



WELL v2

Concept summary

AIR



AIR

ISSUE

In the most recent global burden of disease study, household air pollution was rated as the tenth most important cause of ill health for the world's population.¹





AIR

IMPACT

The World Health Organization estimated that, globally, air pollution contributed to approximately 7 million premature deaths in 2012.²

GOALS + INTENTS

UNSAFE TO BE OUTSIDE



PARTICULATE MATTER

PM_{2.5} & PM₁₀

- PARTICULATE MATTER IS MADE UP OF A NUMBER OF COMPONENTS, INCLUDING ACIDS (SUCH AS NITRATES AND SULFATES), ORGANIC CHEMICALS, METALS, AND SOIL OR DUST PARTICLES.
- FINE PARTICLES (PM_{2.5}) PRIMARILY ORIGINATE VIA DIRECT EMISSIONS FROM COMBUSTION PROCESSES LIKE WOOD AND COAL BURNING, DIESEL AND GASOLINE COMBUSTION IN VEHICLES OR INDUSTRIAL PROCESSES.

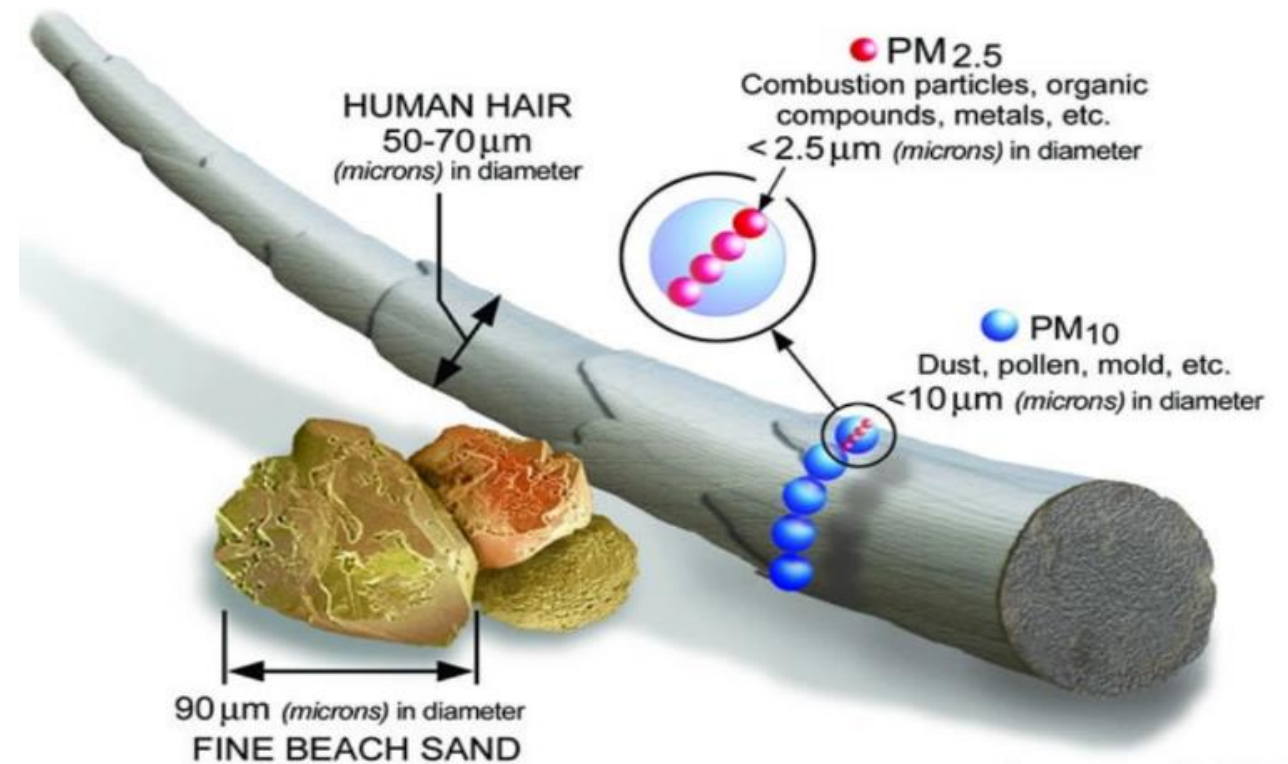
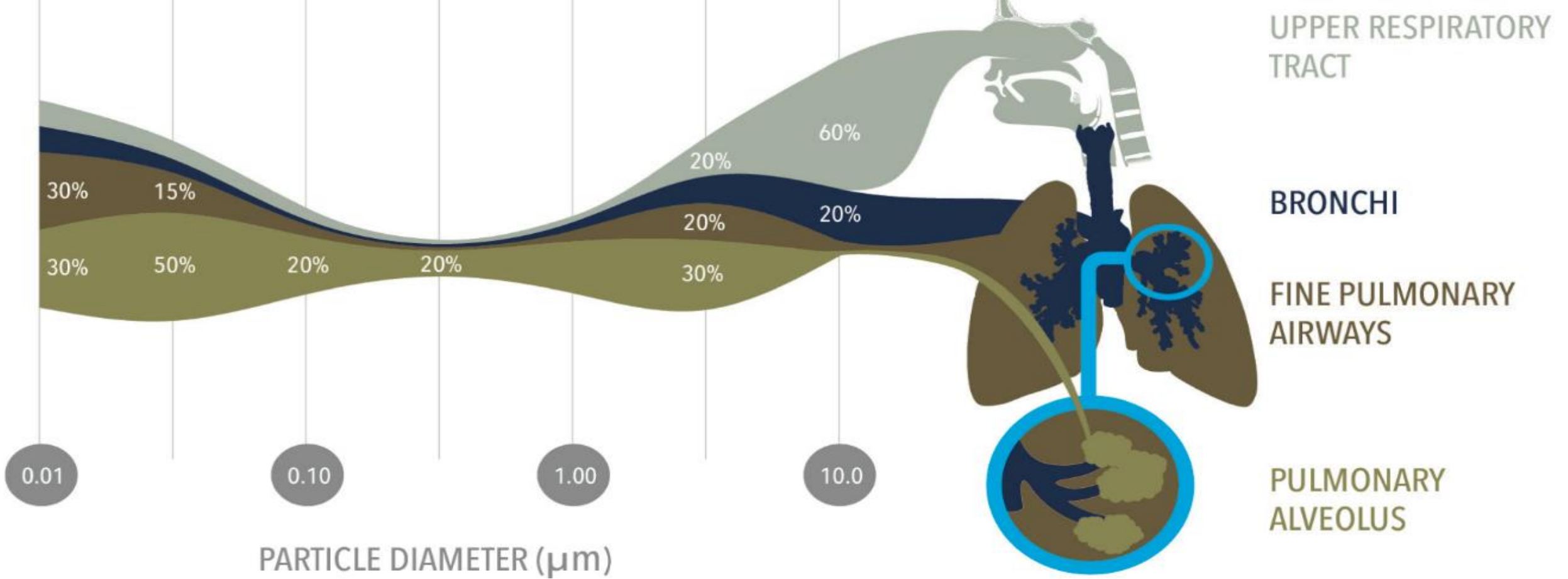


