

STROBILO IMPACT

Intro.

This guide provides an in-depth look at all the features and functionalities of **Strobilo Impact,** Strobilo’s **unique dashboard.**

Inside, you'll find useful instructions for **Login** procedures, **Homepage** navigation, **KPI selection** and **analysis**, and interactions.

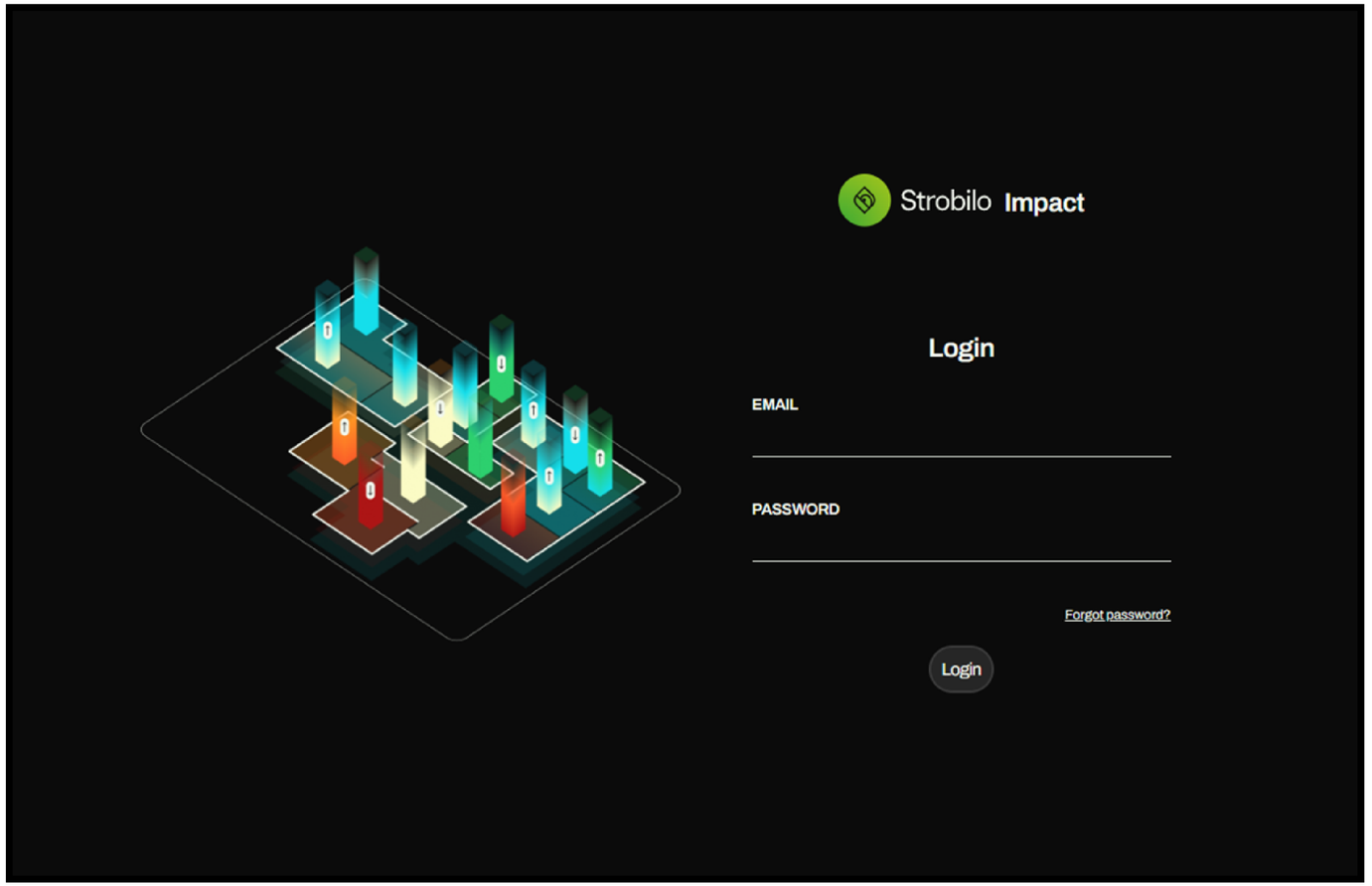
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Login.

Let’s start from the beginning.

To access the dashboard, simply insert your company’s credentials (**e-mail address** and **password**) in Strobilo Impact’s secure Login form.

This step ensures your data **are protected** and not visible to other companies using Impact.

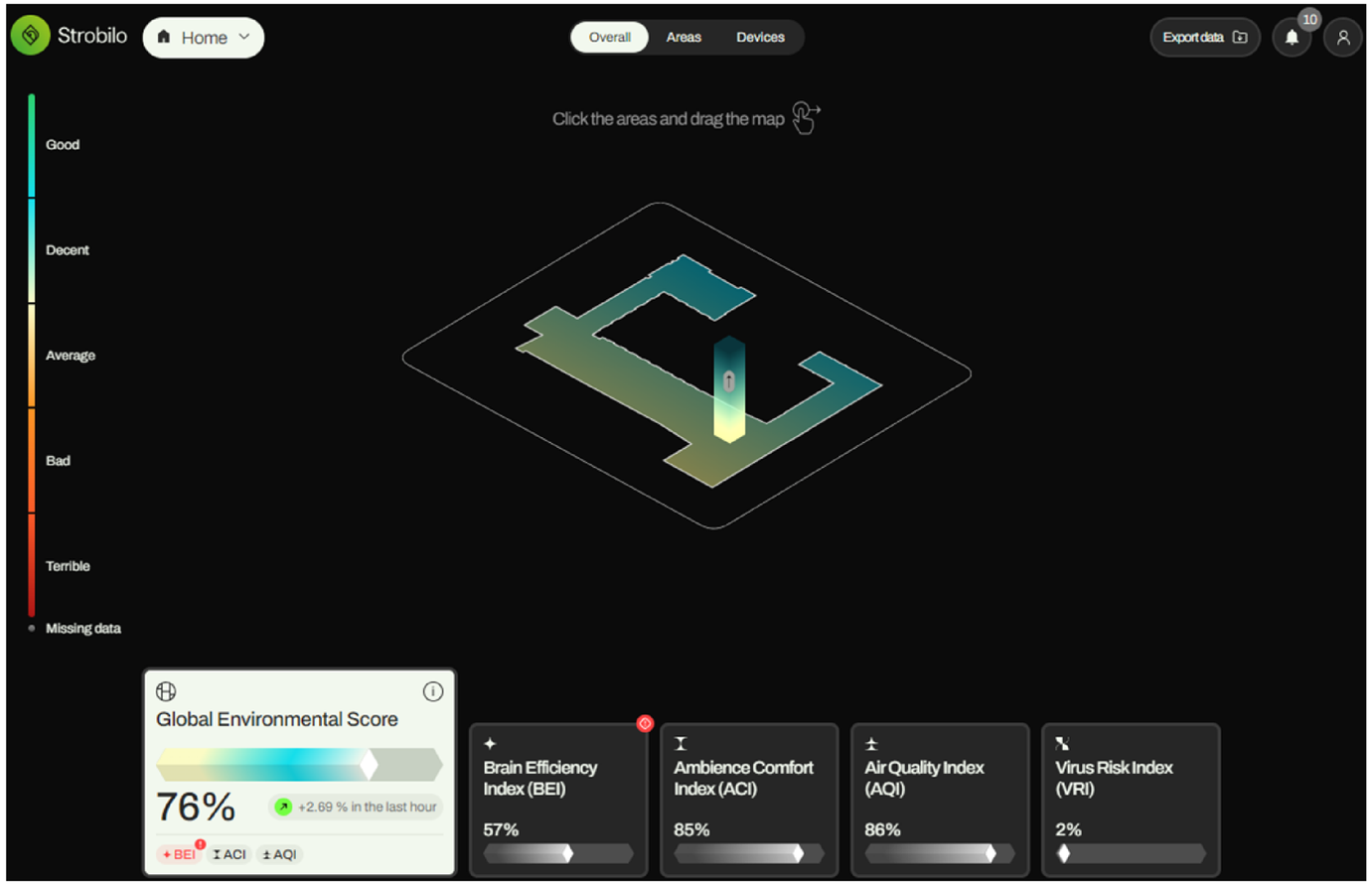


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Homepage.

