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Founder & CEO

www.enerbrain.com

Your innovation partner
for a sustainable future

40% of the world's energy is consumed by buildings



and yet, how often have you experienced discomfort?



indoor air quality impacts **performance**

Taking a test in a room with high CO₂ results in **50% increase in mistakes**

and it affects businesses' **bottom line**

In a mall, when dwell time doubles
sales increase by 130%

Time is Money. Shoppers buy more when they stay longer. Pathintelligence

 enerbrain

most HVAC systems are not up to the task

Do not monitor T, Co2 and humidity in real time

Require constant supervision by trained staff

Proprietary and expensive upgrades and maintenance



Enerbrain turns wasteful buildings into **sustainable ones**



EFFICIENCY

30% energy savings and significant CO₂ emissions reduction



COMFORT

Productivity increase & less sick hours



ENGAGEMENT

Promote Social Corporate Responsibility

Energy Cloud: our HVAC IoT retrofit solution

Self-learning Algorithms

Dynamically fine tunes the best parameters for comfort & savings

Environmental Sensors

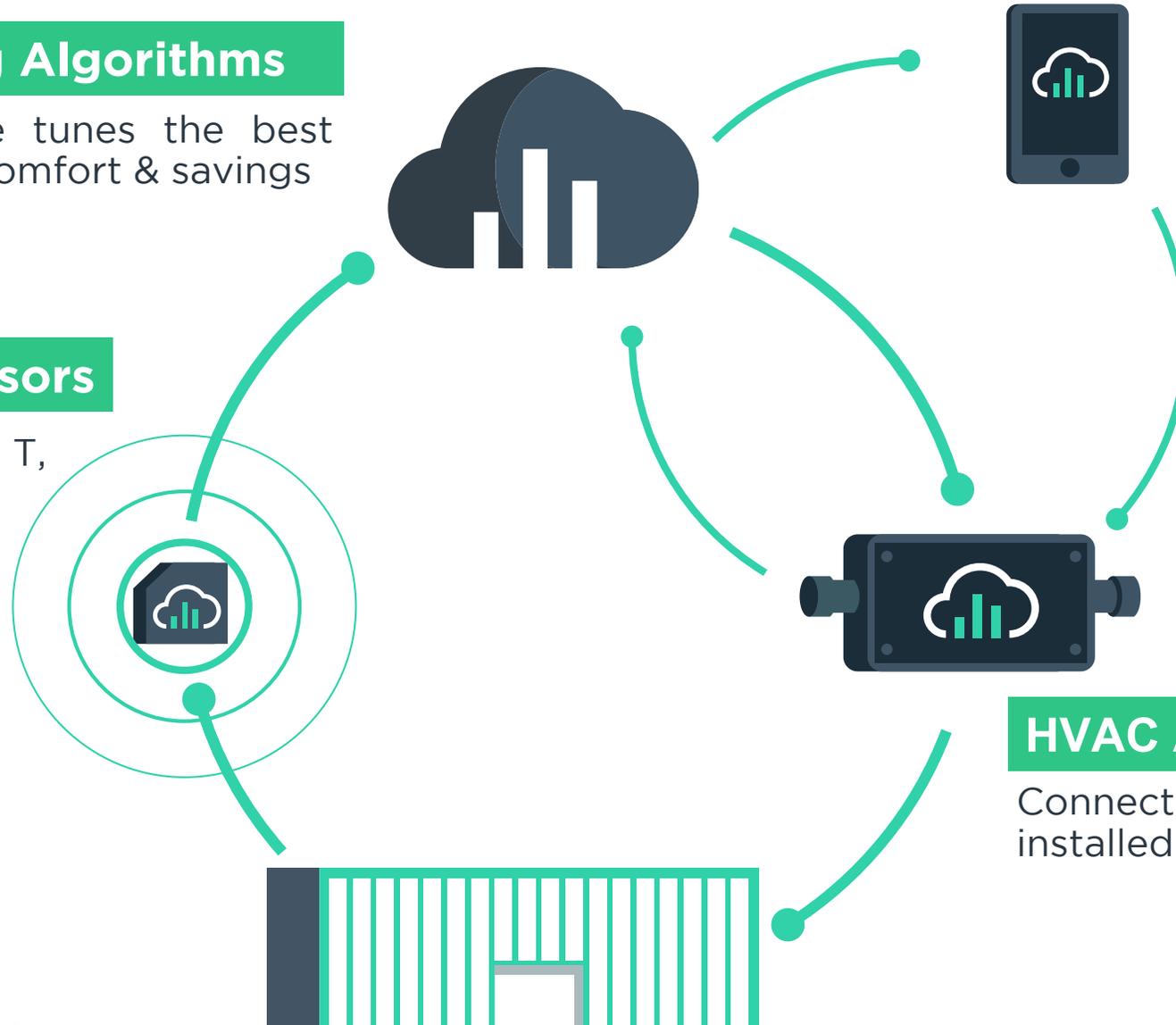
Monitor occupancy, CO₂, T, humidity & air quality

