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Master the Air, Maximize Your Day

Clean Air, Better Life: The Power of Indoor Air

Indoor air quality (IAQ) is a critical determinant of human health, cognitive performance, and overall well-being, particularly in educational settings where children spend extended periods. Extensive research has established correlations between poor IAQ and adverse health outcomes, including respiratory diseases, allergic reactions, and diminished cognitive function, highlighting the necessity of continuous air quality monitoring.

airbeld®, developed by **EMBIO Diagnostics**, is an advanced, real-time IAQ monitoring solution designed to provide data-driven insights for optimizing indoor environments. By continuously tracking indoor pollutants, airbeld® delivers real-time data to support informed decision-making, fostering healthier, more sustainable spaces and enhancing occupants' well-being, productivity, and comfort.

Breathing Smart: IAQ as a Key to Well-Being

Recent research underscores the significant impact of indoor air quality (IAQ) on human health, cognitive function, and overall productivity. In schools, poor IAQ has been linked to respiratory illnesses, allergies, and decreased academic performance. Similarly, in hospitals, inadequate air quality can exacerbate patient conditions and increase the risk of airborne disease transmission. Offices, hotels, shopping centers, and other enclosed spaces also face IAQ challenges, as pollutants from Heating, Ventilation, and Air Conditioning (HVAC) systems, building materials, and occupant activities can compromise well-being and efficiency.

With initiatives such as the installation of air conditioning systems in schools and other facilities, it is critical to ensure that these systems do not unintentionally degrade air quality by recirculating contaminants. airbeld™, offers real-time, data-driven IAQ monitoring, enabling decision-makers to optimize ventilation, balance thermal comfort with air purity, and create healthier indoor environments across various sectors.

THE UNSEEN RISK

The Truth About Indoor Air Quality

Every breath we take indoors carries invisible risks. Homes, offices, schools, and hospitals are often filled with harmful pollutants, allergens, and toxins.

According to the World Health Organization (WHO), over 4.3 million premature deaths annually are linked to air pollution-related illnesses.

4.3M
premature deaths

90%
of our time spent indoors

We spend 90% of our time indoors, yet indoor air quality (IAQ) can be 2 to 5 times worse than outdoor air. Poor IAQ leads to:

- Respiratory diseases and cognitive impairment
- Increased absenteeism and reduced workplace productivity
- Higher operational and healthcare costs

The Impact of Poor Indoor Air on Health and Productivity

Health Effects:

- Poor IAQ increases the risk of **Sick Building Syndrome (SBS)**, impacting employee comfort and health.

Economic Consequences:

- Poor IAQ results in **billions in lost productivity.**

Business Importance:

- Improving IAQ reduces energy costs, enhances employee health and productivity, and ensures compliance with regulations.

The Clean Air Challenge: Overcoming IAQ Barriers

Maintaining good indoor air quality (IAQ) is a complex challenge shaped by various environmental, structural, and behavioral elements. While there is increasing recognition of the health and well-being risks associated with air pollution, there are still significant obstacles to effectively managing IAQ in settings like schools, offices, hospitals, hotels, and other indoor environments.

Many buildings rely **on outdated air quality monitoring systems**, making it difficult to detect pollutants like carbon dioxide (CO_2), airborne toxins, and particulate matter (PM) in real-time, which can impact occupants' health and productivity. **Poor ventilation** in densely populated areas such as classrooms, offices, and hospitals can lead to the buildup of indoor pollutants, while common contaminants like volatile organic compounds (VOCs), mold, and bacteria accumulate without proper filtration. Additionally, prioritizing energy efficiency over ventilation can trap pollutants indoors, further degrading air quality.

A lack of awareness and adherence to IAQ guidelines also contributes to poor conditions, as many organizations fail to implement best practices due to insufficient education, training, or enforcement.