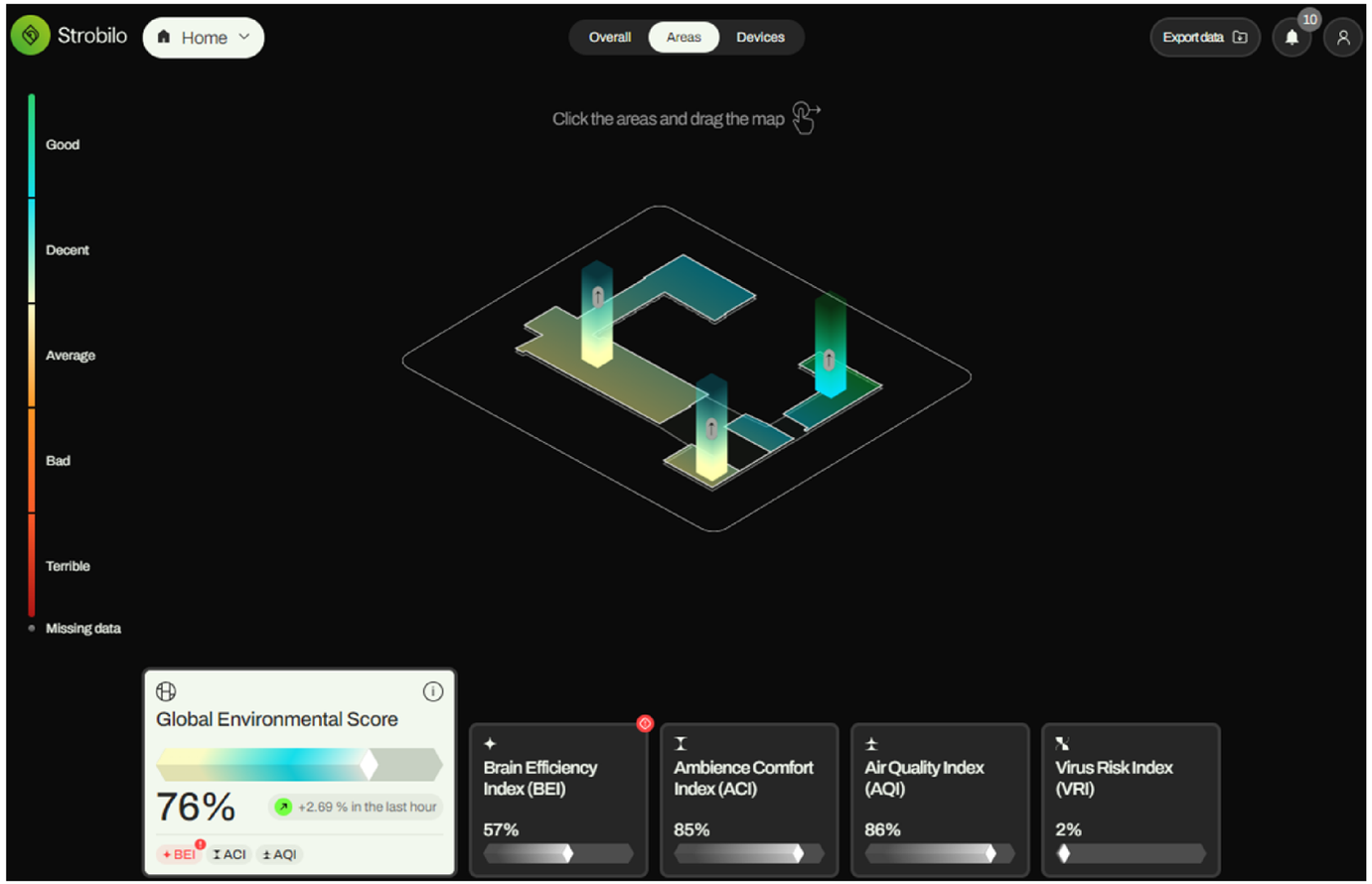
Strobilo Impact's interface provides a **general overview** of the building where the devices have been installed ("**Overall**", top-center, left).

This allows you to know at a glance how your entire space is performing in real time – thanks to the **dashboard cards** at the bottom displaying Strobilo's **KPIs**.



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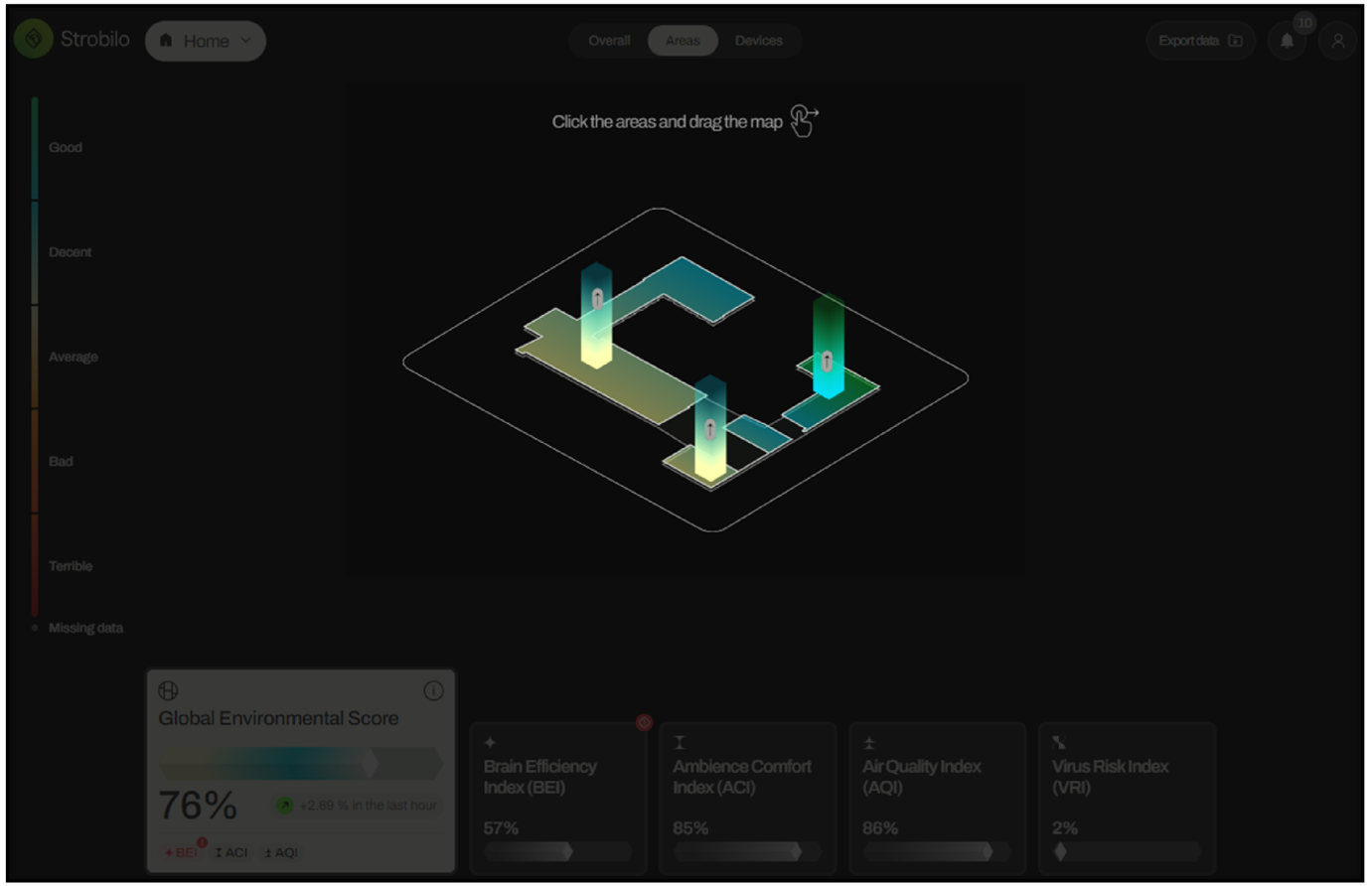
Moving around the building's different areas ("**Areas**", top-center, middle) and devices ("**Devices**", top-center, right), the interface adapts to provide an analytical, more detailed view of **every room's** performance.



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Main elements.

1) Clickable and **interactive 3D map** that allows you to browse the building's different areas and rooms. By dragging the mouse, the map can also **be rotated.**



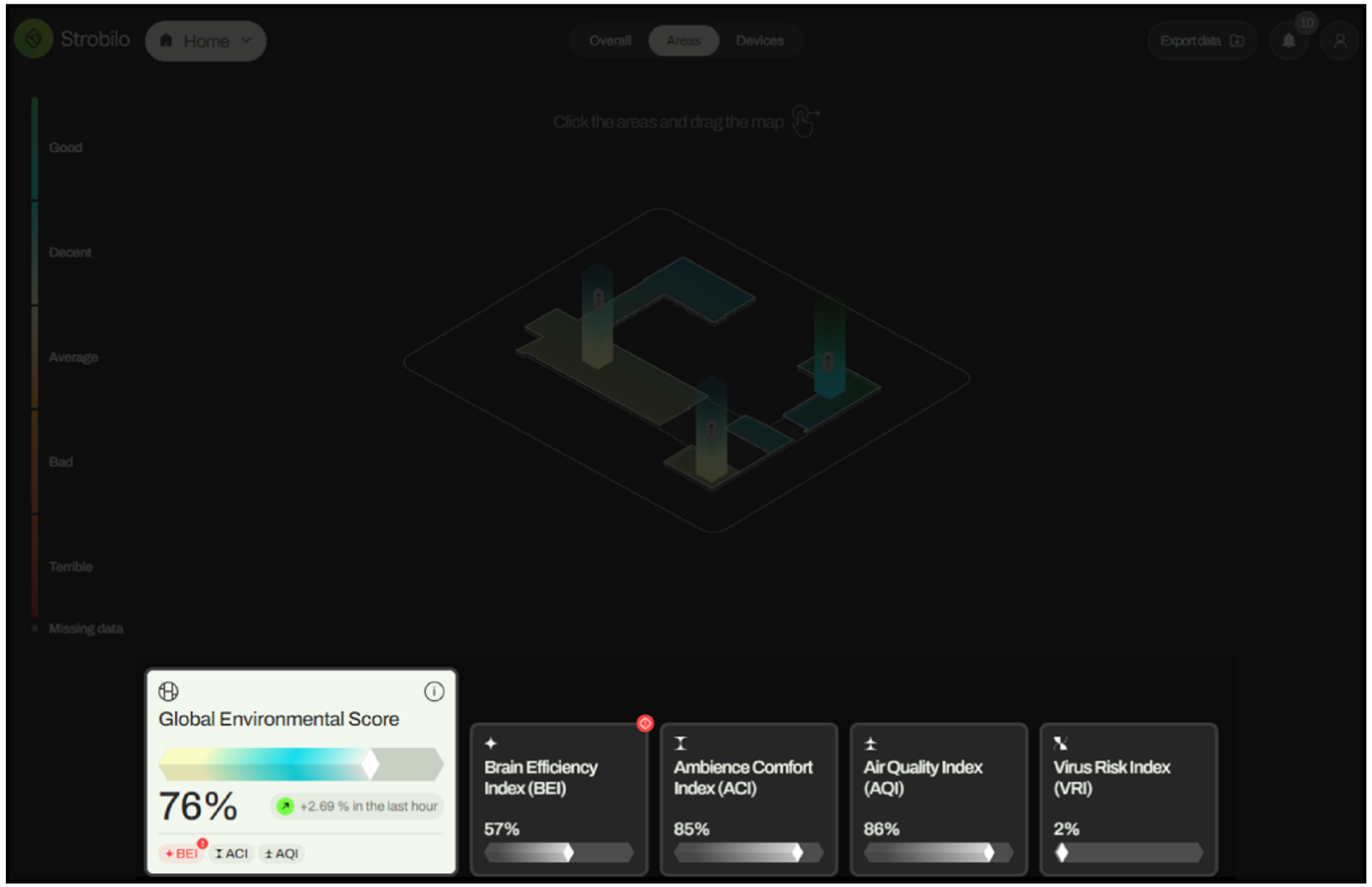
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2) Strobilo’s proprietary **KPIs** (key performance indicators).