Mobile App

Remote management from any mobile device

HVAC Actuators

Connected to the cloud and installed on any HVAC system



Sensor - eSense

T, RH, CO₂ every 10'

Sigfox connectivity



enerbrain

4 Year Battery Life

Already configured

Algorithms - Energy Cloud

Integration
through API

PID + fuzzy logic



Input from indoor,
weather & historical

EU patent pending

Actuators - eNode

Remotely controls
valves & air gates

Encrypted
communication

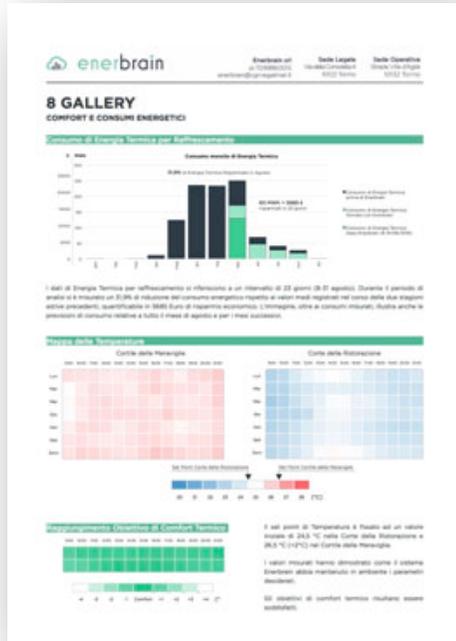
3G connectivity

SW & HW bypass,
electrically failsafe

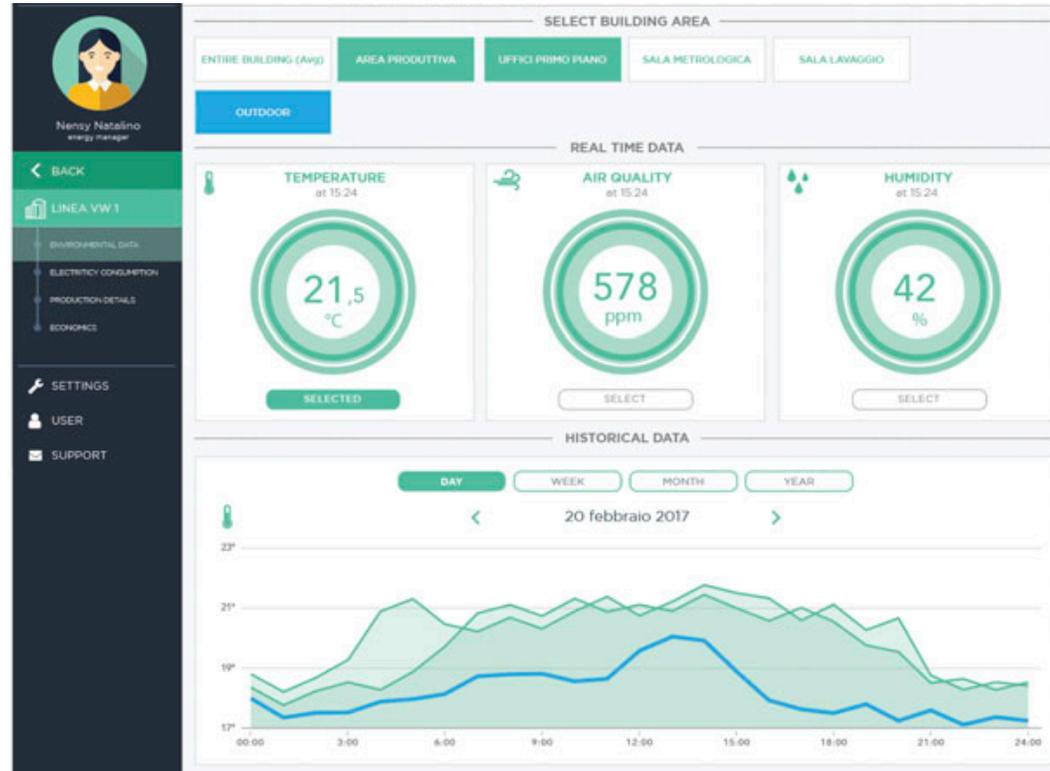
 SORACOM



Reports, Dashboards and App

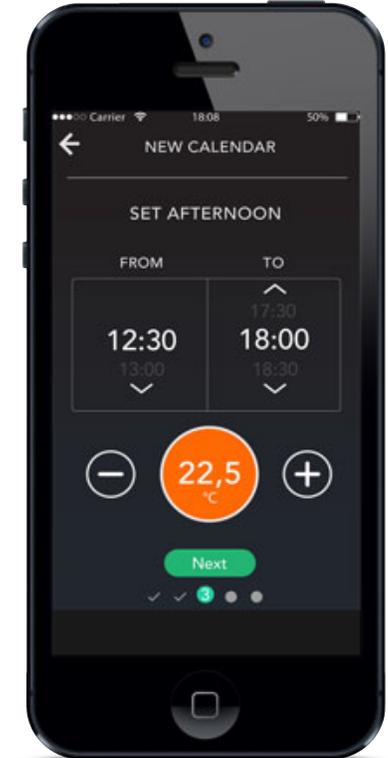


Detailed reports



Portfolio Management

Real time monitoring



Remote access

Enerbrain in three key points



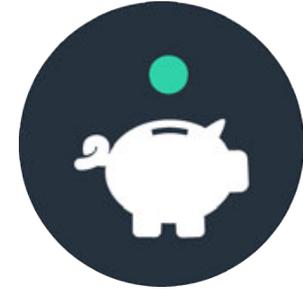
Flexible

- Suitable for any system:
- 100% compatible with any HVAC system
 - Non invasive 2 days installation