Breathe Better,
Live Better
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Designed & manufactured by embio diagnostics
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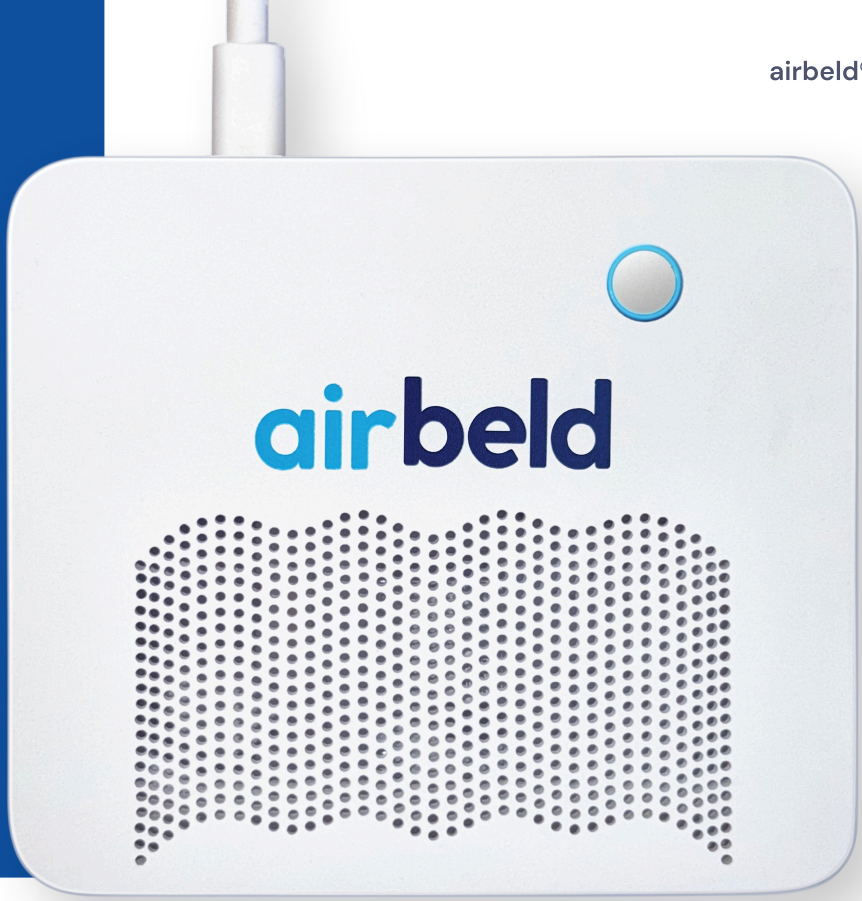


airbeld: The Smart Solution for Healthier Indoor Spaces

At **EMBIO Diagnostics**, we are committed to **real-time air quality monitoring** that safeguards health, drives productivity, and optimizes indoor environments. **airbeld®** is our innovative solution, offering advanced sensors and AI-driven analytics for healthier, more sustainable spaces. As a European deep-tech company rooted in Cyprus, we believe productivity begins with control — control of the air we breathe, the spaces we occupy, and the data we rely on.

As regulatory bodies worldwide increasingly emphasize the importance of indoor air quality, businesses must adapt to evolving standards such as the **WELL Building Standard, RESET Certification, and WHO IAQ Guidelines**. EMBIO Diagnostics, as a proud Cornerstone Member of the International WELL Building Institute (IWBI), is actively contributing to the global movement for healthier indoor environments. Through its innovative air quality solution, airbeld®, EMBIO ensures seamless compliance with these frameworks—empowering organizations to proactively meet air quality benchmarks, enhance workplace safety, and align with environmental sustainability goals.

Our Mission

Breathe Better, Live Better

The quality of our indoor environments directly impacts health, focus, and productivity. Poor indoor air quality can reduce productivity by up to 9%, contribute to cognitive decline, and lead to significant financial losses.

In the U.S., sick leave related to poor air quality costs approximately $225.8 billion annually, while Europe faces an estimated €100 billion in losses due to decreased productivity and health-related expenses.

Our mission is to empower individuals and organizations to take control of their environment, creating healthier and more efficient spaces.

With airbeld®, we bring real-time monitoring, smart alerts, and AI-driven insights into schools, hospitals, offices, and hotels. This technology is not just about measurement; it's about enabling healthier decisions, preventing illness, and ultimately creating more resilient communities.