Our main KPIs actually displayed are:

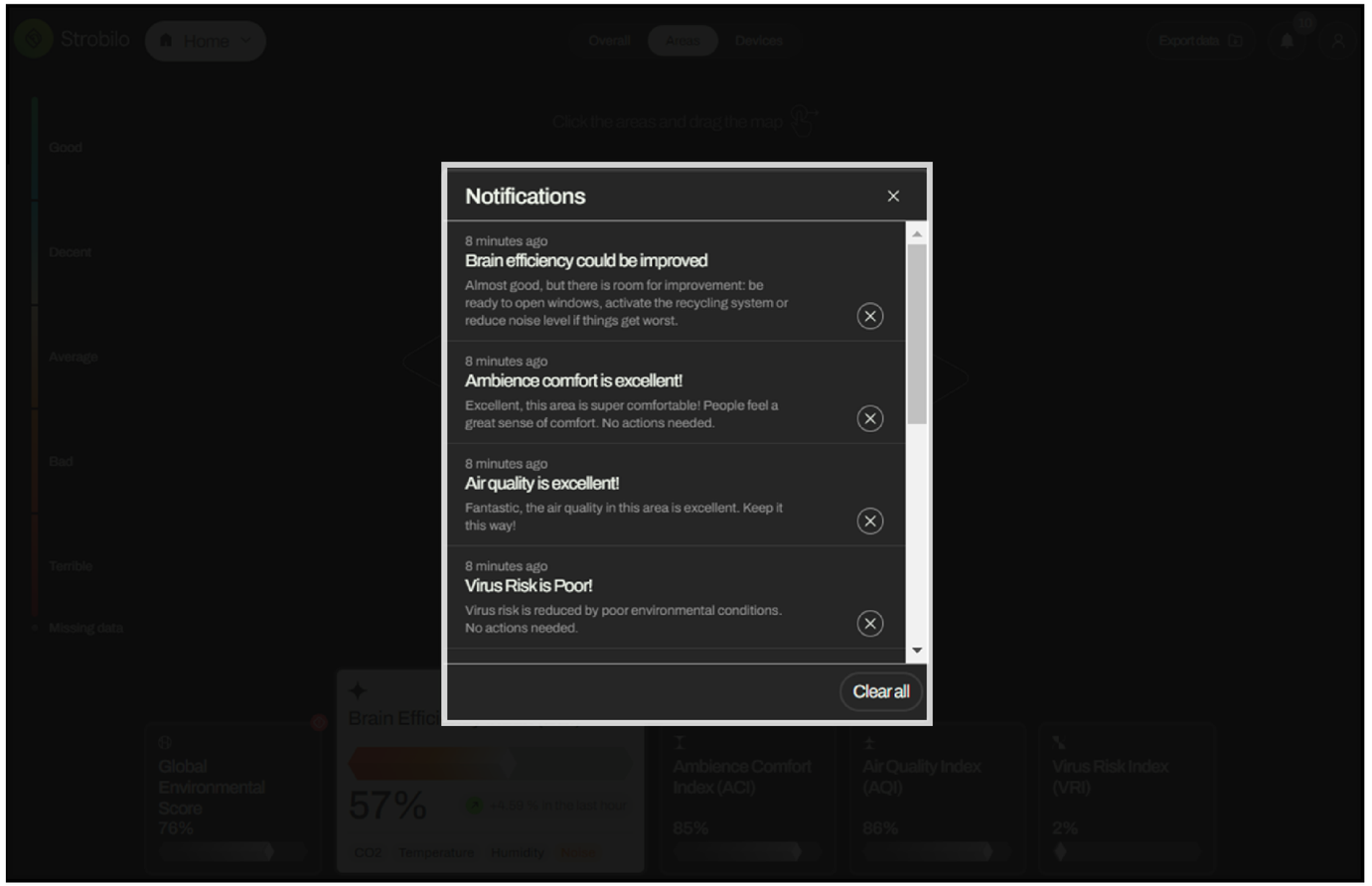
- **GES** (Global Environmental Score)
- **BEI** (Brain Efficiency Index)
- **ACI** (Ambience Comfort Index)
- **AQI** (Air Quality Index)
- **VRI** (Virus Risk Index)

But others are being developed by our R&D team.



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3) **Notifications** providing constant insights on your building’s environmental conditions and suggesting which **immediate actions** need to be taken.

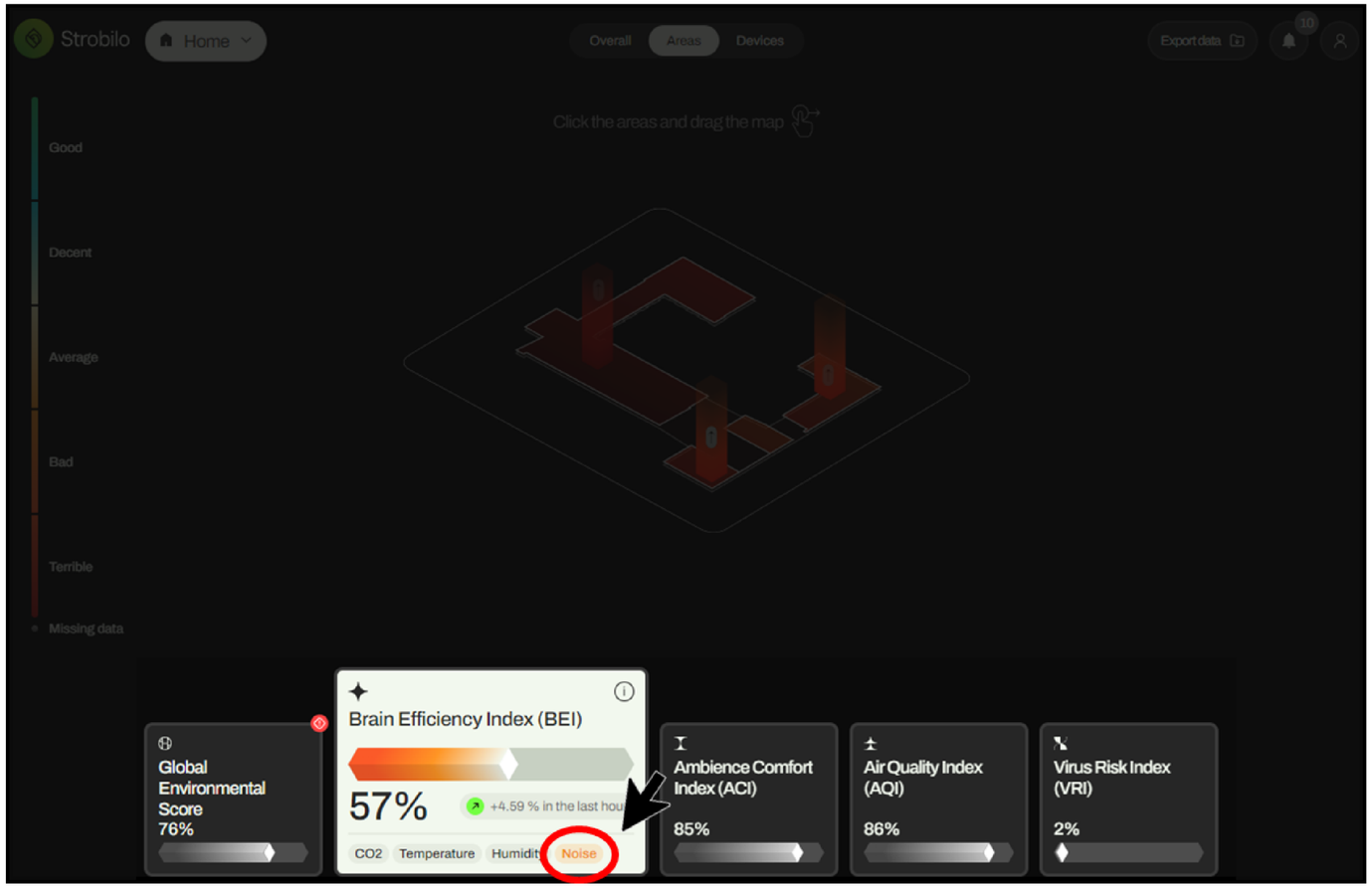


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Card selection.

The **cards** at the bottom of the dashboard allow you to select which **KPI** you want the map to display.