Advanced

Self-learning algorithms with automatic actuation of hardware systems



Profitable

- High reddyivity rate**
- NPV and IRR
 - WIN-WIN solution

Enerbrain's Customers



Collegio
Universitario
Renato Einaudi
Torino, 1935



QUIKSILVER



Case Study - 8 Gallery



Mall
Torino, Italy

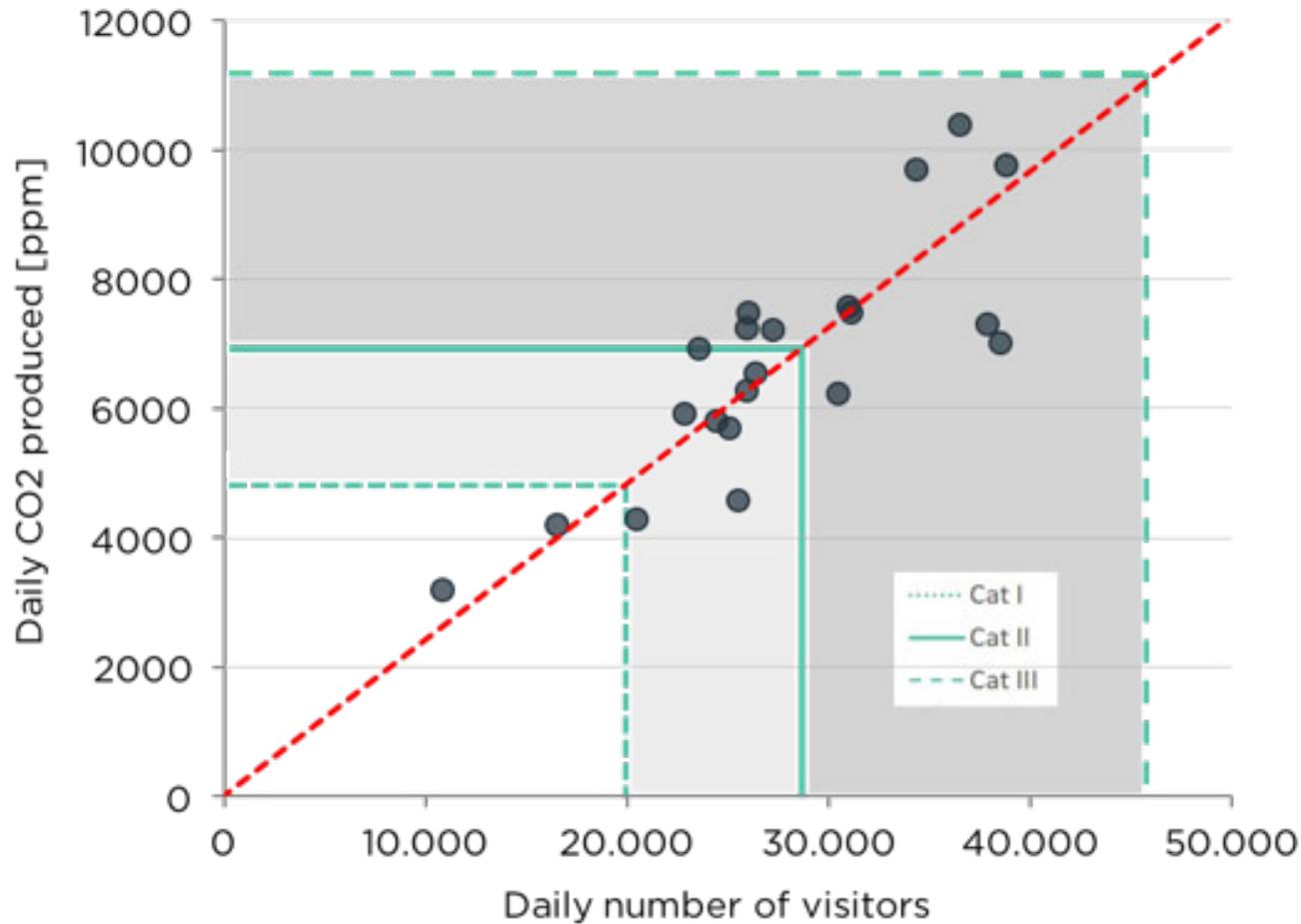