Image courtesy of the U.S. EPA



GOALS + INTENTS

PARTICULATE SIZE

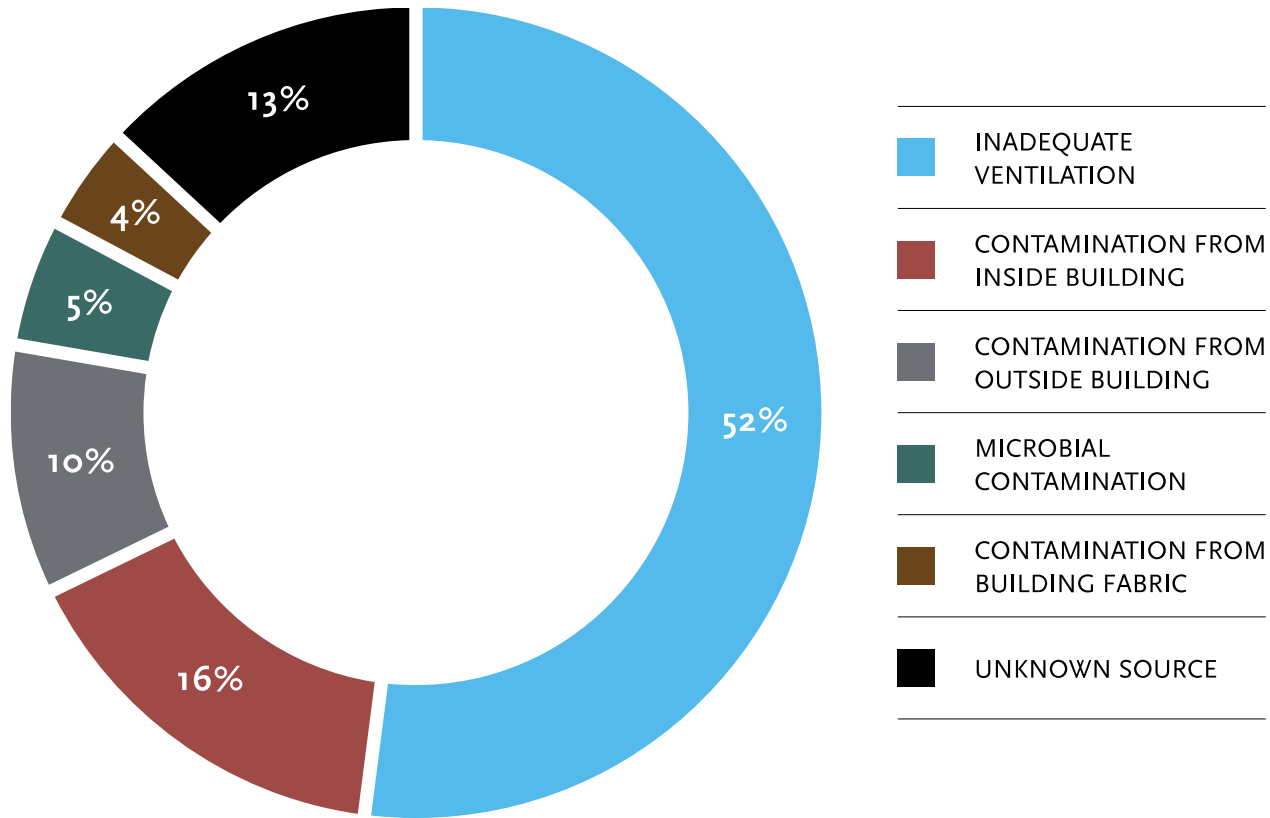
- LARGER PARTICLES ARE MORE EASILY TRAPPED IN THE THICK HAIRS AND MUCOUS IN THE NOSE AND THROAT
- SMALLER PARTICLES LODGE DEEPER INTO THE LUNGS, PASS INTO THE BLOOD STREAM AND AFFECT THE HEART AND LUNGS

CHEMICALS WE BRING INTO OUR ENVIRONMENTS

- CONCENTRATIONS OF SOME **POLLUTION INDICATORS** CAN BE 2-5 TIMES HIGHER INDOORS COMPARED TO OUTDOORS.
- AIR POLLUTION IS THE **NUMBER ONE ENVIRONMENTAL CAUSE** FOR PREMATURE DEATHS IN THE U.S.

GOALS + INTENTS

SOURCES OF INDOOR AIR QUALITY CONCERN



AIR QUALITY CONCERN

AN ESTIMATED **12.7% OF DEATHS** COULD BE AVERTED BY IMPROVING AIR QUALITY WORLDWIDE.