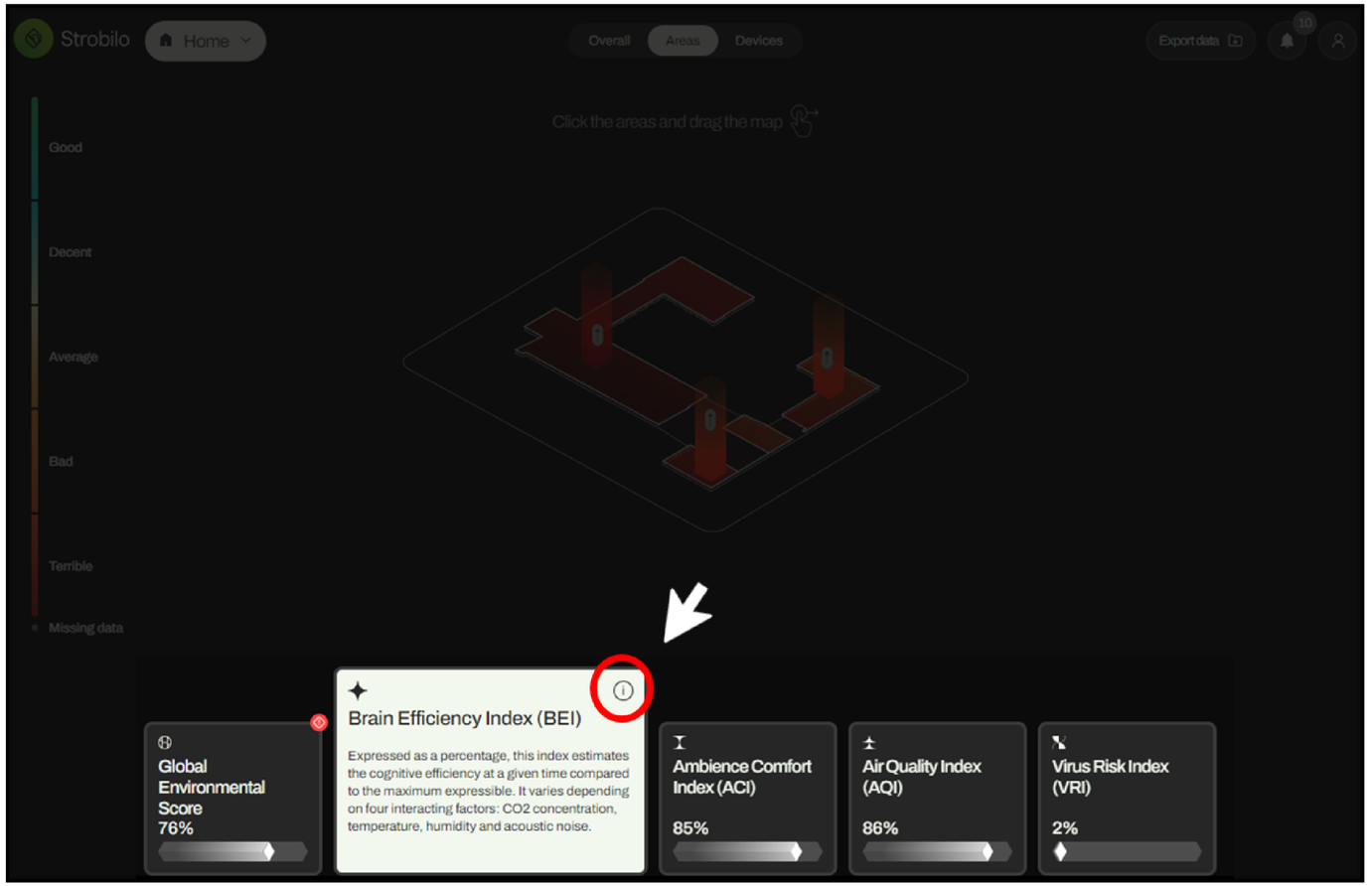
When the KPI value exceeds a pre-defined threshold, a **colored indicator** signals which environmental parameters are contributing the most, by changing from **neutral** to **orange** to **red** as the KPI value worsens.



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Card selection.

Furthermore, to flip them over and read the KPI's **description,** simply click on the "info" icon (card's top-right corner).

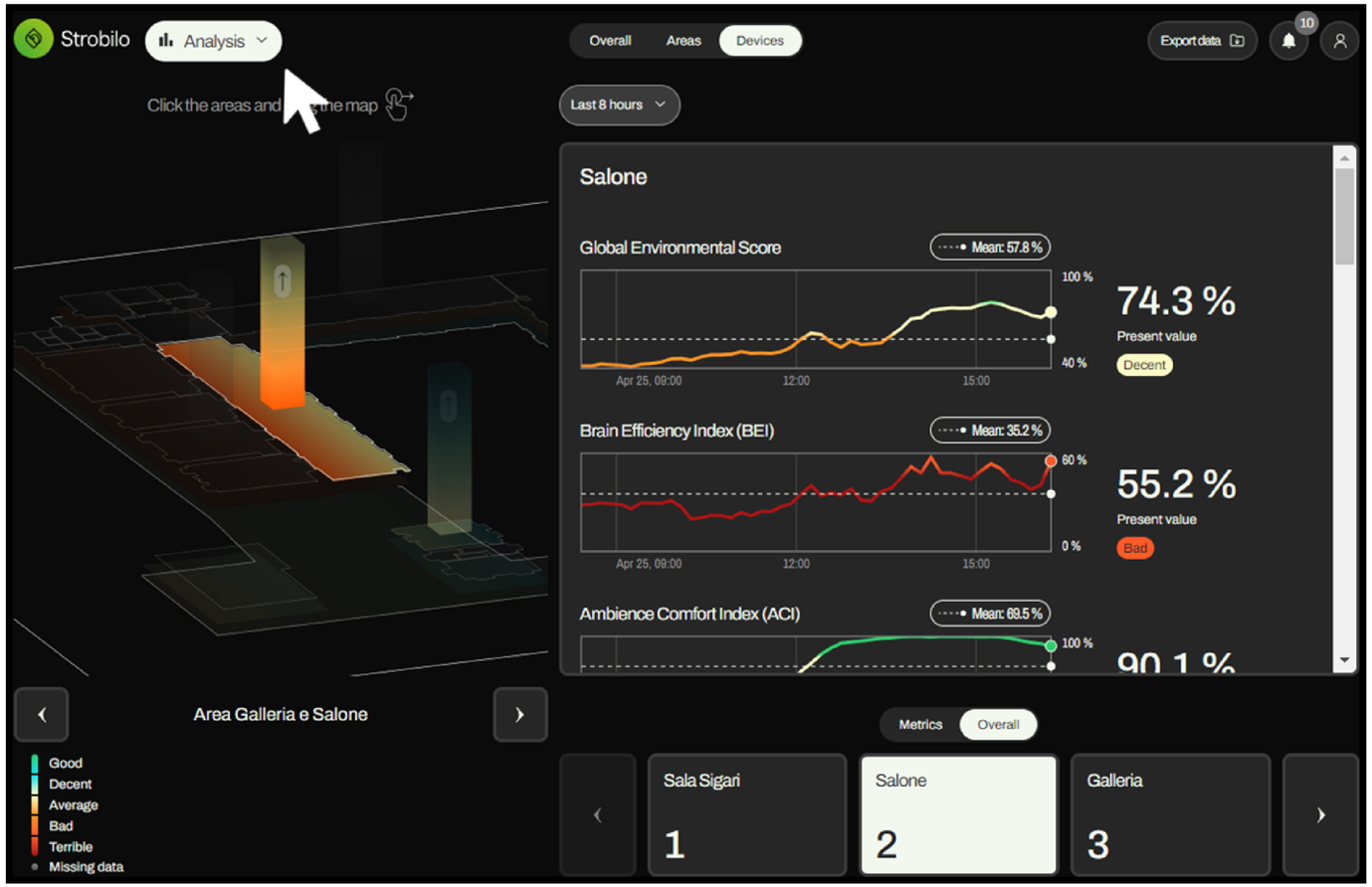


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Analysis section.

The **analysis section** provides an in-depth examination, presenting **data** on KPIs and environmental parameters across a **flexible** and **extensive time interval** (up to one year).

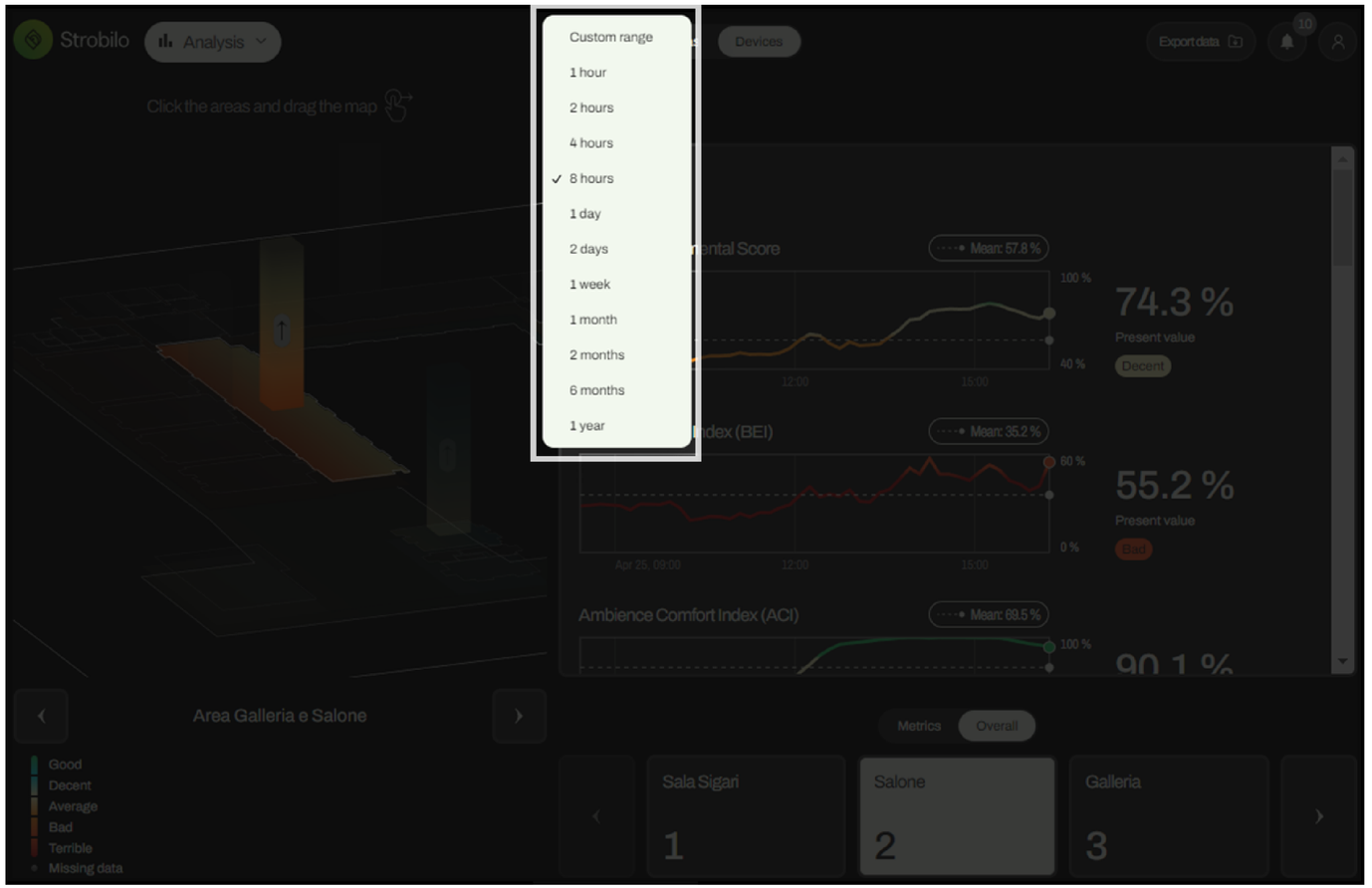
The **layout** is strategically designed for clarity: the map on the left shrinks and leaves space to the **line charts** on the right, facilitating granular analysis of trends and patterns.



