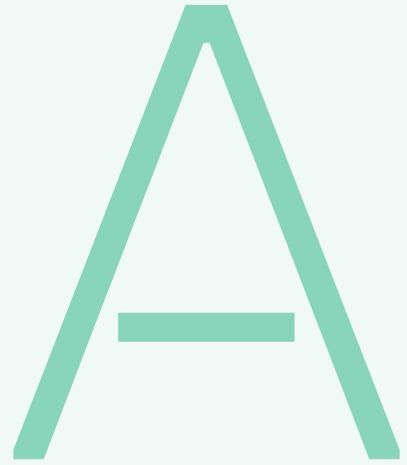


The AirRated™ Overview



2020

Introduction to AirRated™
and AirScore™



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The Global Benchmark for Indoor Air Quality

AirRated™ delivers an easily recognisable, international benchmark for Indoor Air Quality (IAQ). The certification is underpinned by leading medical and scientific research and industry best practice guidelines.

Outdoor air quality awareness has improved greatly in recent decades, but there remains a distinct lack of awareness regarding IAQ. The quality of indoor air has declined significantly due to buildings becoming increasingly airtight in order to improve energy efficiency. Other factors affecting IAQ include the introduction of many new materials, and sources of indoor pollution. We spend up to 90% [1] of our lives indoors, making the quality of indoor air a top priority as an environmental issue, with far-reaching implications for human health.

An AirScore™ provides a reliable measure for IAQ, giving an industry leading analysis of the indoor health of your building.

AirRated Vision

“Our aim is to create an internationally accepted industry standard for measuring and classifying air quality across all use classes in the built environment. An AirScore, the AirRated Certification, is an easily recognisable benchmark and a reliable measure for IAQ. At AirRated, we aim to support our clients in promoting healthy environments by raising awareness of IAQ and providing strategies for air quality improvement.”



Record

Map

Quantify

Enhance

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Wellness Market

Market Trend

Forward-thinking property owners are starting to look at ways to future-proof their portfolios. Through alignment with global standards and accreditations, AirRated has the unique ability to position itself to compliment all-encompassing, building-wide standards.

Increasingly, the industry is also recognising the importance of well-being initiatives in real estate, from both a Corporate Social Responsibility (CSR) and Environmental, Social and Governance (ESG) perspective, as well as the value-add proposition:

“In building, wellness is the new sustainability. The goal is to make our built environment more physically healthy for people.”

-Jonathan Penndorf, AIA

“There is clearly an opportunity for organisations to begin to think differently and use their physical premises for competitive gain. This is true from investors right through to occupiers, whether companies are trying to command a higher price for a high-performing building or looking to take the kind of space needed to help drive business success.”

-UKGBC

“This [healthy buildings] is becoming increasingly relevant here in the UK as it is likely that buildings that do not meet market expectations in the future will face a ‘brown discount’.”

-Savills

AirRated alignment with global standards

AirRated is an annual certification that positions itself as a precursor for larger, building-wide certifications, such as the WELL Building Standard and Fitwel, to act as a steppingstone and complementary accreditation.

Evaluating one of the most important components for health, productivity and wellbeing (air), we are able to fast-track the accreditation process whilst making the certification simple and cost effective to achieve.



“There has never been a more important time than now to focus on Indoor Air Quality. This is arguably the single greatest determinant of our overall health and well-being in buildings, and it is paramount that we begin to map and quantify this in order to develop better strategies for improving Indoor Air Quality, creating better living, working and leisure environments.”

-Olga Turner Baker, CEO

AirScore™ Overview: Process

The three-week AirRated environmental survey gathers information about your building's IAQ using high specification sensor technology.

Outdoor data from local authority and government-run in-situ monitoring stations is also gathered, analysed and taken into consideration, as this heavily influences IAQ.

Once collected, our in-house environmental scientists test these datasets against the AirRated Scoring System, to generate an AirScore.

An AirScore is comprised of five fundamental parameters. The three most impactful (PM2.5, CO₂ and TVOCs) must each meet a mandatory minimum threshold requirement for 95% of survey hours in order to pass and become Certified.