LOWER LEVELS OF AIR POLLUTION WILL REDUCE THE BURDEN OF:

- RESPIRATORY AND CARDIOVASCULAR DISEASE-RELATED ILLNESSES
- HEALTH-CARE COSTS
- LOST WORKER PRODUCTIVITY DUE TO ILLNESS
- AS WELL AS INCREASING LIFE EXPECTANCY AMONG LOCAL POPULATIONS

-WORLD HEALTH ORGANIZATION

GOALS + INTENTS

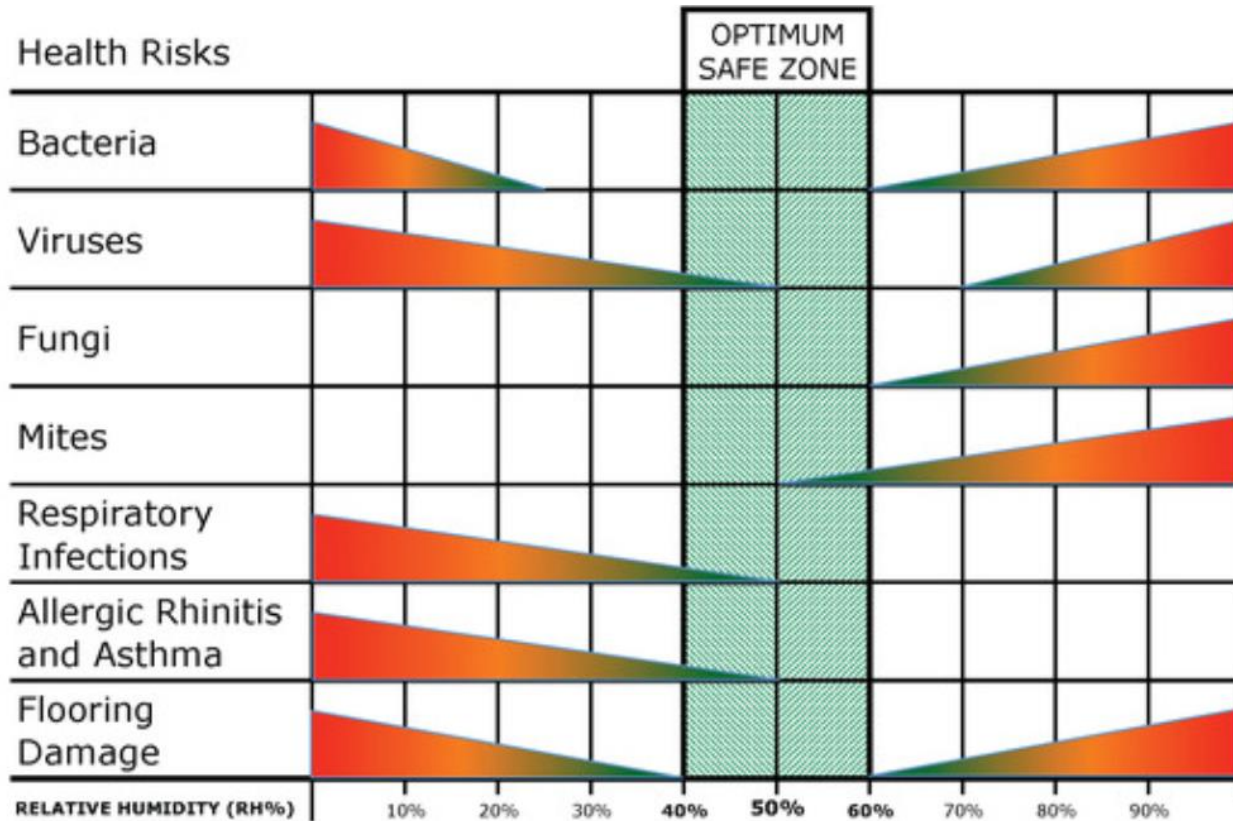
PREVENT SICK BUILDING SYNDROME.





GOALS + INTENTS

OPTIMIZE INDOOR AIR QUALITY BY
SETTING PERFORMANCE THRESHOLDS.