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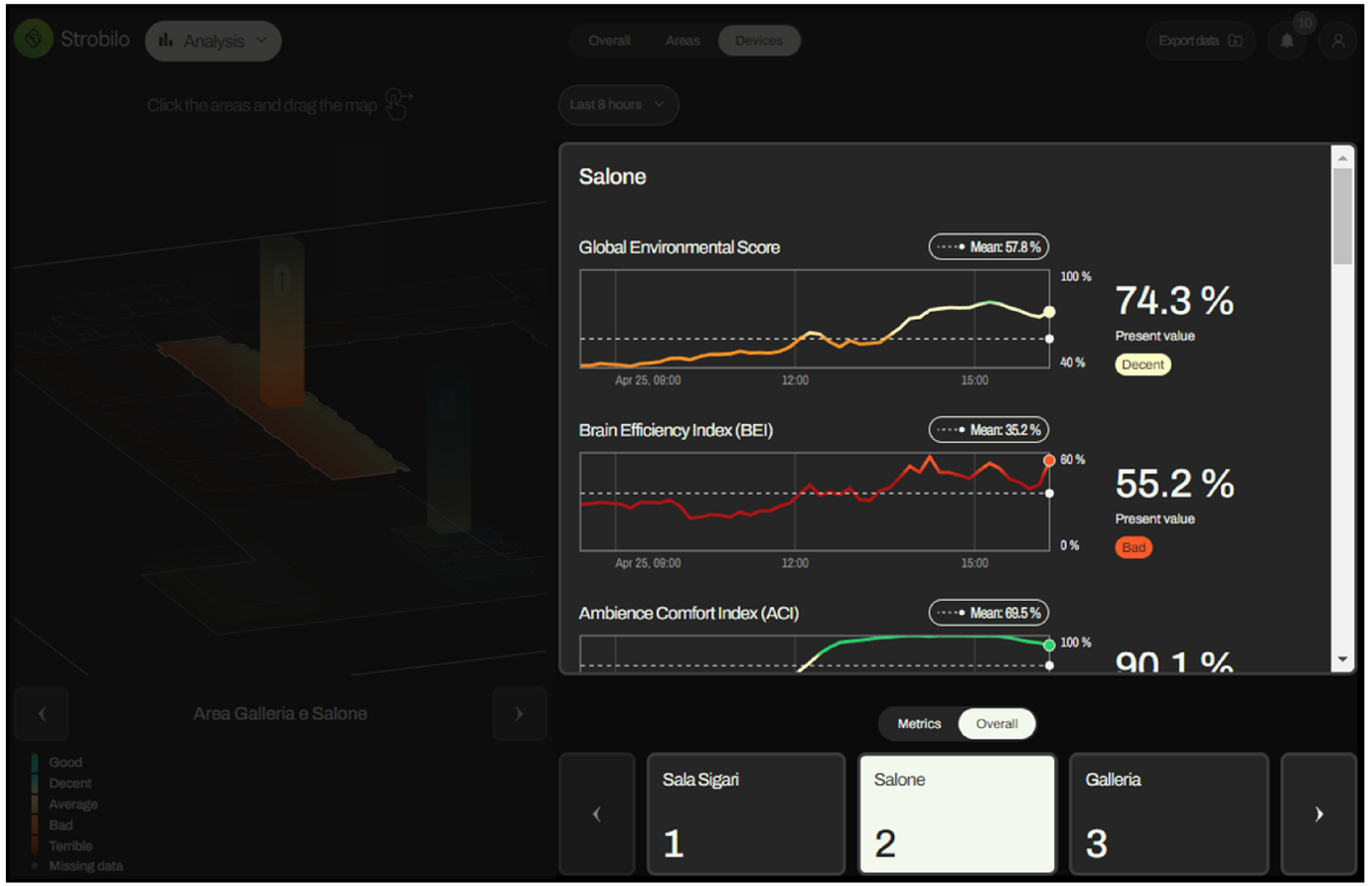
Main elements.

1) **Time interval** filter.



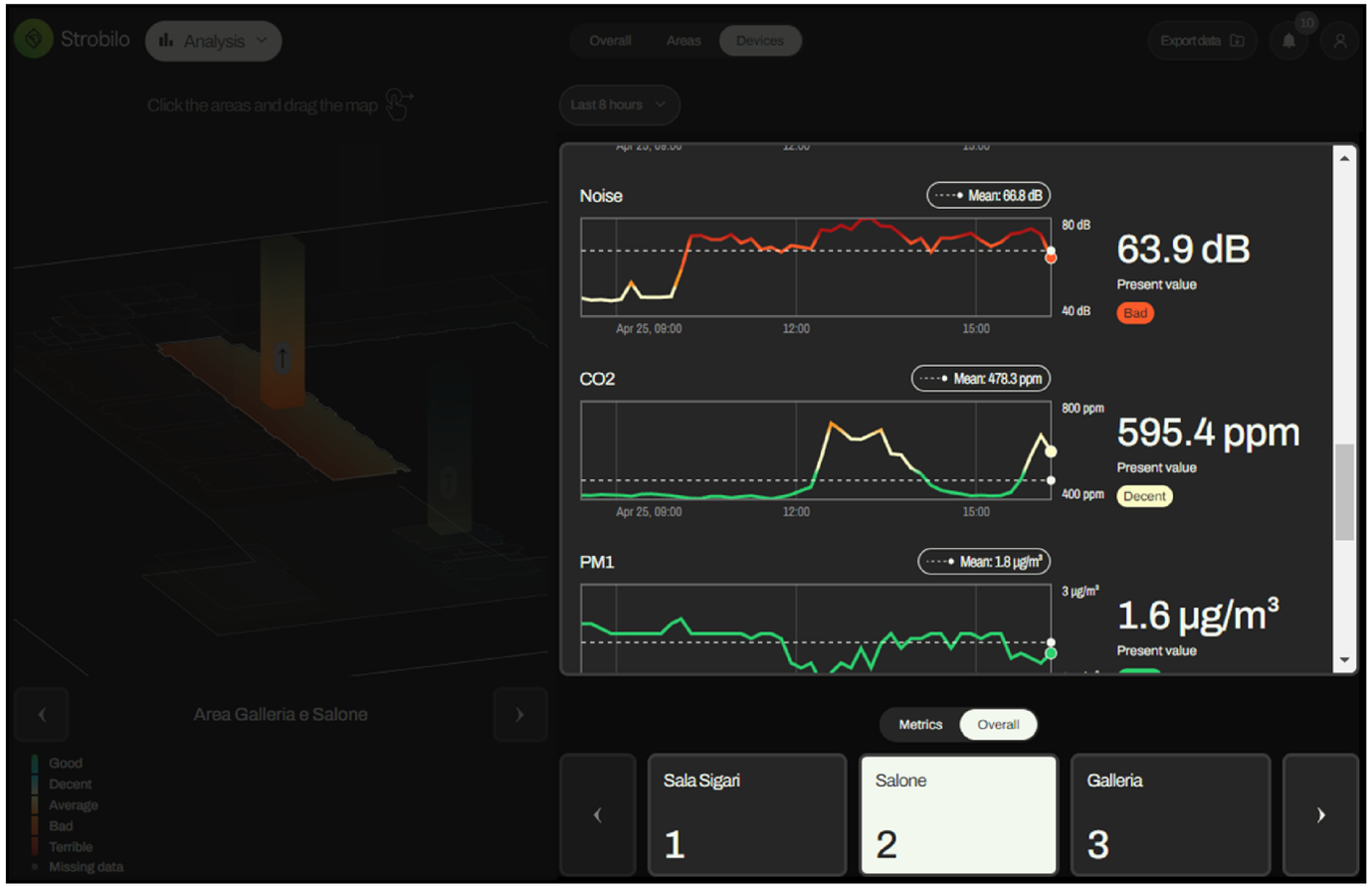
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2a) Possibility to compare various **KPIs** in a **specific area or device**.



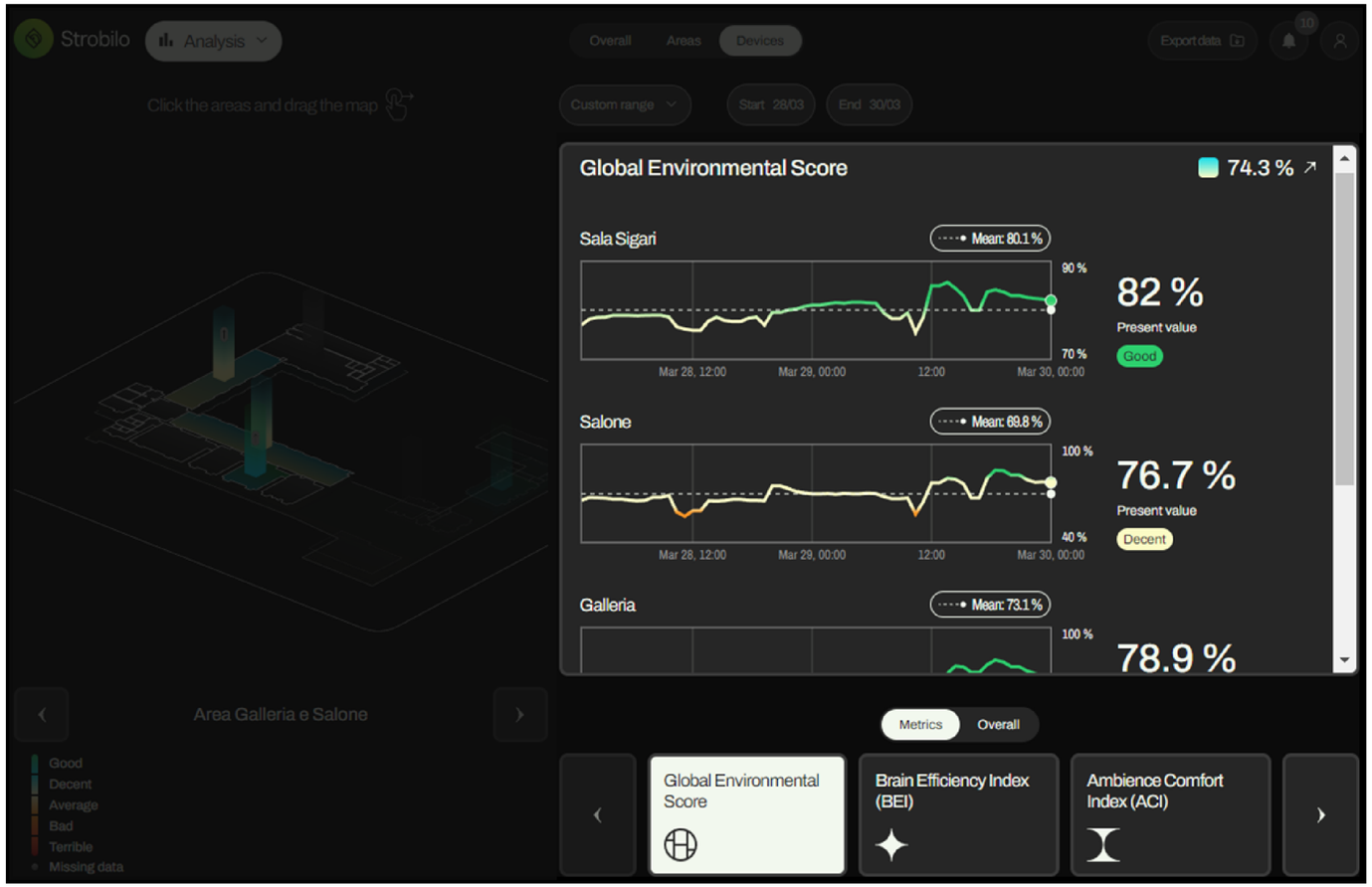
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2b) Possibility to compare all the **environmental parameters** for a **specific area or device**.