35% Energy Saving

30.000 sqm

2 Days installation

100% Comfort

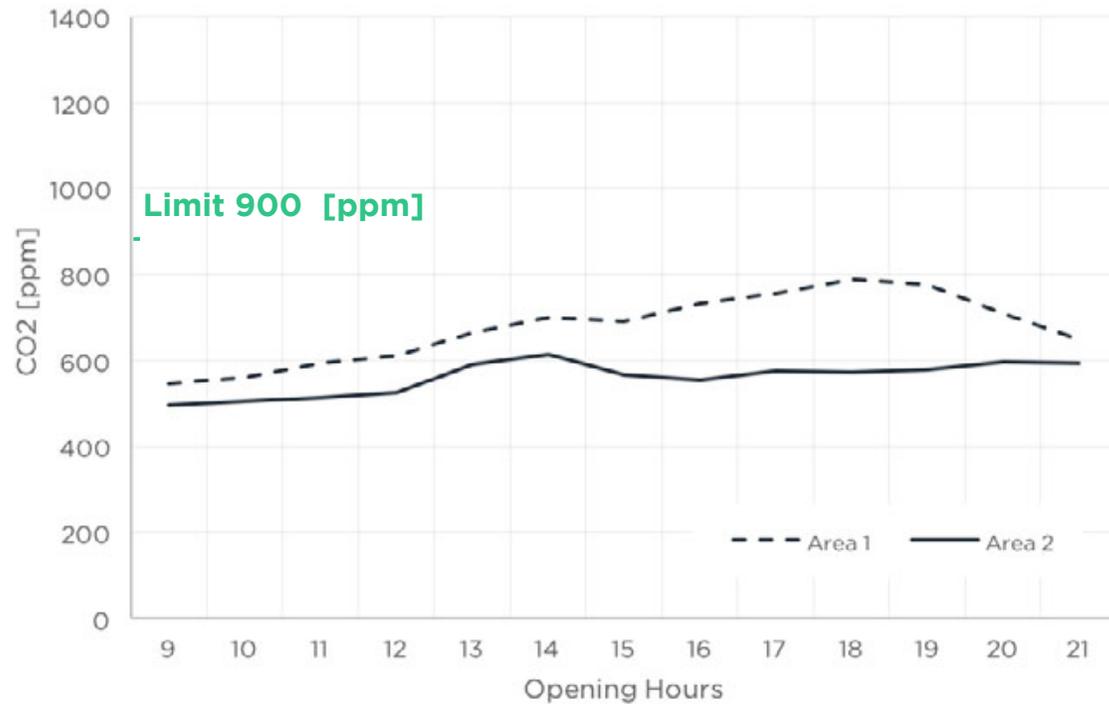
High level of air quality degradation due to visitors



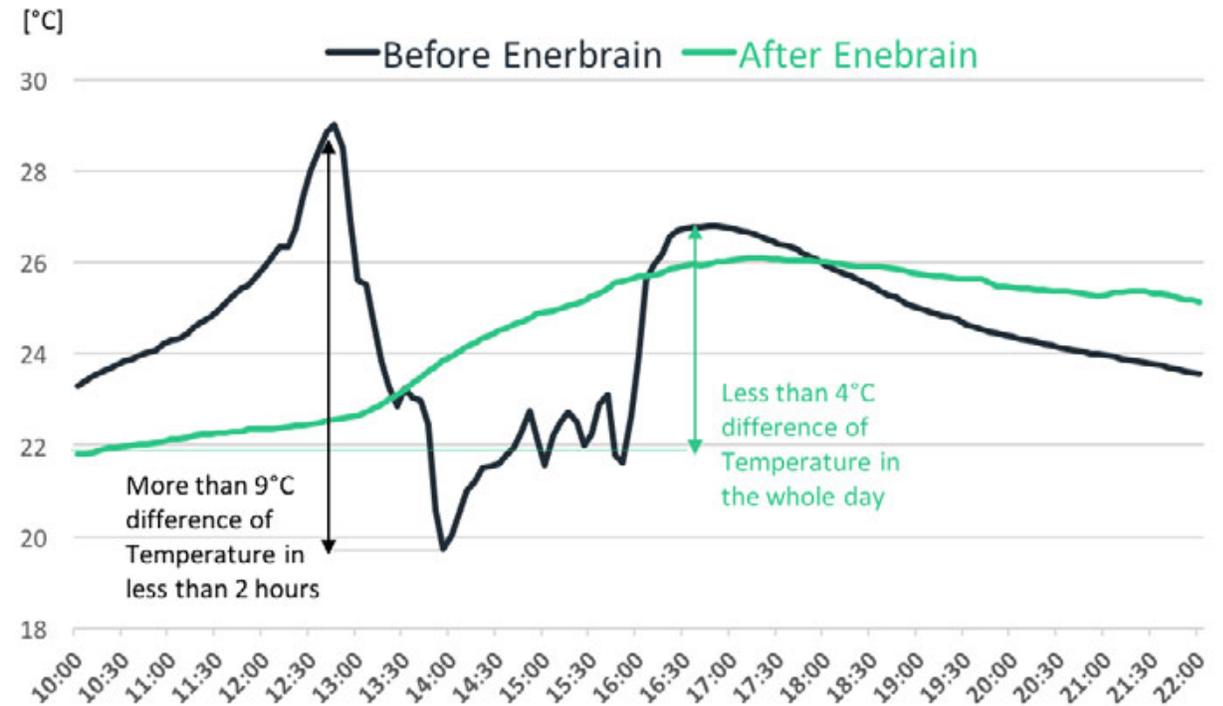
During peak hours in the food court CO₂ levels reached 2.000ppm because of manual management of air circulation