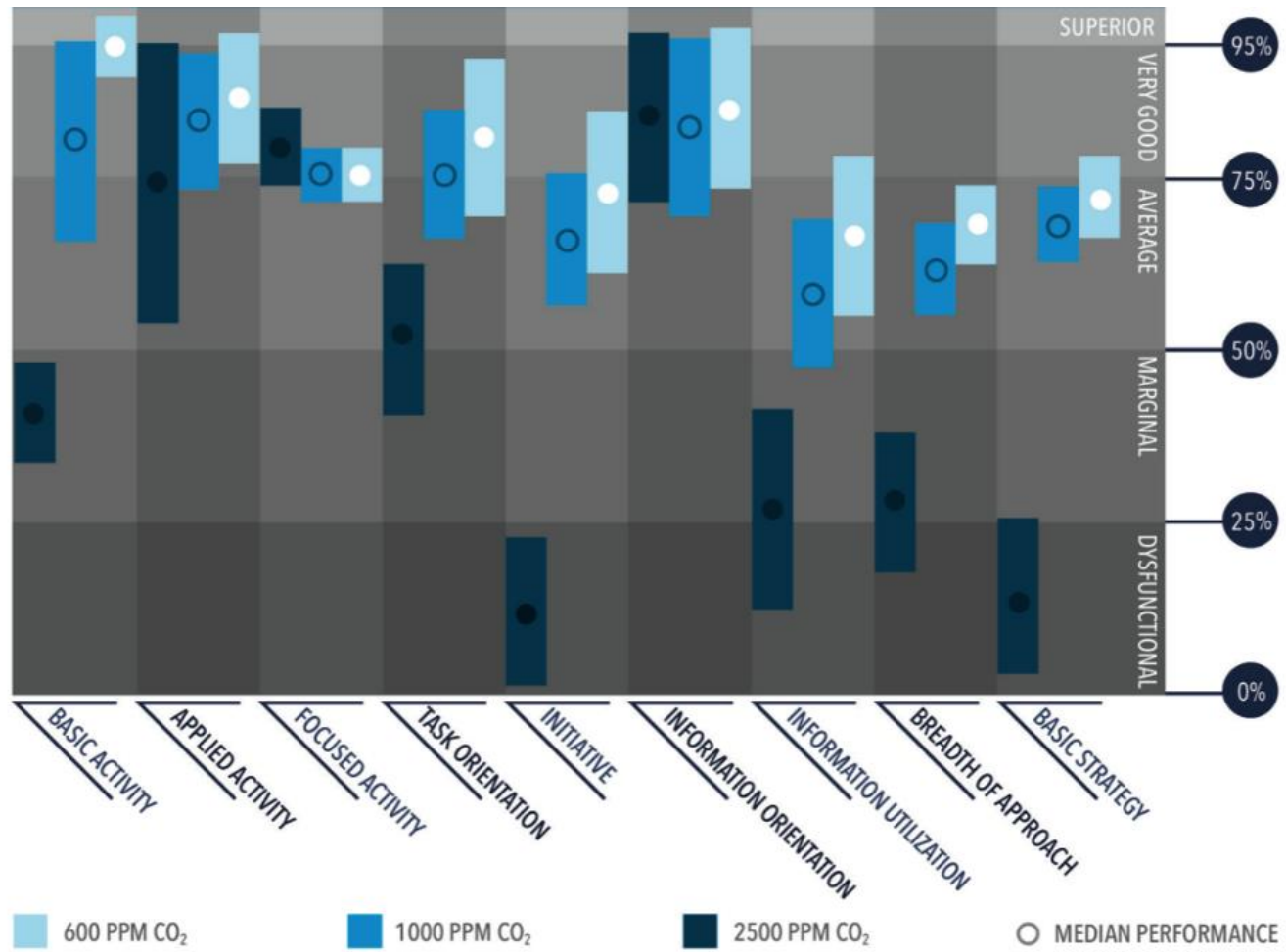


Source: Arundel A, Sterling E, Biggin J, et al - Indirect Health Effects of Relative Humidity in Indoor Environments - Environmental Health Perspectives Vol 65, pp.351-361 1986

GOALS + INTENTS

OPTIMUM RELATIVE HUMIDITY

FOR MINIMIZING ADVERSE HEALTH AFFECTS



IMPACT OF CO₂

ON DECISION MAKING

GOALS + INTENTS

IWBI Air Wellography, Elements of Particulate Matter and Gases: Inorganic Gases
 Is CO₂ an indoor pollutant? Direct effects of low-to-moderate CO₂ concentrations on human decision-making performance. Satish, U, et al. 12, 2012, Environmental Health Perspectives, Vol. 120, pp. 1671-1677.