Key Features of airbeld®

Real-time pollutant detection
Instantly detects pollutants and harmful airborne substances (e.g. CO_2, PM, VOCs), enhancing the well-being of staff and visitors.

Secure data compliance for the new era of cybersecurity since EMBIO handles the production of hardware and software.

AI-driven insights for actionable air quality improvements.

WELL certification is a roadmap for organizations looking to advance human health and well-being in a single asset or location.

User-friendly dashboard & weekly reports at a single click.

Smart notifications tailored to different environments.

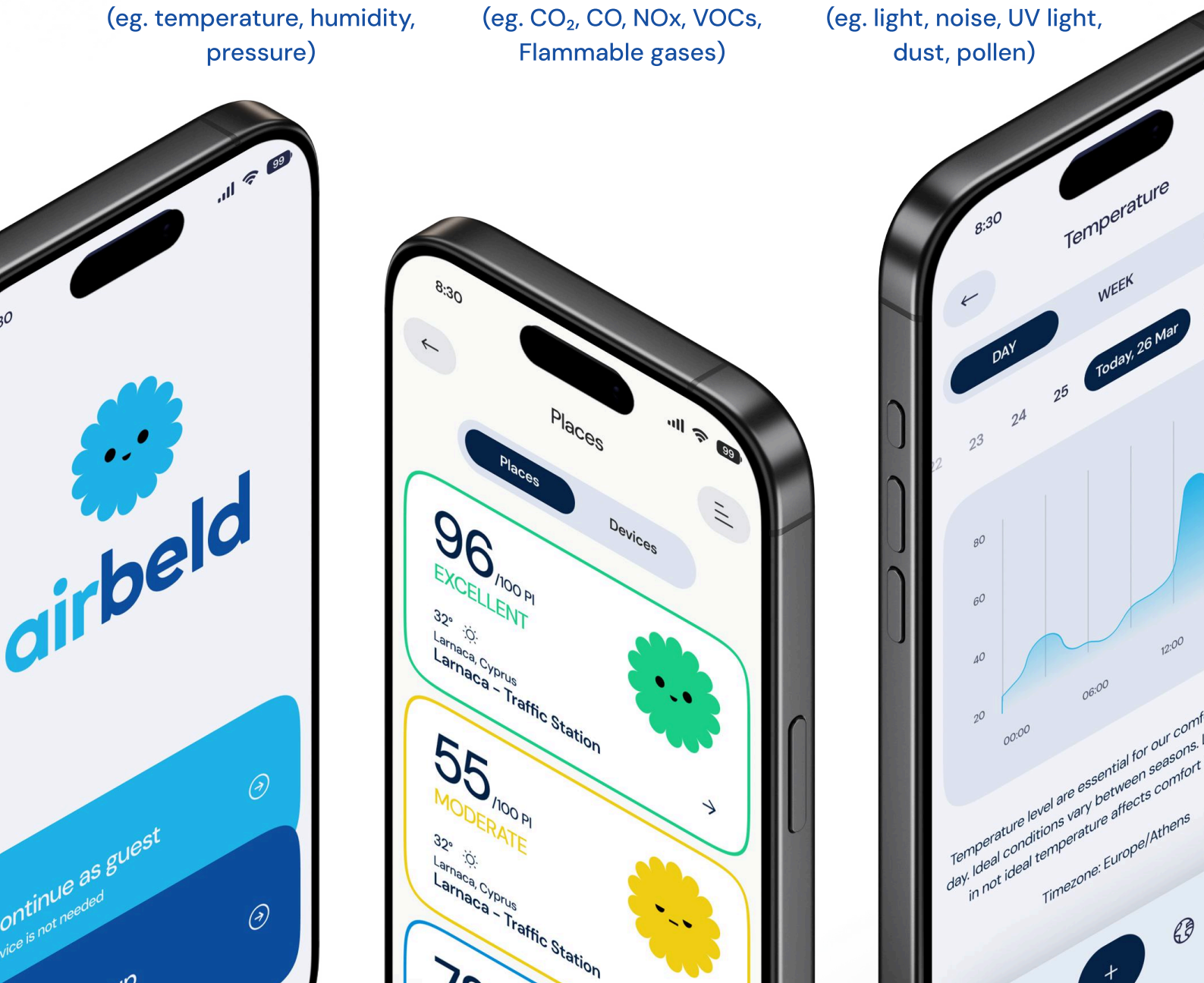
Designed by EMBIO: A trusted solution for optimizing indoor air quality.