Air quality improvement thanks to Enerbrain

Air circulation is automatically managed below law limits by Enerbrain

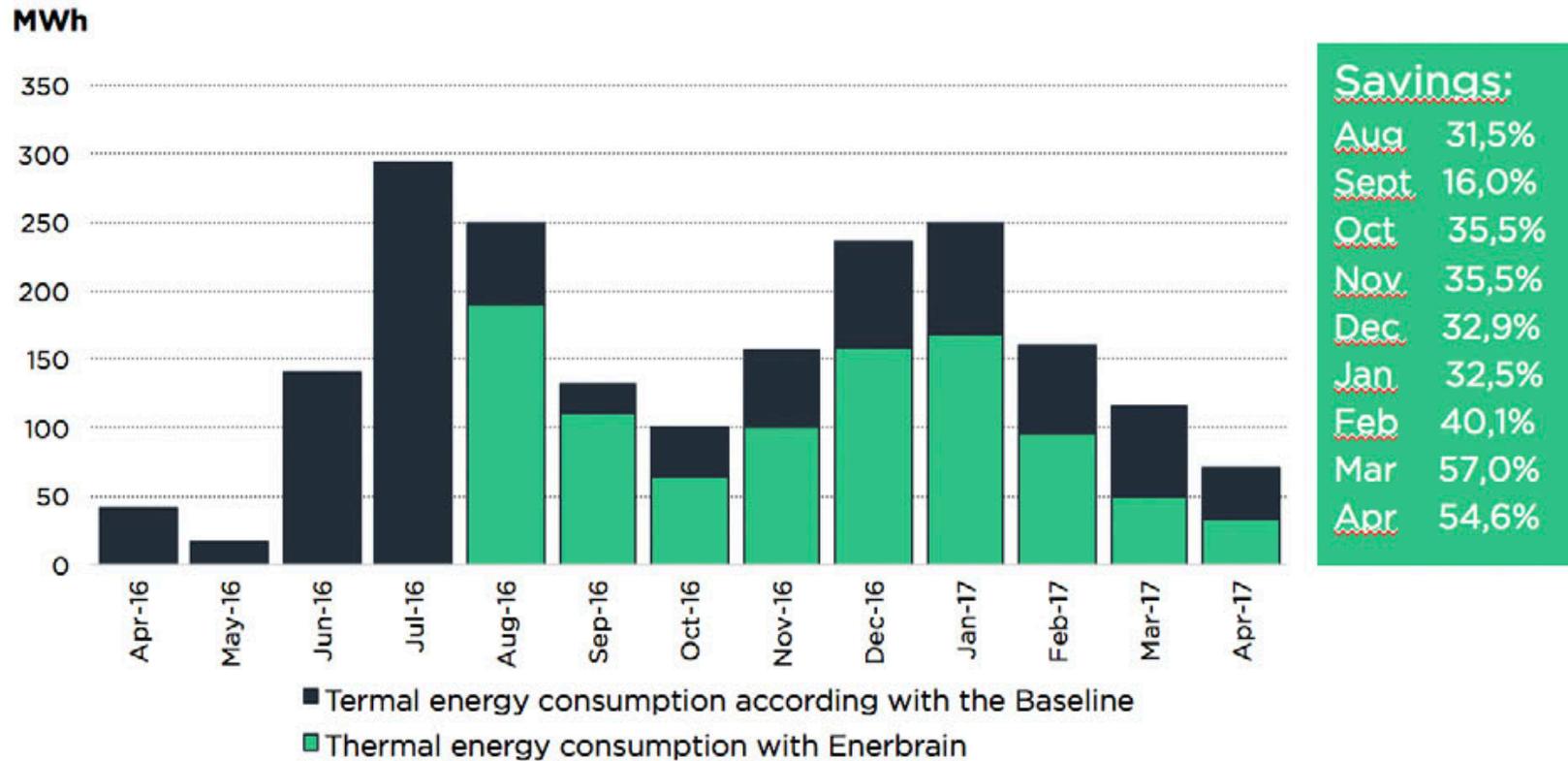


Indoor temperature variations during lunch are offset by Enerbrain



Over 35% energy savings, all seasons