PM2.5

CO₂

TVOCs



Temperature



Humidity

Five AirScore Parameters

PM2.5

Carbon Dioxide (CO₂)

Total Volatile Organic Compounds (TVOCs)

Temperature

Humidity

AirRated Certifications

Platinum 9.0 – 10

Gold 8.5 – 8.9

Silver 8.1 – 8.4

Certified 6.0 – 8.0

PM2.5

What it is:

Particulate Matter 2.5 (PM2.5) is defined as fine particulate matter with a diameter less than 2.5 μm .

Sources:

The main indoor sources of PM2.5 are combustion (e.g. heating and cooking), mechanical processes and biological particles.

Outdoor sources, both anthropogenic and natural, heavily influence indoor PM2.5 concentration.

The Impacts:

→ Fine particles can penetrate into the lungs and bloodstream. [2]

→ Short term exposure can cause irritation of the airways, coughing and cardiovascular problems. Long term exposure can cause premature death from heart and lung diseases such as cancer. [3]

→ There is said to be no safe level of PM2.5, although there is a guideline set by the World Health Organisation (WHO) of $10\mu\text{g}/\text{m}^3$. [4]

→ For every $10\mu\text{g}/\text{m}^3$ increase in levels of PM2.5 above the WHO guideline, life expectancy is seen to be lowered by one year. [4]



CO₂

What it is:

Carbon Dioxide (CO₂) is a naturally occurring, colourless, odourless gas which makes up 0.04% (400ppm) of air.

Sources:

Common indoor CO₂ sources are human and animal respiration and combustion. Occupied indoor concentrations of CO₂ are significantly higher than outdoor concentrations.

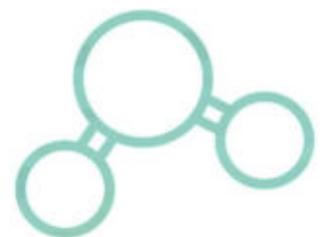
The Impacts:

→ CO₂ has been seen to cause adverse health effects at concentrations as low as 1000ppm. [5]

→ There is a recognised association between elevated indoor CO₂ levels and increases in Sick Building Syndrome (SBS) symptoms. [6]

→ Elevated levels of CO₂ can cause up to 11% reduction in productivity. Studies show this is a result of impaired cognitive function, with decision making ability and information usage being most significantly affected. [7]

→ High indoor CO₂ levels have been seen to aggravate respiratory problems and can cause stress, kidney calcification and bone demineralisation. [8]



TVOCs

What it is:

Total Volatile Organic Compounds (TVOCs) is a collective term used to define a group of common Volatile Organic Compounds (VOCs).

Sources:

VOCs comprise a wide range of chemicals, which may be emitted over periods of weeks or years from construction and furnishing products. Examples include sealants, paints, wall and floor coverings, cleaning products, air fresheners and air-cooling refrigerants for building services.

The Impacts:

→ Short-term exposure to elevated levels of VOCs causes adverse effects such as eye, and respiratory tract irritation, headaches, dizziness, visual disorders and memory impairment. [9]

→ There is association between higher concentrations of VOCs in indoor air with allergies, asthma, and poor respiratory health. [10]

→ Long- term health effects include prolonged eye, nose and throat irritation, as well as liver, kidney and central nervous system damage and even cancer. [9]

→ Formaldehyde and benzene are considered by many authorities to be proven or probable human carcinogens. [10]



Temperature

What it is:

Room temperature is the range of air temperature that most people prefer for indoor settings which feel comfortable when wearing typical indoor clothing.

Sources:

Indoor temperature is affected by many variables, from occupant density to mechanical ventilation effectiveness and room temperature set point.

The Impacts:

→ Poor thermal comfort can contribute to Sick Building Syndrome (SBS) symptoms, which include headaches, itchy skin, dry or sore eyes, blocked or runny noses and rashes. [11]

→ Research indicates that performance of office work is maximised at 21°C to 22°C and for every degree above 25°C productivity is seen to decline by 2%. [12]

→ For every degree below 19°C productivity is seen to drop by 2% with an associated uplift in error rate. [13]



Humidity

What it is:

Relative humidity is the concentration of water vapour present in the air, expressed as a percentage.

Sources:

Moisture in the air arises from respiration and activities, such as cooking and washing. Humidity directly affects occupant health and comfort, and the presence of biological pollutants such as mould spores.