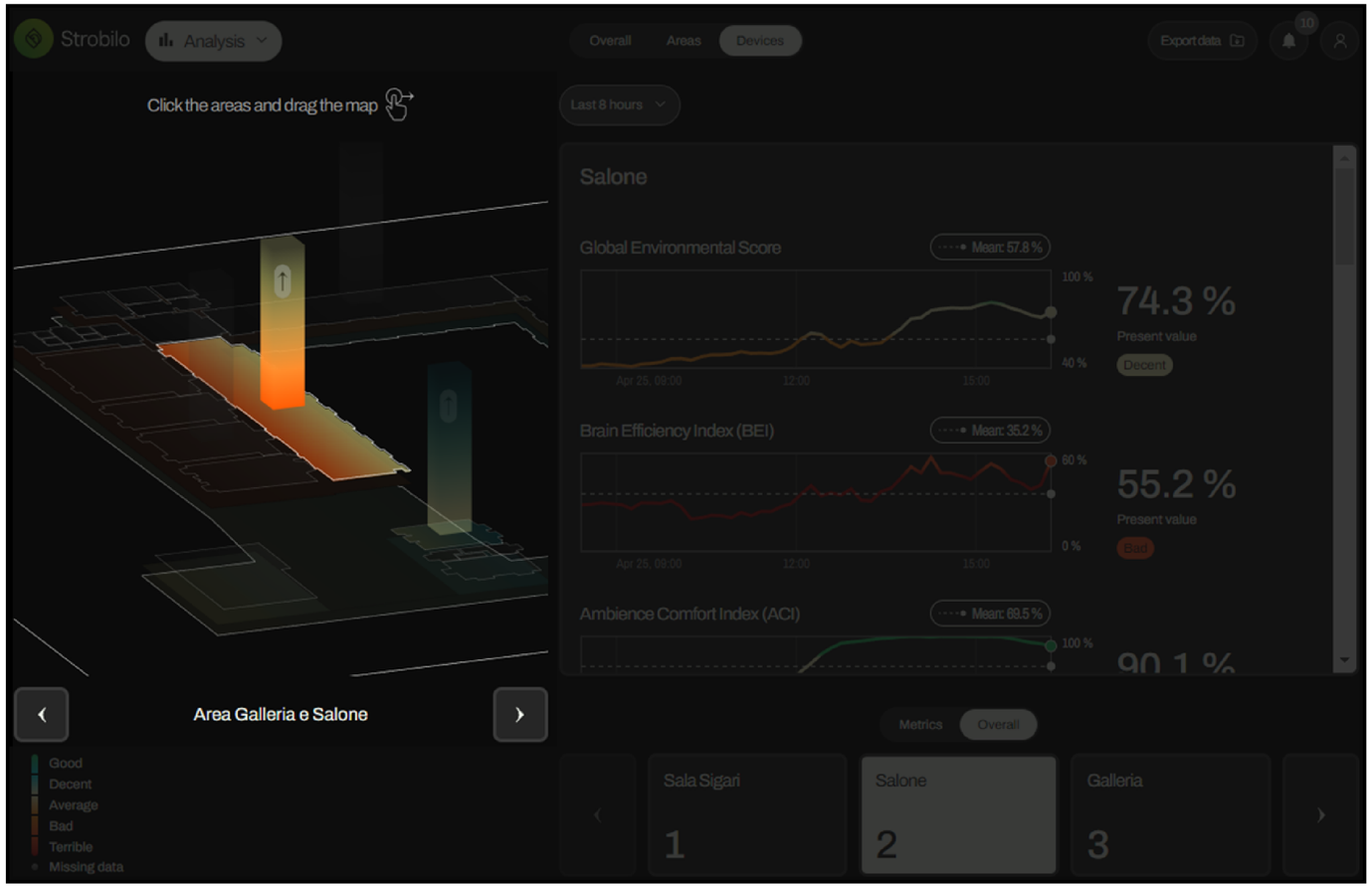
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2c) Possibility to compare **different areas or devices** for one specific **KPI** or **environmental parameter**.



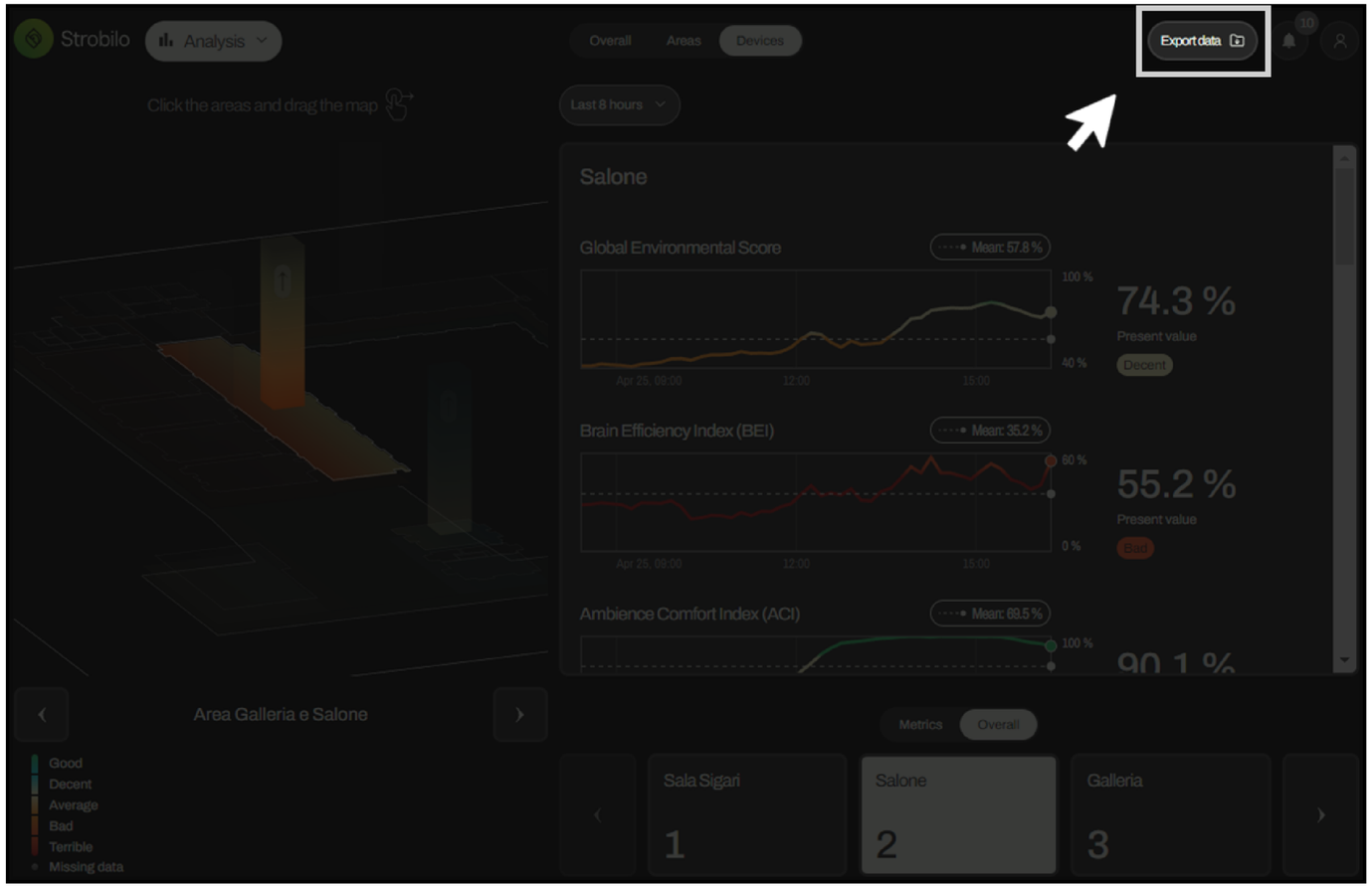
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3) **3D map** with focus (autozoom and positioning) on either the entire **building** or a selected **area** or **device.**