Thermal energy consumption before and after Enerbrain





Case Study - Autogrill



Restaurant + Retail
Ceriale, Italy

31% Energy Saving

1.000 sqm

4 Hours installation

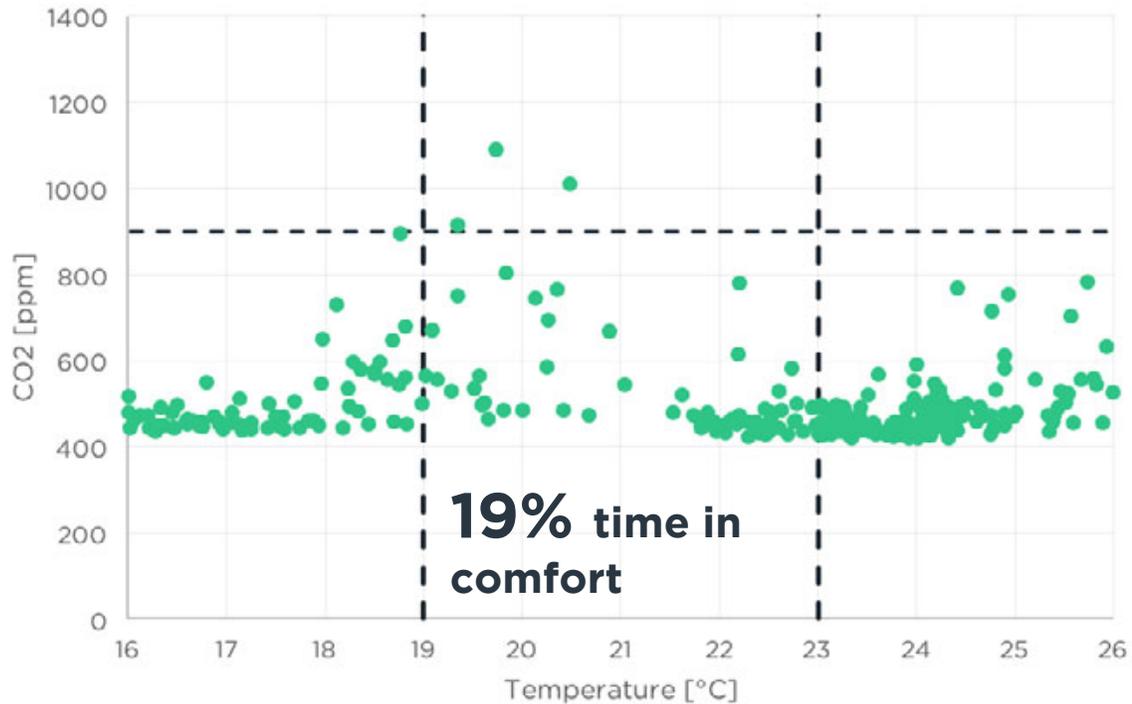
100% Comfort



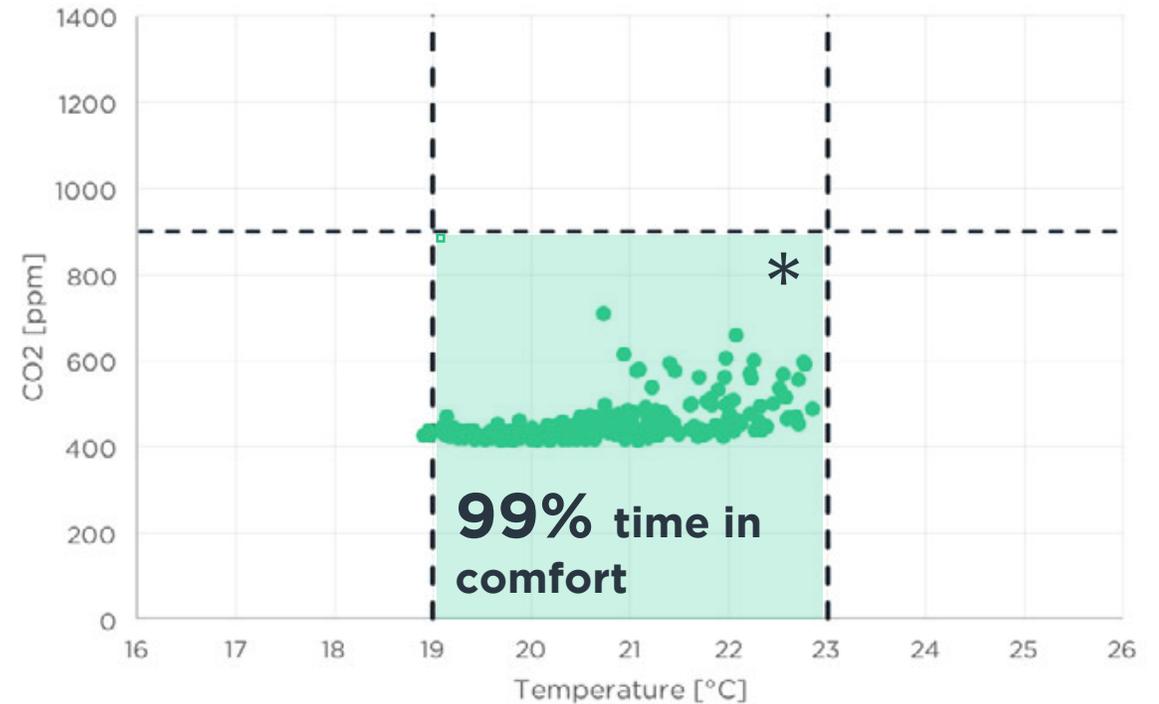
Improved time in comfort thanks to Enerbrain

