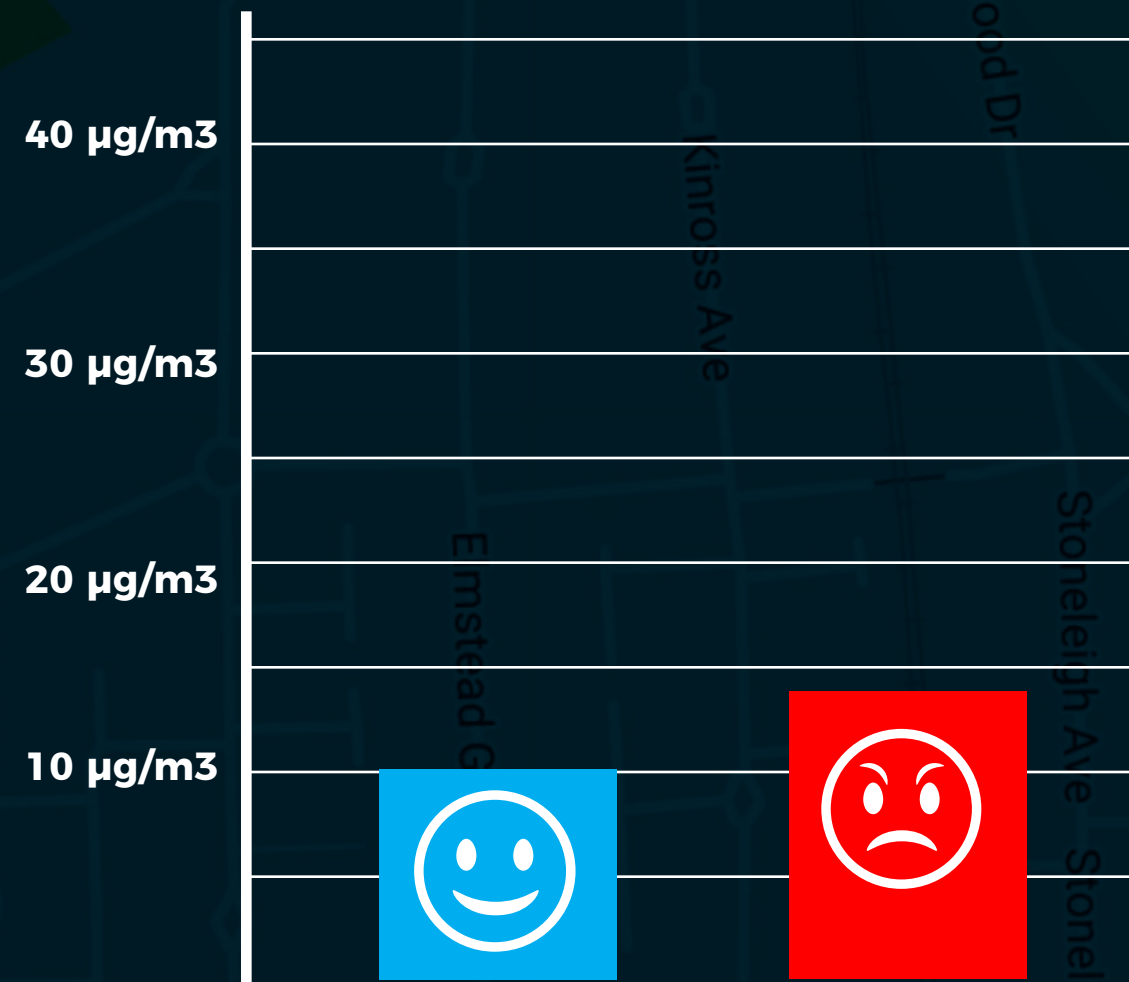


# 6 WEEK PROGRAMME

Worcester Park Baptist Church

## WEEK 2

# 1. IDENTIFY



MAY 2017

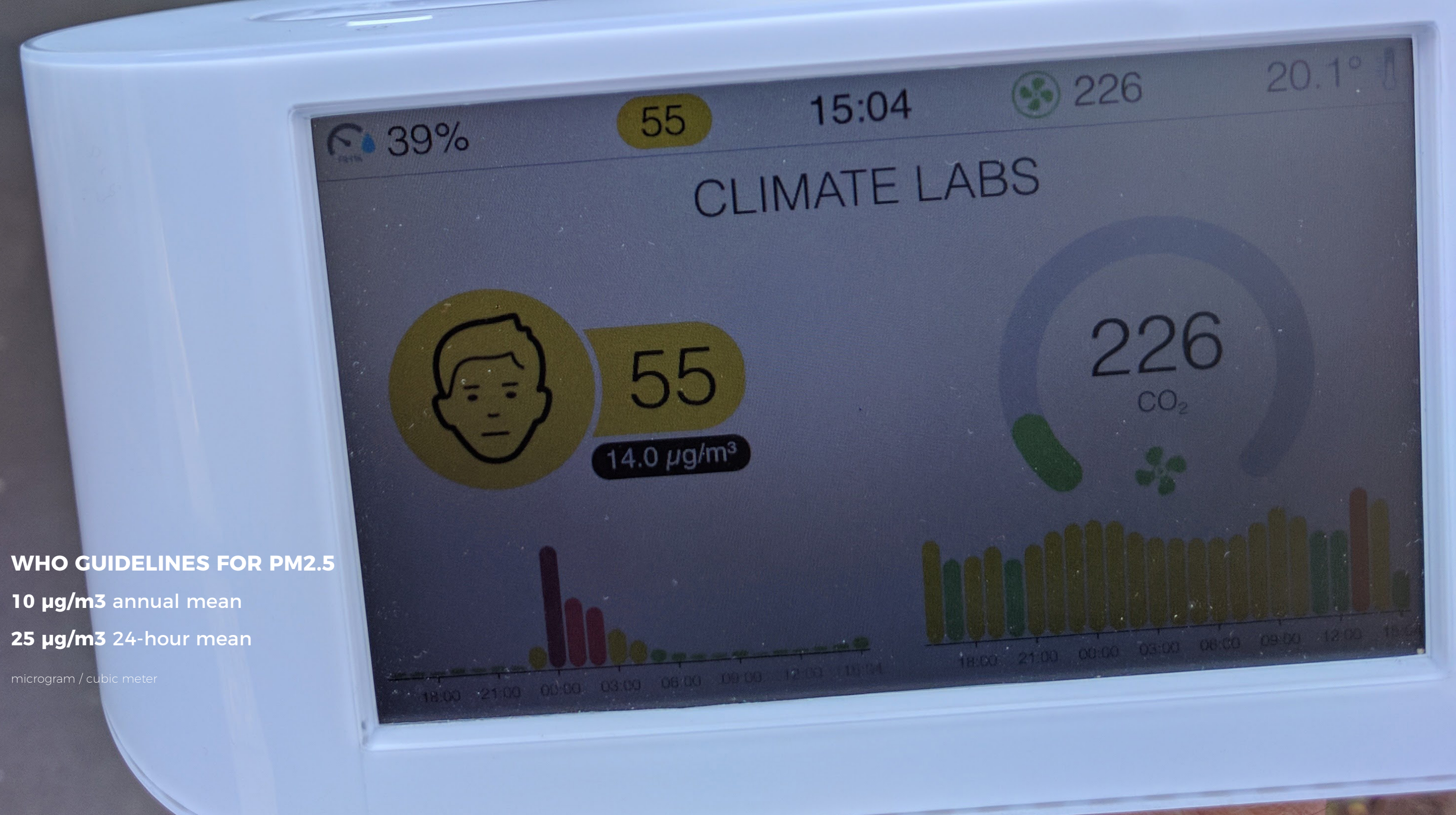


### WHO GUIDELINES FOR PM2.5

10 µg/m<sup>3</sup> annual mean

25 µg/m<sup>3</sup> 24-hour mean

microgram / cubic meter



## WORCESTER PARK HIGH STREET





6 WEEK PROGRAMME

WEEK 3

## 2. IDEATE

MAPPING OUT THE AREA



Photo credit: Maryam Khan



6 WEEK  
PROGRAMME

WEEK 3

## 2. IDEATE

MAPPING OUT THE AREA





6 WEEK PROGRAMME

WEEK 4

## 2. IDEATE

ROLE PLAY / HOT SEATING





6 WEEK PROGRAMME

WEEK 5

# 3. INSPIRE

LEARNING THROUGH PLAY





6 WEEK PROGRAMME

WEEK 6

# 3. INSPIRE

5 TOP TIPS

OUTDOOR BANNER

## HELP WITH OUR CLEAN AIR CAMP

Air quality on Worcester Park high street has been breaching UK legal limits due to traffic...