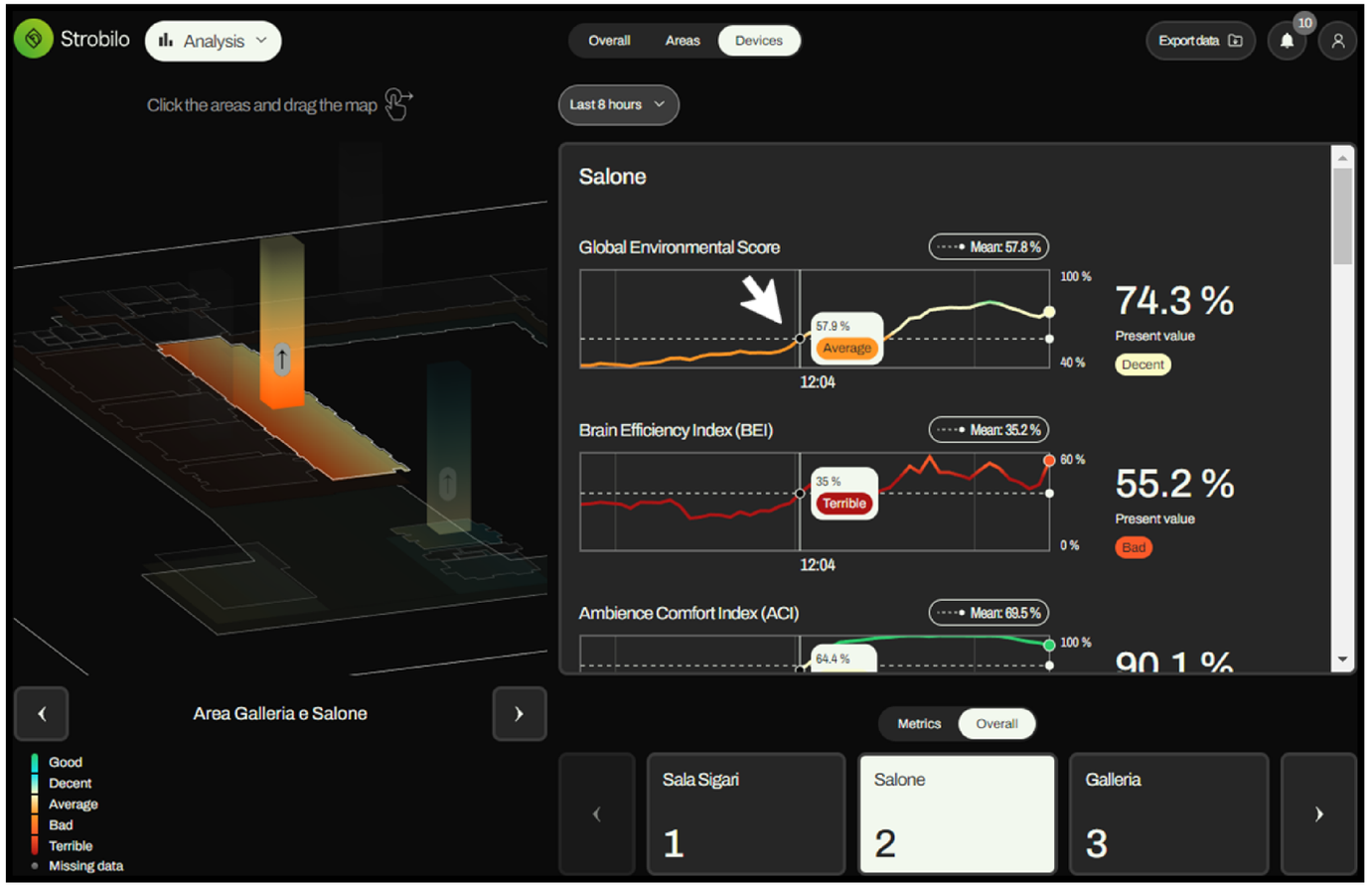
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4) The **data export function** in the dashboard generates a **CSV file** containing information filtered according to the selected time interval.



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5) Finally, **hovering** over a line on a line chart allows for a more **granular observation** of the selected data.

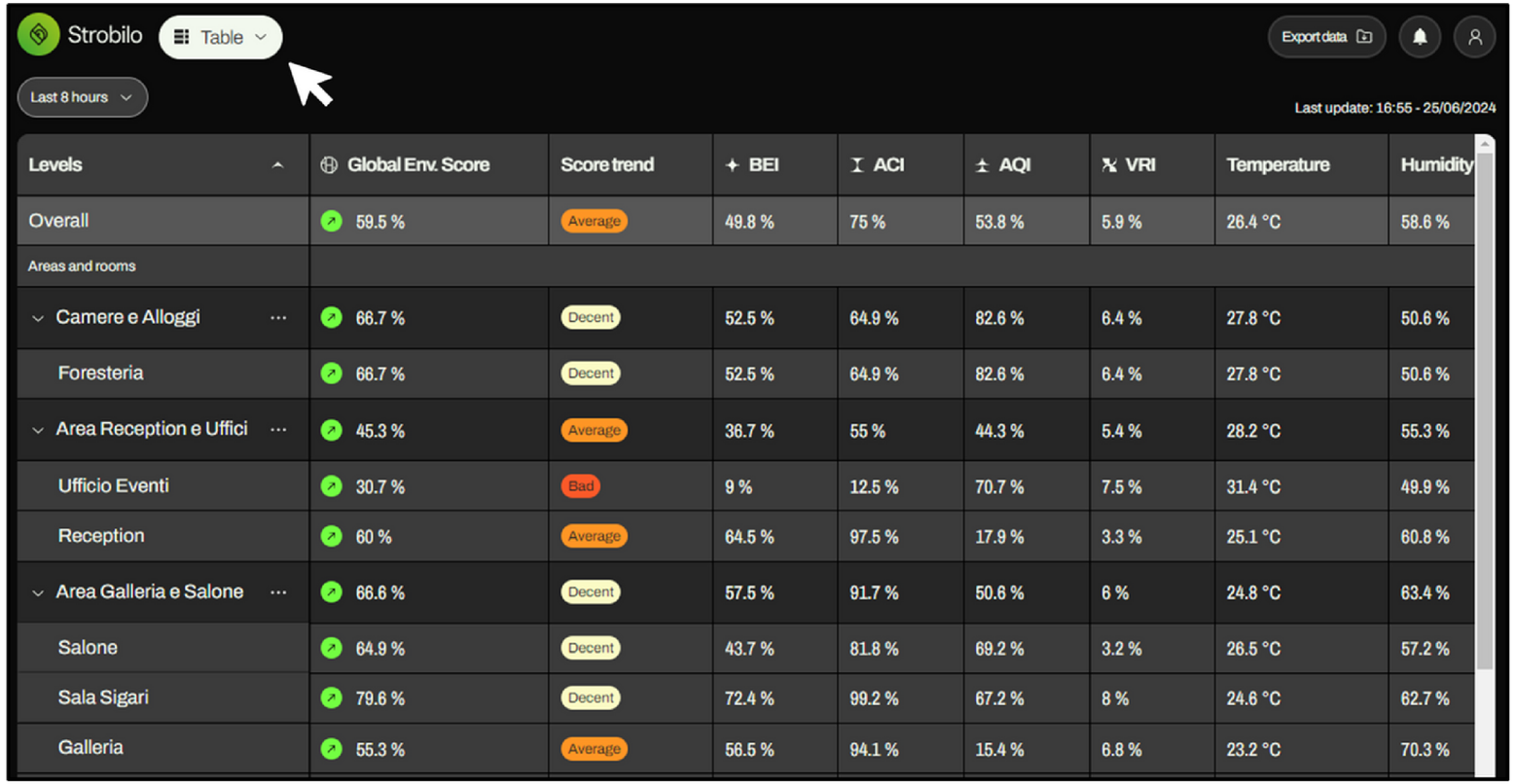


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Table view.

This option offers a minute-by-minute updating **tabular overview**, presenting the **average values** of all KPIs and environmental parameters across all areas and devices, calculated over the **selected time interval**.

Additionally, it displays the **trend** - improving or declining - of the **Global Environmental Score**, along with a qualitative evaluation ranging from "terrible" to "good".



Levels	Global Env. Score	Score trend	BEI	ACI	AQI	VRI	Temperature	Humidity
Overall	59.5 %	Average	49.8 %	75 %	53.8 %	5.9 %	26.4 °C	58.6 %
Areas and rooms								
Camere e Alloggi	66.7 %	Decent	52.5 %	64.9 %	82.6 %	6.4 %	27.8 °C	50.6 %
Foresteria	66.7 %	Decent	52.5 %	64.9 %	82.6 %	6.4 %	27.8 °C	50.6 %
Area Reception e Uffici	45.3 %	Average	36.7 %	55 %	44.3 %	5.4 %	28.2 °C	55.3 %
Ufficio Eventi	30.7 %	Bad	9 %	12.5 %	70.7 %	7.5 %	31.4 °C	49.9 %
Reception	60 %	Average	64.5 %	97.5 %	17.9 %	3.3 %	25.1 °C	60.8 %
Area Galleria e Salone	66.6 %	Decent	57.5 %	91.7 %	50.6 %	6 %	24.8 °C	63.4 %
Salone	64.9 %	Decent	43.7 %	81.8 %	69.2 %	3.2 %	26.5 °C	57.2 %
Sala Sigari	79.6 %	Decent	72.4 %	99.2 %	67.2 %	8 %	24.6 °C	62.7 %
Galleria	55.3 %	Average	56.5 %	94.1 %	15.4 %	6.8 %	23.2 °C	70.3 %

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Enjoy!

STROBILUS

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PRODUCT MANUAL GUIDE

STROBILO

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Chapter 1: What is *Strobilus*?

Introduction

Strobilus is a proprietary electronic device by Strobilo Srl, designed to enhance our understanding of the environment surrounding us, both indoors and outdoors. Through cutting-edge technology, *Strobilus* embarks on a mission to redefine the way we perceive and interact with our environments.

Device Overview

Strobilus is a comprehensive environmental monitoring system. Equipped with advanced sensors, it can measure up to 11 environmental parameters, including temperature, humidity, CO2, sound pressure, a broad spectrum of pollutants and more. In addition to these, *Strobilus* features two crucial positioning indicators: GPS for location tracking and an accelerometer for detecting position and motion.