What we Detect

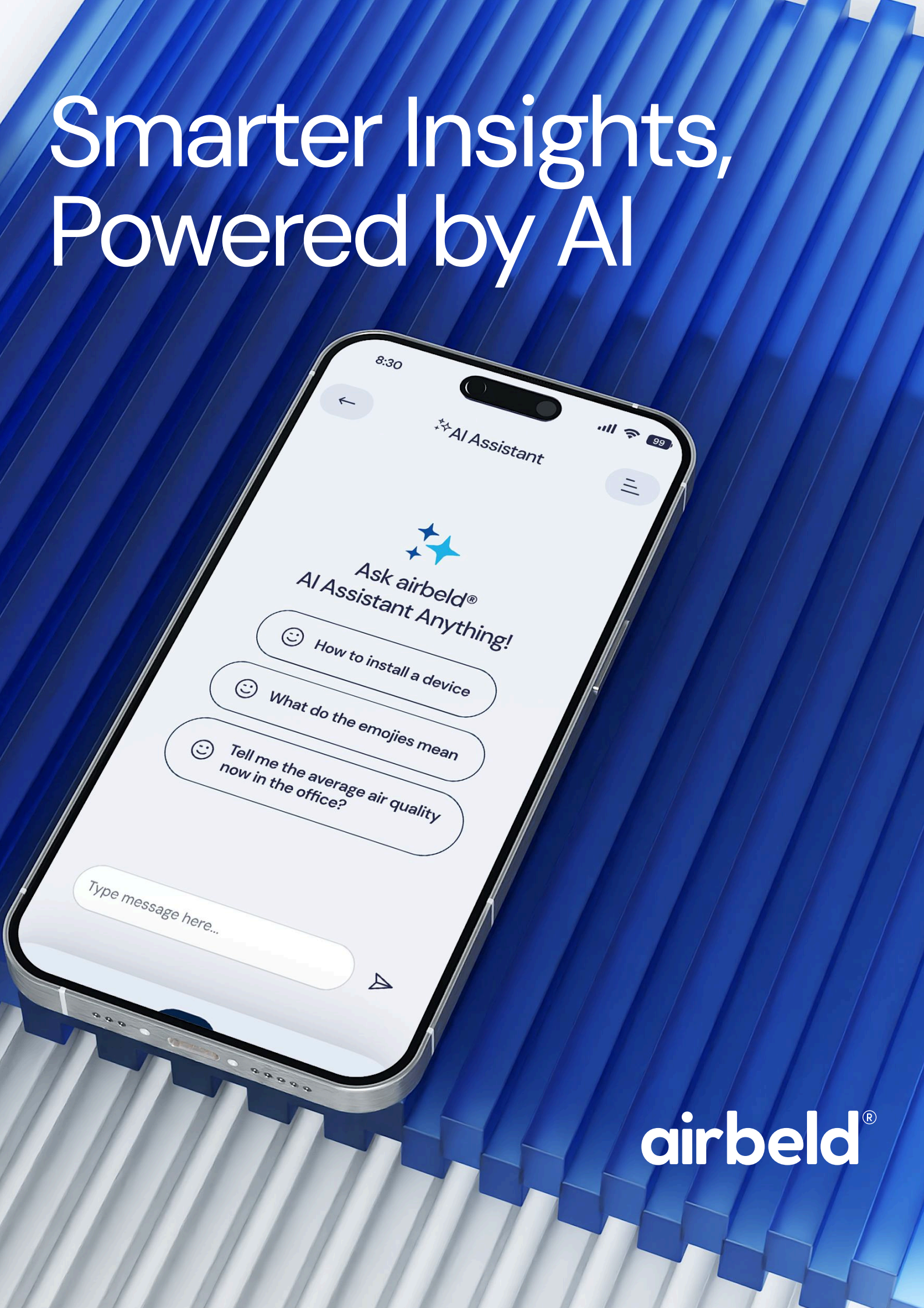
Environmental Conditions
(eg. temperature, humidity, pressure)

Gaseous Pollutants
(eg. CO_2, CO, NOx, VOCs, Flammable gases)

Physical Pollutants
(eg. light, noise, UV light, dust, pollen)



Smarter Insights, Powered by AI



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How Indoor Air Quality Affects Us

HOSPITALITY VENUES

77% of customers decide where to stay based on proof about the hotel's IAQ.