We can all do our bit to help clean the air our children breathe...

Climate Labs have run a series of workshops with Cheam Common Infants School.

HERE'S 5 TOP TIPS...



**1. WALK AWAY FROM IT ALL**  
STEER CLEAR, AIR WILL BECOME CLEAR.

Avoid busy roads, if you have no choice, walk as far from the road as you can. Even a few metres can make a difference.



**2. PARK AND STRIDE MORE!**

**IF YOU CAN, AVOID THE JAM**  
If you have to drive, try and park further away on quite back streets.



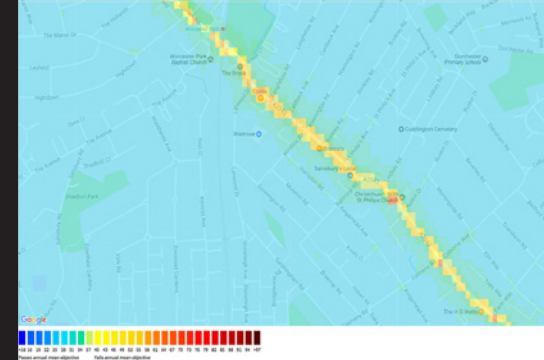
**3. WALK, SCOOT, CYCLE!**

**CAN YOU SHOW YOUR CLEAN AIR FITNESS?**  
If you live locally, why not walk, scoot and cycle more. There's cleaner air on back streets...




**4. PROTECT YOURSELF!**

**EAT FRESH FOOD TO FIGHT THE GRIME**  
keep healthy by eating fresh fruits and vegetables to boost your immune system against air pollution...



**CHECK UPDATES!**  
SEE FOR YOURSELF WHERE THERE'S AIR CRIME  
Apps to check air quality in your area

**AIR POLLUTION MAP**  
[www.londonair.org.uk](http://www.londonair.org.uk)



**CLEAN AIR CAMP**

@ClimateLabs\_UK  
#cleanaircamp

IDENTIFY - IDEATE - INSPIRE



# Partnerships and Engaging Private Sector

17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE DEVELOPMENT GOALS

COMMERCIAL PARTNERS TO DELIVER CSR AND ON COMMUNITY ENGAGEMENT TARGETS

GET INVOLVED!

[ClimateLabs.uk](https://ClimateLabs.uk)

# Design with nature for health and wellbeing

## THE BIOPHILIA PROJECT

**flux**<sup>[x]</sup> FUTURE ARCHITECTS OF INNOVATION

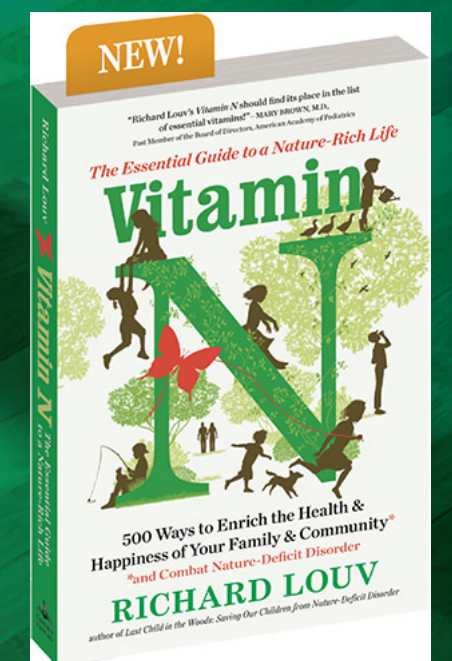




# Biophilia - Human connection with nature

WHY DO WE FEEL GOOD IN THESE SCENIC SPACES OF MOUNTAINS, RIVERS AND GREENERY?