Purpose and Usage

The primary goal of *Strobilus* is to collect, store, and transmit environmental data. This invaluable data serves a dual purpose. Firstly, it provides organizations with critical insights into their immediate surroundings, enabling them to make informed decisions about health, comfort and productivity. Secondly, the collected data fuels the research and development efforts of Strobilo. By analyzing this data, our experts develop predictive models and quantify the impact of environmental factors on individuals living, working and learning various settings.

Chapter 2: Installation Process

Getting Started with *Strobilus*

Installing your *Strobilus* device is a straightforward process, entirely managed by Strobilo's professional team. The installation is divided into two main phases: device configuration and power connection.

Device Configuration

The first step involves connecting your *Strobilus* to a WiFi network. This is done by entering the network's SSID and password into the device. This connection is crucial for the device to transmit the collected data to the cloud servers owned by Strobilo.

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Power Connection

Powering the Device: Once the WiFi setup is complete, the next step is to connect *Strobilus* to a power source. The device needs to be continuously powered to function correctly and record data.

Data Transmission: With power supplied, *Strobilus* automatically connects to the previously configured WiFi network and starts transmitting the collected environmental data to Strobilo's cloud servers.

Important Note: To ensure uninterrupted data collection and transmission, *Strobilus* should never be disconnected from its power source.

Chapter 3: Data Recording

How *Strobilus* Manages Data

Once powered, *Strobilus* begins its primary function of recording environmental data through its integrated sensor network. This chapter details how *Strobilus* ensures continuous and accurate data capture, even in the face of connectivity issues.

Data Recording Process

Continuous Monitoring: *Strobilus* continuously measures environmental parameters and location data, providing a comprehensive understanding of the surrounding conditions.

Real-Time Data Transmission: Under normal operation, *Strobilus* transmits this data in real-time to Strobilo's cloud servers via a WiFi connection, enabling immediate access and analysis.

Handling Connectivity Issues

Strobilus is equipped with features to handle situations where WiFi connectivity is temporarily lost.

Local Data Storage: In the event of a WiFi disconnection, *Strobilus* automatically switches to local data storage mode. It uses an onboard micro-SD card to save the recorded data, ensuring no loss of information. This buffer solution allows for several weeks' worth of data to be stored locally.

RTC (Real-Time Clock) Battery: The device includes an RTC battery to maintain accurate timekeeping even when disconnected from power or the internet. This feature is crucial for ensuring that once the device reconnects to WiFi, it can precisely timestamp the backlog of data collected during the outage.

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Data Recovery and Sync: Upon re-establishing a WiFi connection, *Strobilus* automatically begins the process of uploading the locally stored data to the cloud. It uses the timestamps provided by the RTC to accurately "fill in the gaps," ensuring a continuous and complete environmental data record.

Key Benefits

Reliability: The combination of local storage and an RTC battery ensures that data collection is not interrupted, even in the absence of WiFi connectivity.

Accuracy: With precise timekeeping, *Strobilus* guarantees that the environmental data is accurately recorded and synchronized, providing a reliable basis for analysis.

Peace of Mind: Users can be confident that no data will be lost due to connectivity issues, making *Strobilus* a dependable tool for environmental monitoring.

Chapter 4: Data Visualization

Environmental Insights Through *Strobilo Impact*

Understanding the data collected by *Strobilus* is pivotal for leveraging its full potential. *Strobilo Impact*, the proprietary data visualization portal provided by Strobilo, serves as the bridge between raw data and actionable insights. This chapter guides users through accessing and utilizing this powerful tool.

Accessing *Strobilo Impact*

Secure Login: Access the *Strobilo Impact* portal by navigating to https://impact.strobilo.com/login. The platform is designed with security in mind, ensuring that your environmental data and insights remain protected.

Features of *Strobilo Impact*

Environmental Component Monitoring: *Strobilo Impact* allows users to monitor the fluctuating environmental parameters that *Strobilus* measures. This real-time data provides a comprehensive overview of your surrounding conditions.

Predictive Indicators: The portal offers access to proprietary indicators developed by Strobilo. These indicators function as predictive models, helping to understand current environmental trends, potential future changes, and how individuals might act upon these insights.

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Spatial Visualization: Data can be visualized spatially using a detailed map that breaks down information by buildings, areas, and specific points. This feature is particularly useful for users interested in monitoring environmental conditions across different locations.

Temporal Visualization: *Strobilo Impact* also features time series visualizations, allowing users to observe how environmental parameters change over selected time intervals. This temporal perspective is invaluable for identifying trends and patterns over time.

Data Granularity and Historical Analysis

Real-Time Data: For monitoring intervals covering the last 4 hours, *Strobilo Impact* displays data at a granularity of one minute. This high resolution provides users with a detailed and up-to-the-minute view of environmental conditions.

Expanded Time Intervals: When users expand their monitoring interval beyond the last 4 hours, the platform automatically averages the data over increasingly longer periods. This feature is designed to make long-term trends and patterns more apparent, facilitating a clearer understanding of environmental changes over time.

Data Export Capability

Recognizing the need for in-depth analysis that may require specialized tools or integration with other data sets, *Strobilo Impact* includes a feature to export data directly from the graphs into a CSV file. This flexibility allows clients to perform extended analyses with their internal resources, enabling a deeper dive into the data for customized insights and reporting.

Leveraging *Strobilo Impact*

Making Informed Decisions: By understanding how environmental conditions fluctuate and impact various dimensions of interest, users can make more informed decisions regarding their well-being and environmental impact.

Actionable Insights: The predictive models and indicators provided by Strobilo empower users with the knowledge to anticipate future conditions and take proactive measures.

Customizable Views: Whether interested in specific environmental parameters, spatial data analysis, or long-term trends, *Strobilo Impact* offers customizable views to cater to individual needs and preferences.

Advanced Features: The advanced options on the portal are designed to empower users with greater control over how they access, view, and analyze environmental data collected by *Strobilus*. Whether it's through real-time monitoring with minute-by-minute updates, examining long-term environmental trends, or conducting detailed analyses with exported data, *Strobilo Impact* supports a comprehensive range of analytical needs.

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Chapter 5: Indicators and Troubleshooting

Understanding Your *Strobilus* Device

To facilitate easy monitoring of the *Strobilus* device's status without the need to log into the *Strobilo Impact* portal, the device is equipped with an RGB LED indicator. This chapter explains the meaning behind each color of the LED light and provides guidance for troubleshooting common issues.

LED Indicator Meanings

Red Light: Indicates that the device has just been powered on. The red light is a temporary status that should change color shortly after the device initializes.

Blue Light: Signifies that the device has been configured but is unable to connect to the WiFi network. This often suggests that the network credentials (SSID and password) entered during the setup process may be incorrect or have changed.

Green Light: A transition from blue to green indicates a successful connection to the WiFi network. The green light means that the device is actively transmitting data to the *Strobilo Impact* portal.

Troubleshooting Tips

Ensure Stable Power Supply: A constant power source is vital for the smooth operation of your *Strobilus*

device. Ensure the power connection is secure and uninterrupted.

Check Network Credentials: If the LED displays a blue light, verify the WiFi network credentials and ensure they are up to date. Incorrect or outdated credentials are the most common reason for connectivity issues.

Power Cycle the Device: In the event of persistent issues, try turning the device off by stop feeding it and then turn it on again. This simple step can often resolve minor glitches by resetting the device's state.

Contacting Customer Support

Should the LED indicators suggest a problem that cannot be resolved through the above steps, or if you encounter any other malfunctions, Strobilo's customer support team is ready to assist you. You can reach out for help and guidance at: info@strobilo.life

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Chapter 6: Technical Specifications

The following tables present the comprehensive technical specifications of the *Strobilus* device. These specifications detail the range and resolution of the environmental parameters that *Strobilus* can measure as well as operational conditions and connectivity features.

MEASURED PARAMETER	DETAILS
VOC	Detection range: 0 up to 1000 ppm Resolution: ±15 VOC index points
CARBON DIOXIDE (CO2)	Detection range: 400 up to 10000 ppm Resolution: ±30 ppm + 3 %
CARBON MONOXIDE (CO)	Detection range: 1 up to 1000 ppm Resolution: -
OZONE (O3), NITROGEN (NOx)	Detection range: 20 up to 500 ppb Resolution: -
PARTICULATE MATTER (PM)	Detection range: from 1µg/m³ up to 999µg/m³ Resolution: 1µg/m³ ± 10ug/m³
SOUND PRESSURE	Frequencies: 100 up to 10000Hz Sensitivity (at 1kHz): -45 to maximum -39dB Acoustic Overload Point (at 1Khz): 115dB SPL
BRIGHTNESS	Detection range: 0.01 up to 64000 lux Resolution: 0.0036 lux
ATMOSPHERIC PRESSURE	Detection range: 300 up to 1100 hPa Resolution: ±0.6 hPa
TEMPERATURE	Detection range: -20°C up to +85°C Resolution: ± 0.5°C
HUMIDITY	Detection Range: 0% up to 100% RH Resolution: ±3% RH
MAGNETOMETER	Detection range: -50 up to +50 G Resolution: 0.0015 G ± 7%
3-AXIS ACCELEROMETER	Resolution: up to ± 15g Resistance: up to 10000g shock
GPS	Sensitivity (tracking): -167dBm Sensitivity (acquisition): -148dBm Position Accuracy (GPS & GLO): 1.5m Position Accuracy (GPS): 2.5m Supported GNSS constellations: GPS, GLONASS/BEIDOU

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OPERATING TEMPERATURE	Operation	-10°C up to 50°C
	Storage	-25°C up to 70°C
OPERATING HUMIDITY	Operation	0% up to 85% RH
	Storage	From 30% up to 70% RH
FEEDING	Via external battery or direct current (USB-C, 5V - 0.3A)	
CONNECTION	Wi-Fi	Standard IEEE (802.11 b/g/n) Bitrate 802.11n up to 150Mbps Signal power: 18 up to 19.5 dBm (63.1 up to 79.4 mW) Antenna type: PCB, IPEX
OTHER COMPONENTS	Green Led	DIODE SMD LED GREEN 0805 2.2V
	RGB Led	DIODE SMD LED RGB A-COM PLCC4 2V (RED) - 3.2V (GREEN, BLUE)
	Micro SD	MLC 8GB UHS-I CLASS10 U1 INDUSTRIAL
	RTC Battery	-

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