AIR

The WELL Air concept aims to achieve high levels of indoor air quality across a building's lifetime through diverse strategies that include **performance monitoring, source elimination or reduction, active and passive building design** and **operation strategies** and **human behavior interventions**.

- A01 Fundamental Air Quality*
- A02 Smoke-Free Environment*
- A03 Ventilation Effectiveness*
- A04 Construction Pollution Management*
- A07 Operable Windows
- A08 Air Quality Monitoring and Awareness
- A09 Pollution Infiltration Management
- A10 Combustion Minimization
- A11 Source Separation
- A12 Air Filtration
- A13 Enhanced Air Supply
- A14 Microbe and Mold Control



A01 AIR QUALITY

Provide a basic level of indoor air quality that contributes to the health and well-being of building occupants.

1. Meet thresholds for particulate matter
2. Meet thresholds for organic gases
3. Meet thresholds for inorganic gases
4. Meet thresholds for radon
5. Monitor air parameters

A08 AIR QUALITY MONITORING & AWARENESS

Monitor indoor air quality issues, as well as inform and educate individuals on the quality of the indoor environment.

1. Install indoor air monitors
2. Promote air quality awareness





WELL IN PRACTICE

AIR QUALITY MONITORING

HAWORTH OFFICE & SHOWROOM – SHANGHAI, CHINA



A03 VENTILATION
EFFECTIVENESS

A06 ENHANCED
VENTILATION

A12 AIR FILTRATION

A13 ENHANCED
SUPPLY AIR

VENTILATION + AIR FILTRATION

ISSUE

The majority of ventilation standards specify ventilation rates and other measures intended to provide indoor air quality that is merely “acceptable” to building users. ADD LINE ABT FILTRATION

There are many sources of indoor air pollutants, as well as pathogens emitted by occupants, that can build up to unhealthy levels without clean supply air.

SOLUTIONS

- Upgrade mechanical ventilation systems that increase outdoor air supply while reducing energy usage (ERV+HRVs)
- Air filtration – outdoor, recirculated
 - Selection and installation of adequate media filters
 - Regularly maintain and replace filters



A14 MICROBE & MOLD CONTROL

Reduce mold and bacterial growth within the building mechanical system.

1. Implement ultraviolet treatment for HVAC surfaces – cooling coils and drain pans
2. Maintain UV lamps and inspection protocols



Project Name:
One Bangkok

Owner Name:
Fraser's Property

Location:
Bangkok, Thailand

Size:
3,928,824 sqf

Typology:
WELL Core (Office
+ Residential)

- Almost 4,000,000 square feet registered for WELL Core in One Bangkok (the new heart of business in South East Asia's thriving metropolis).
- Fraser's achieved WELL Gold at their Australian HQ in Sydney.

AIR



WELL IN PRACTICE

Lendlease, Barangaroo Towers in Sydney, Australia



WE ARE WELL

wellcertified.com



EDGE Technologies' EDGE Developments, Europe portfolio



5
Locations



2
Countries



1.358M ft²
(126,195 m²)
Total size

TOTAL IMPACT

4,680
People



STANDOUT ACHIEVEMENT

Key Highlights to celebrate your progress

EDGE achieved WELL Platinum Certification at **2/5** locations and WELL Precertification at **1/5** locations.





EDGE Technologies' EDGE Developments, Europe portfolio

“We believe in a world where life comes first, not second. Given that **healthy and happy people are the cornerstone of a successful organisation**, our buildings should be designed to positively contribute to the health and wellbeing of the people who use our buildings. It all starts with **getting the basics right.**”



AIR QUALITY STRATEGIES

- Fresh air provision by special air filters to get rid of pollutants and particulate matter.
- Air quality sensors, measuring temperature, humidity, and CO2 at all times.
- Providing double the amount of air than required by building code.
- Providing constant information, by sharing building performance and allowing adaptation, where possible, via a building app.

AIR



WELL IN PRACTICE

AIR QUALITY MONITORING

HAWORTH OFFICE & SHOWROOM – SHANGHAI, CHINA

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