Hourly comfort monitoring during a week (7days x 24h, T and CO₂)

Pre Enerbrain



Post Enerbrain



Enerbrain: Team, Partners, Press & Awards

TEAM



PARTNERS



PRESS



AWARDS



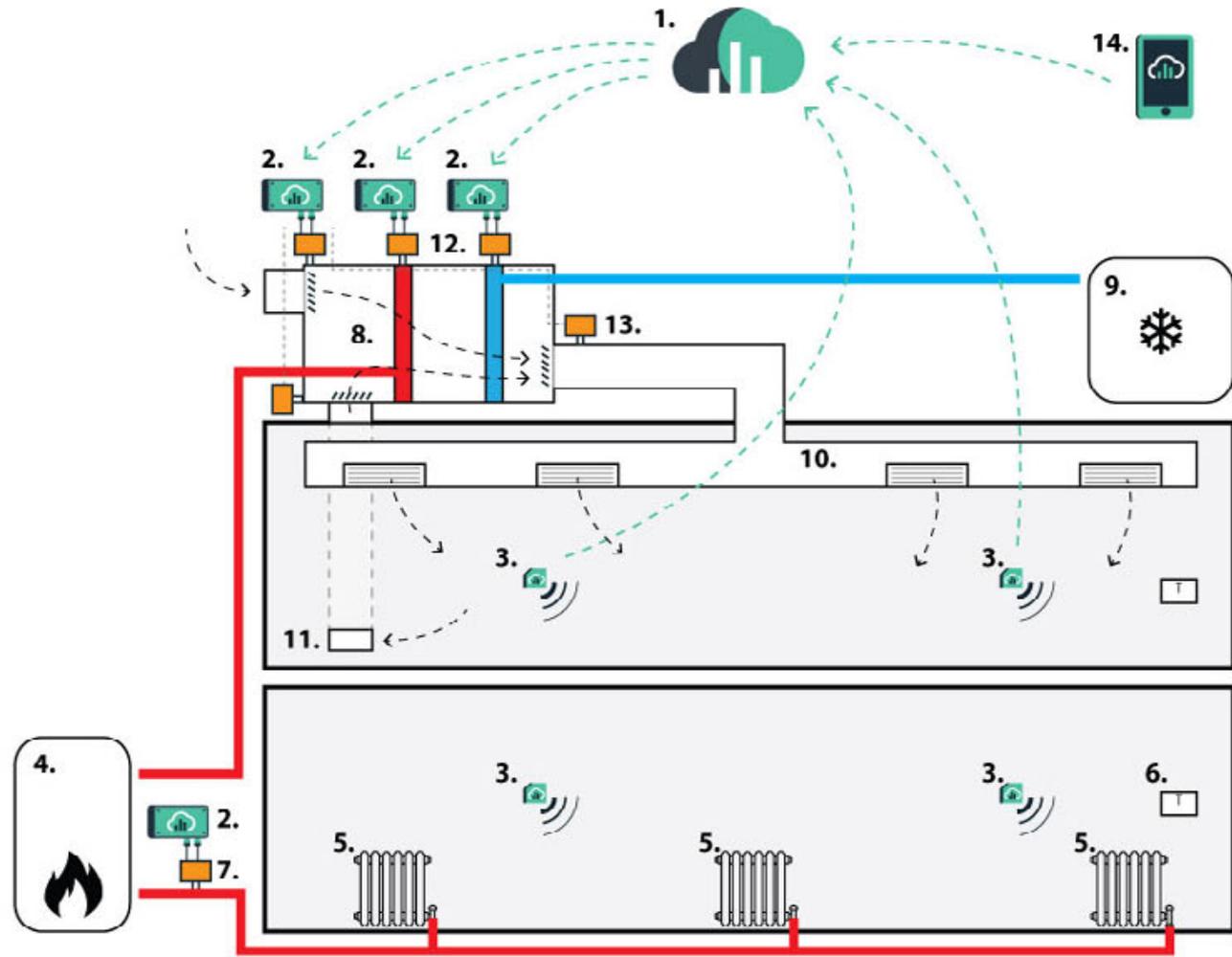


Technical details

Plug & Play integration with any HVAC system

THE ENERBRAIN SYSTEM

1. Algorithms and Enerbrain Cloud
2. Energy Node by Enerbrain
3. Sensors by Enerbrain
4. Existing heat generation
5. Existing water heaters
6. Existing thermostats
7. Existing 3-way valve
8. Air HVAC Unit
9. Existing Chiller
10. Existing outgoing air-ducts
11. Existing incoming air-ducts
12. 3-way HVAC valves (hot-cold)
13. 3-way HVAC valves (gates)
14. App to control set-points