The Impacts:

→ Low humidity (<30%) causes eyes and skin to become dry and irritated and can aggravate conditions such as asthma. It also increases the risk of developing common colds, flu and viruses. [14]

→ High humidity (>60%) can impact feelings of lethargy and exacerbate allergies and respiratory diseases. [14]

→ High levels can also affect the concentration of Volatile Organic Compounds (VOCs). [15]

→ Incidence of absenteeism due to respiratory infections was found to be higher among people working or living in environments with low or high relative humidities. [14]



Wellness Benefits - Commercial

There are three categories of core business benefits for developers and owners.

Market Differentiation and Value:

→ A survey performed by the World Green Building Council in 2016 reported that:

- 'Healthy' buildings were worth at least 7% more than standard ones
- 46% of respondents reported they were easier to lease
- 28% said they could command premium rent. [16]

Talent Attraction and Retention benefits Include:

→ Enhancing your asset's and portfolio's brand.

→ Attracting occupiers based on the improved performance & health benefits of your building. The Edmans Research Group found that companies with high employee satisfaction outperformed their competitors by 2.3-3.8% per year. [17]

Compliance:

→ In January 2020 the British Engineering Services Association (BESA) urged the government to bring in radical indoor air quality legislation. This would make measuring and monitoring Indoor Air Quality in buildings mandatory. [18]

→ There is an opportunity to engage with local planning authorities and align your building or portfolio with their clean air initiatives.



Wellness Benefits - Residential

There are three categories of core benefits for residential developers, owners and their residents.

The Buyer's Needs:

→ 90% of renters and buyers said they want a home that doesn't compromise health and wellbeing. [19]

→ 1/3 of renters and buyers are willing to pay more for healthy homes. [19]

→ The number of renters and buyers that are willing to pay more for healthy homes is significantly higher than the number of those willing to pay more for a home that is just energy efficient or environmentally friendly. [19]

Market Differentiation and Value:

→ An extensive survey performed by the World Green Building Council in 2016 reported that:

- 'Healthy' buildings were worth at least 7% more than standard ones
- 46% of respondents reported they were easier to lease
- 28% said they could command premium rent. [16]

Compliance:

→ In January 2020 the British Engineering Services Association (BESA) urged the government to bring in radical indoor air quality legislation. This would make measuring and monitoring Indoor Air Quality in buildings mandatory. [18]



Wellness Benefits - Occupiers

There are three categories of core business benefits for occupiers.

Market Differentiation and Value:

→ An extensive survey performed by the World Green Building Council in 2016 reported that:

- 'Healthy' buildings were worth at least 7% more than standard ones
- 46% of respondents reported they were easier to lease
- 28% said they could command premium rent. [16]

Talent Attraction and Retention:

→ 87% of employees said they consider health and well-being offerings when choosing an employer. [20]

→ The Edmans Research Group found that companies with high employee satisfaction outperformed their competitors by 2.3-3.8% per year. [17]

→ Physical and mental wellbeing is a top priority for millennials, who currently make up 35% of the UK workforce, as well as many others who are becoming increasingly conscious of their health. [21]

Productivity and Profit

→ 70% of employees believe poor air quality in their workplace is having a negative effect on their day-to-day productivity and well-being. [22]

→ Improved ventilation with lower CO2 levels can boost productivity of employees by 11%. [7]