EDUCATIONAL CENTERS

91% of parents believe that the quality of the air students breathe impacts their health.

80% of parents believe that the quality of the air students breath impacts their learning.

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HEALTH FACILITIES

42% of the patients are dissatisfied with the IAQ.

31% of the visitors are dissatisfied with the IAQ.

OTHER BUILDINGS

74% of people are complaining about inadequate ventilation leading to stuffiness and/or odors.

40% of the buildings' energy consumption is for HVAC.

SHOPPING CENTERS

73% of all people point to customer experience as an important factor in their decisions.

32% of customers will walk away from a brand they love after just one bad experience.

OFFICES

70% of office employees believe that their productivity and wellbeing is affected by poor IAQ conditions.

54% of office employees find that the healthiness of the building affects their mental wellbeing.

Improvements in Medical Facilities:

- **Controls infections:** Helps stop the spread of diseases.
- **Supports recovery:** Helps patients heal faster. Poor air quality can lead to Sick Building Syndrome (SBS), making it harder for patients to recover.
- **Improves staff well-being:** Keeps hospital workers healthier.
- **Reduce fatigue:** Helps staff feel less tired.
- **Ensures compliance:** Meets health and safety rules.

Improvements in Workspaces:

- **Enhanced Well-being:** Promotes employee health and comfort.
- **Boosted Energy & Focus:** Cleaner air helps reduce fatigue and improve concentration.
- **Sharper Thinking:** Higher indoor air quality contributes to a 61% increase in cognitive function.
- **Increased Productivity:** Optimized IAQ enhances performance by 6-9%, leading to greater efficiency.
- **Regulatory Excellence:** Ensures compliance with workplace safety standards.

Helping Schools to Improve by promoting:

- **Better Student Performance:** Research shows that better indoor air quality can boost performance and productivity by up to 8%. With children spending 900 hours in school annually, 60% of European school buildings fall short of healthy standards, making this a key policy challenge.
- **Fewer Absences:** Cleaner air reduces the spread of allergens and illnesses, leading to 13.5% fewer student absences. Ensures the well-being of both students and school staff.
- **Eco-Friendly Schools:** Schools can cut energy costs by $0.10 to $0.15 per square foot with better managed HVAC systems.

Enhancing Guest Comfort, Health, and Enjoyment in Hospitality:

- **Improve guest experience:** Create a refreshing atmosphere for indoor relaxation and activities.
- **Get positive reviews:** Boost guest satisfaction and positive reviews.
- **Excel in travel evaluations:** Score high in travel company ratings.
- **Maintain high hygiene** standards to meet and exceed expectations.
- **Embrace digital innovation:** Utilize smart air quality monitoring for a premium hospitality experience.

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DETECT EVERYWHERE

Technology Transforming Health & Well-Being

By accurately assessing exposure to harmful pollutants, IAQ monitoring enables data-driven interventions that enhance ventilation, pollution control, and overall air management. This proactive approach not only protects human health but also improves energy efficiency in buildings and supports sustainable urban development.

Furthermore, reliable IAQ data empowers policymakers to establish effective regulations, promoting transparency and equity in indoor air quality management. EMBIO's mission aligns with WELL Building Standards, ESG commitments, and EU sustainability goals, ensuring healthier, future-proof indoor environments.

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The Future of Breathing: *Live Better with Better IAQ*

With airbeld®, real-time air quality management is accessible, ensuring cleaner air for all. Take control today—optimize your indoor environment for a healthier, more sustainable future.

Suggested References

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