WHY ARE DOCTORS PRESCRIBING GREEN PRESCRIPTIONS AND VITAMIN 'N'?



# Biophilia - Hypothesis

**The biophilia hypothesis suggests that humans possess an innate tendency to seek connections with nature and other forms of life. Edward O. Wilson** introduced and popularized the hypothesis in his book, *Biophilia* (1984).

# Biophilia in Hospitals for healing spaces

for mental health and wellbeing

## ACCELERATED PATIENT RECOVERY

Research has shown that patient recovery rates improve even if they can only view trees from their hospital window.

- Studies of cholecystectomy patients in hospital found that they recovered more quickly with a view of trees and nature from their windows. Ulrich, R.S., 1984. View through a window may influence recovery from GP practice. Science 224, 420-421

- Hospital gardens can provide the following:

- Facilitate stress reduction which helps the body reach a more balanced state

- Help a patient summon up their own inner healing resources

- Help a patient come to terms with an incurable medical condition

- Provide a setting where staff can conduct physical therapy, horticultural therapy, with patients

- Provide staff with a needed retreat from the stress of work

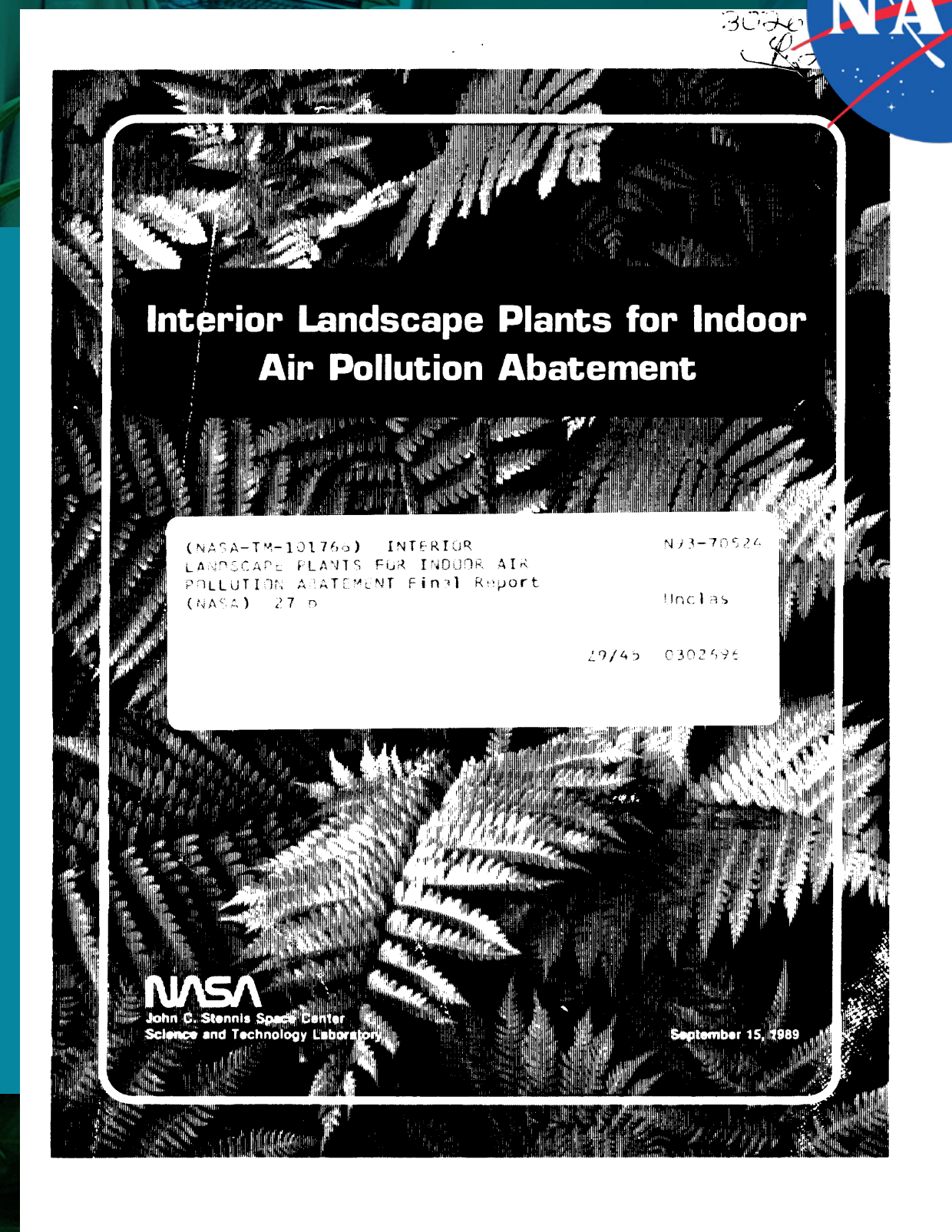
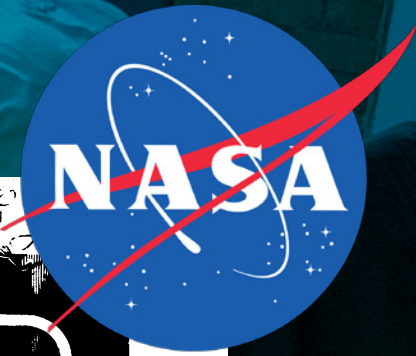
- Provide a relaxed setting for patient/visitor interaction away from the hospital interior