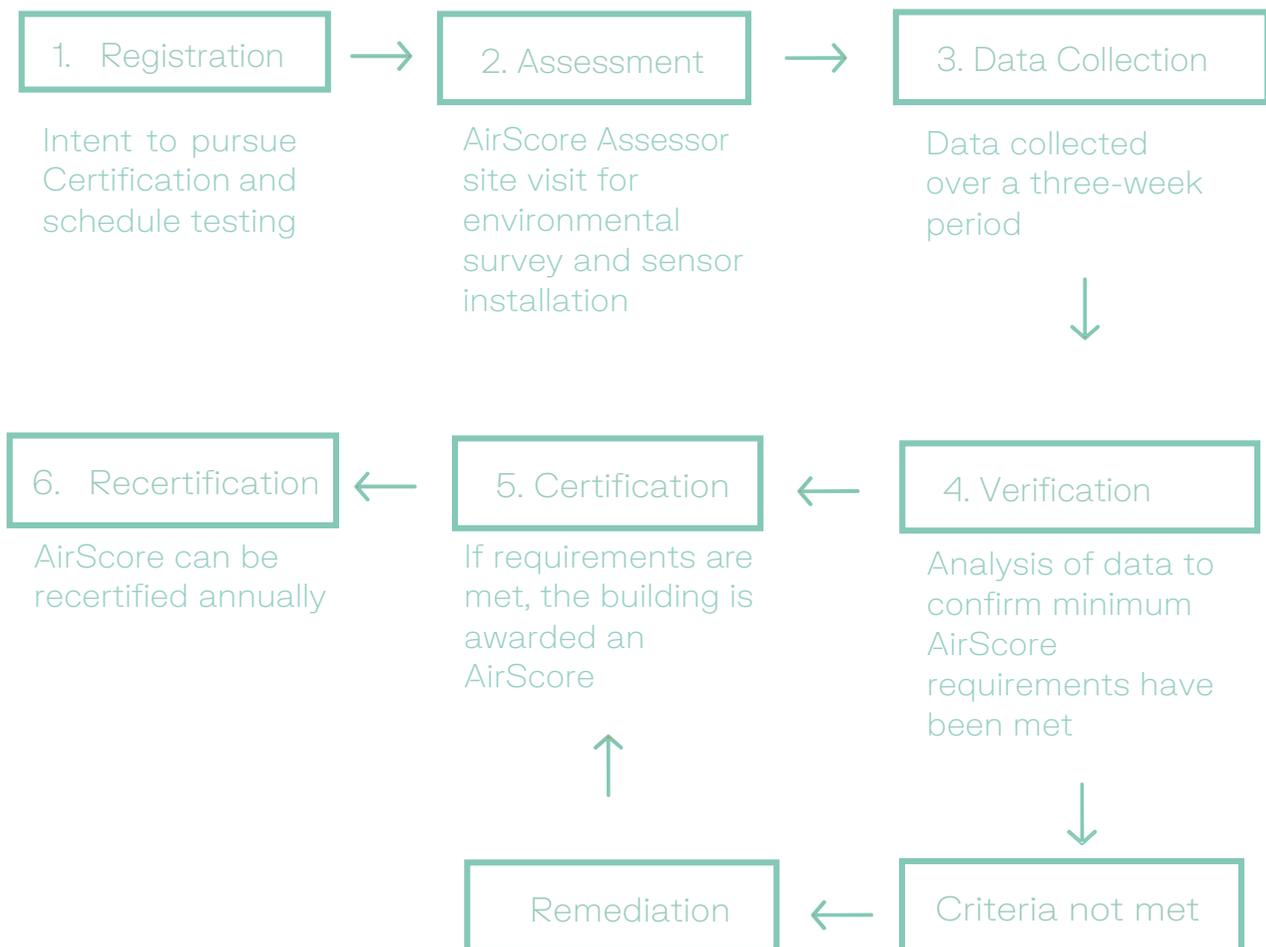
→ 66% of companies see a Return on Investment (ROI) on their health and performance initiatives. [23]



Customer Journey

An AirRated consultant will clearly explain the certification process at an introductory meeting and ensure clear communication throughout the certification process.

The AirRated™ certification pathway is highlighted below:



Certification Fees

Commercial and public sector projects:

- £7,500 +VAT base price
- An additional £0.05 per sq. ft. thereafter

Residential:

- £7,500 + £0.05 per square foot
- An additional £750 per amenity room
- Buildings with multiple cores will be charged an additional £2,500 per core

Design and Operation (D&O):

This additional certification fee is available for pre-completion refurbishment and development schemes. Based on a scheme's proposed specifications, our technical team are able to review and provide an "AirScore Design and Operation" Certification. After practical completion and upon successful completion of air quality monitoring, a conventional AirScore is then awarded.

- Up to £7,500 +VAT (dependent on RIBA Stage), one-off cost

Remediation:

We offer a bespoke remediation package to make the required physical and operational alterations so that your asset can achieve AirRated Certification.



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