Safety first: why we are different



TESTED

- CE and ROHS compliant
- **Each device** passes 3 different tests in different locations
- Each SW release is thoroughly tested live before rollout



FAILSAFE

- eNode is **electrically bypassed** by a built-in switch in case of failure or maintenance: HVAC **still works without** Enerbrain
- Our cloud and services rely on leading service providers for **safety, reliability & performance**



ENCRYPTED

- End-to-end encrypted communication via **LTE/3G using any provider available**
- Thanks to private connection services our IoT system is **not exposing data to the Internet**

Compatibility: why we are different

What's missing: truly smart HVAC control

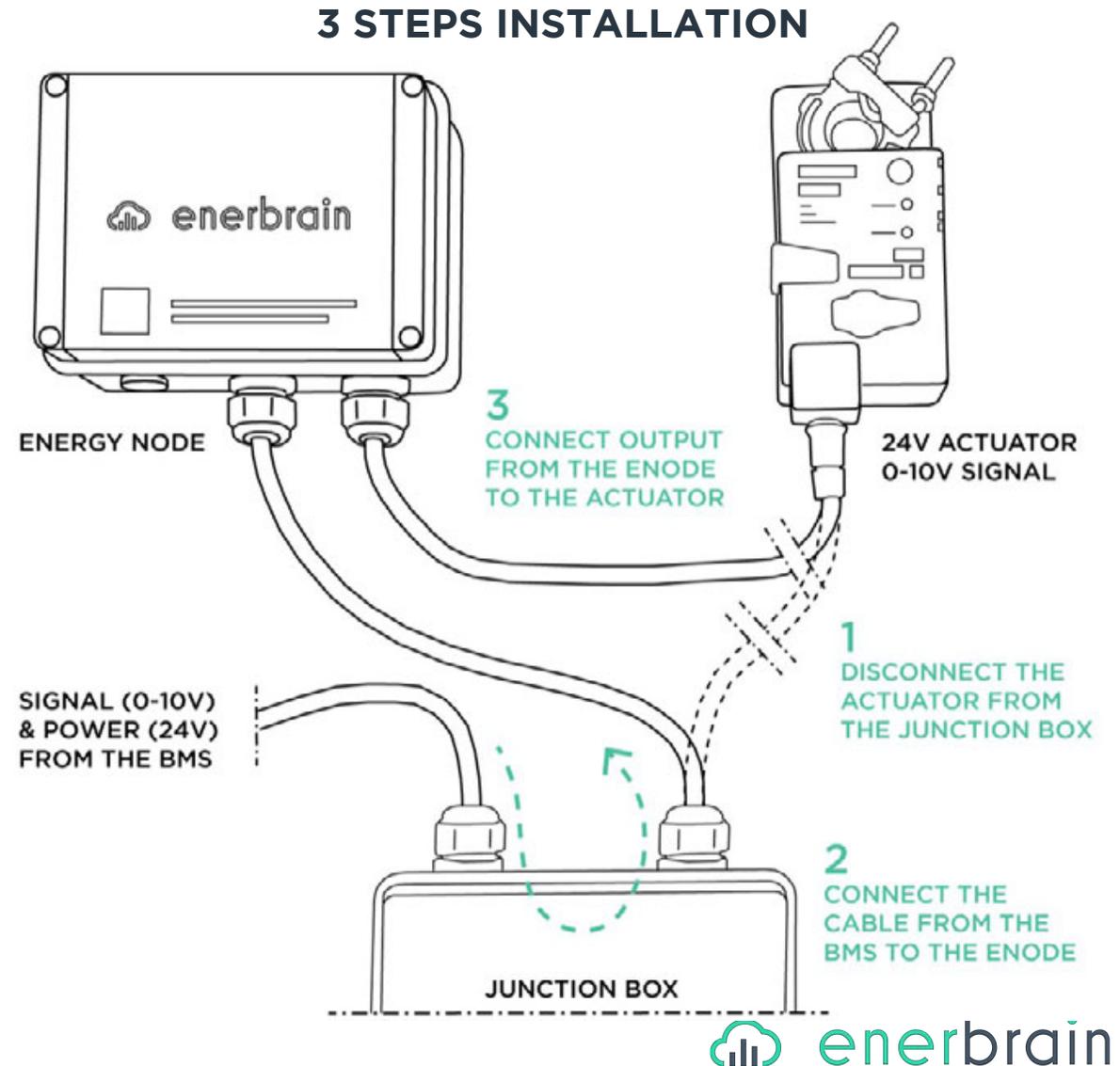
Replacing your equipment or hacking the BMS is not the way to go because:

- BMS communication protocols are unsafe, closed and many. It's expensive and lengthy
- The BMS collects little data from old sensors

We integrate to your HVAC with IoT devices

By making your HVAC actuators connected, Energy Cloud can control them in real time to set temperature, humidity, ventilation while monitoring energy usage and system status.

The actuators - **still connected to the BMS** - will take the input from Energy Cloud anytime it's possible **to maximize savings and comfort**.





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