

INDOOR AIR QUALITY MONITORING + OPTIMIZATION

cohesion

ABOUT COHESION

Cohesion is leading the way in autonomous building technology - seamlessly connecting critical systems with the human ecosystem, simplifying management through transparent operations and increasing asset value for owners by delivering better tenant experiences.

Cohesion's Indoor Air Quality Program allows building owners and operators to deliver a healthy building to occupants by monitoring pollutants and optimizing to remove the pollutants in real time.

CHALLENGES

Historically, indoor air quality monitoring was limited to point in time industrial testing and CO₂ sensors connected to the building automation system. There was little transparency to the air people breathed. Humans spend 90% of their lives indoor and an actively managed indoor air quality environment is crucial to drive healthy outcomes.

- » Increase productivity
- » Reduce the spread of germs
- » Drive success in ESG initiatives

SOLUTION



Map

Following building certification guidelines, we digitally plan sensor locations and map the corresponding mechanical systems



Monitor

We monitor TVOC, PM_{2.5}, PM_{10.0}, and CO₂ pollutants and alert permissioned operators to high levels based on ASHRAE guidelines



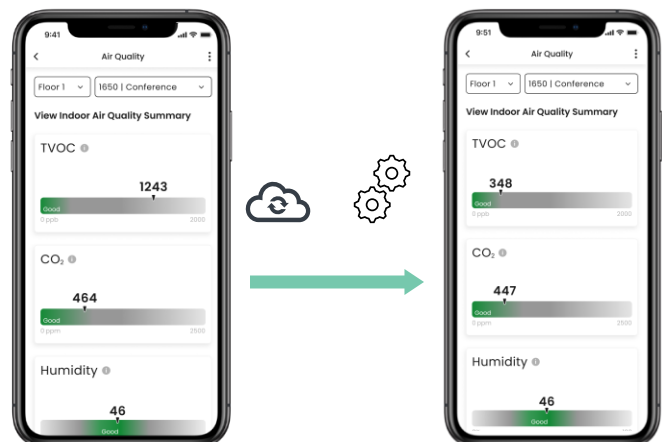
Optimize

Automatically optimize building conditions through an artificial intelligence and remote BAS operation that increases air flow and notifies management of adjustments



Insights

Understand how pollutants move through your space using powerful insights, allowing a deep dive into building trends



Learn more at cohesionib.com

CASE STUDY

IAQ PROGRAM AT

CLASS A COMMERCIAL OFFICE

CLIENT BACKGROUND

As tenants return to the office, a commercial class A building, (1,000,000+ sq. ft.), partnered with Cohesion to provide full transparency to building occupants of their overall indoor air quality in their common spaces. With continual monitoring and automated optimization of air flow, Cohesion reduced pollutants in real time.

ACTION

HVAC integration

Our smart building platform integrates with air quality sensors and the building's environmental control system, both at the space level via fan powered boxes/variable air volume boxes, and at the building level through air handling units (AHUs).

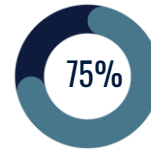
Timely detection

Indoor air quality (IAQ) sensors captured pollutant data points and our platform analyzed nearly 200,000 data points per day, including TVOCs, CO₂, PM_{2.5}, and PM_{10.0}, temperature, humidity, light and noise.

Autonomous protection in real time

In the presence of continually rising pollutant levels, TVOCs exceeding 500 µg/m³ (micrograms per cubic meter), our program increased airflow at the zone level to reduce pollutant levels by nearly 75%, maximizing effectiveness while minimizing impact on temperature and energy.

RESULTS



Reduction in pollutants to ensure air quality is at safe and healthy levels



Average program response time



Increased fresh air over an 8-hour day



\$2.3 million

Estimated yearly gain in employee productivity from improved IAQ

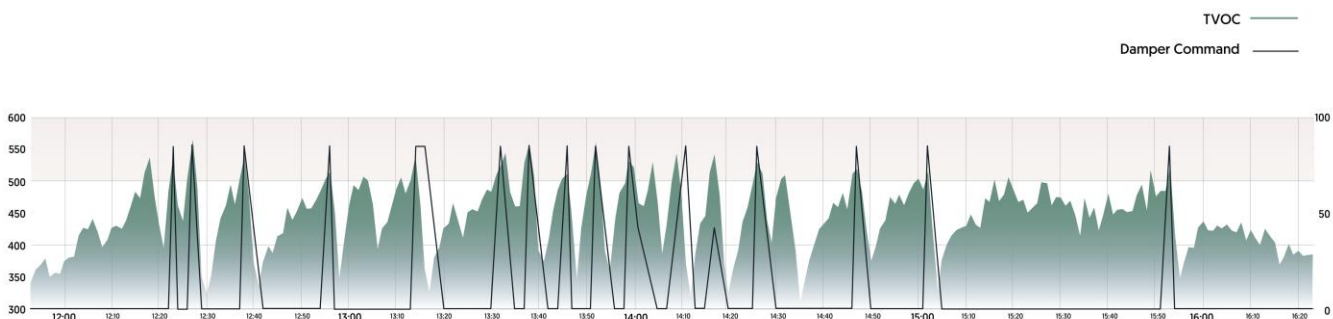


Fig 1: At sustained elevated TVOC levels, Cohesion's IAQ optimization program automatically takes command of the AHU to introduce fresh air and return TVOCs to safe levels.