Cooper, M. C., 2005: Healing Gardens in Hospitals, The Interdisciplinary Design and Research e- Publication, 1(1), 1-27. [cabeurl.com/6w](http://cabeurl.com/6w).



# NASA Study on Best Air Cleaning Plants

NASA did a Clean Air Study, that found which plants are effective at removing benzene, formaldehyde, trichloroethylene, xylene, and ammonia from the air – chemicals that have been linked to negative health effects like headaches, dizziness, eye irritation, and others.



# Harvard study on stale air making you less productive



We found that breathing better air led to significantly better decision-making performance among our participants. We saw higher test scores across nine cognitive function domains when workers were exposed to increased ventilation rates, lower levels of chemicals, and lower carbon dioxide. The results showed the biggest improvements in areas that tested how workers used information to make strategic decisions and how they plan, stay prepared, and strategize during crises. These are exactly the skills needed to be productive in the knowledge economy.

Harvard Business Review

WORKSPACES

## Research: Stale Office Air Is Making You Less Productive

by Joseph G. Allen

MARCH 21, 2017

SUMMARY SAVE SHARE COMMENT TEXT SIZE PRINT \$8.95 BUY COPIES



flux<sup>[x]</sup> FUTURE ARCHITECTS OF INNOVATION



<https://hbr.org/2017/03/research-stale-office-air-is-making-you-less-productive>

# Before



flux<sup>[x]</sup> FUTURE ARCHITECTS  
OF INNOVATION



# After



flux<sup>[x]</sup> FUTURE ARCHITECTS  
OF INNOVATION

CLIMATE  
LABS

THE  
PLANTMAN  
— ESTABLISHED 2014 —  
MAKING PLANTS WORK FOR YOU

# Before



flux<sup>[x]</sup> FUTURE ARCHITECTS  
OF INNOVATION

CLIMATE  
LABS

THE  
PLANTMAN  
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MAKING PLANTS WORK FOR YOU



# After



flux<sup>[x]</sup> FUTURE ARCHITECTS  
OF INNOVATION

CLIMATE  
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MAKING PLANTS WORK FOR YOU

# Insights & Impact

## INTERVIEWS

- The plants have boosted moral and moods
- More people use the space its become busier
- Sofa area is become a new meeting space
- Demand for more plants
- Interaction with plants - fostering empathy for nature...
- User defined zoning
- Dynamic layout suitable for changing work requirements

Really transformative!  
I actually came in on a  
Sunday to work!

# Next

## MEASURE AIR QUALITY

- Clear Reduction in CO<sub>2</sub> near plant area
- According to Harvard study improves working conditions for health, wellbeing and productivity





# Thank You

[ClimateLabs.uk](https://ClimateLabs.uk)