MINISTÈRE
DE LA TRANSITION
ÉCOLOGIQUE
ET DE LA COHÉSION
DES TERRITOIRES
Liberté
Égalité
Fraternité

Air Booster

INNOVATIVE ENERGY-EFFICIENT CLADDING

The aerothermal solution to combat climate change and reduce energy bills.

GREENTECH INNOVATION

SOLAR IMPULSE EFFICIENT SOLUTION MAY 2021

IMPULSE PARTNERS
Strategy | Innovation | Performance

RÉGION Nouvelle-Aquitaine

BORDEAUX TECHNOWEST

LA FRENCH TECH BORDEAUX

NEO TERRA

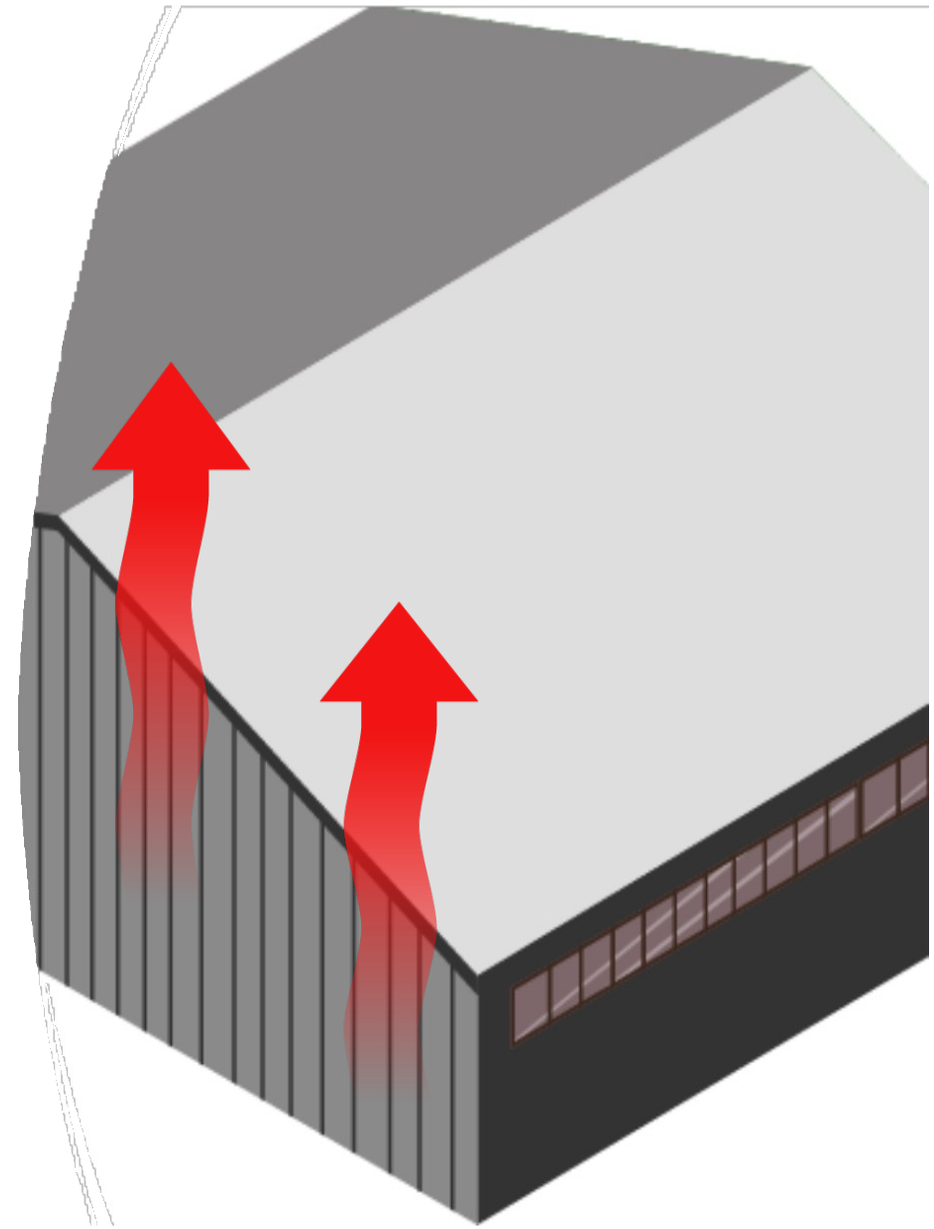
Winter,

When it's 10°C,

On a sunny day,

The temperature of the cladding sheet is between :

58 et 72°C



La solution : Le mur aérothermique R’ BOOSTER

Assembly principle

French Product

- 2 registered patents
- Trademark and design registered

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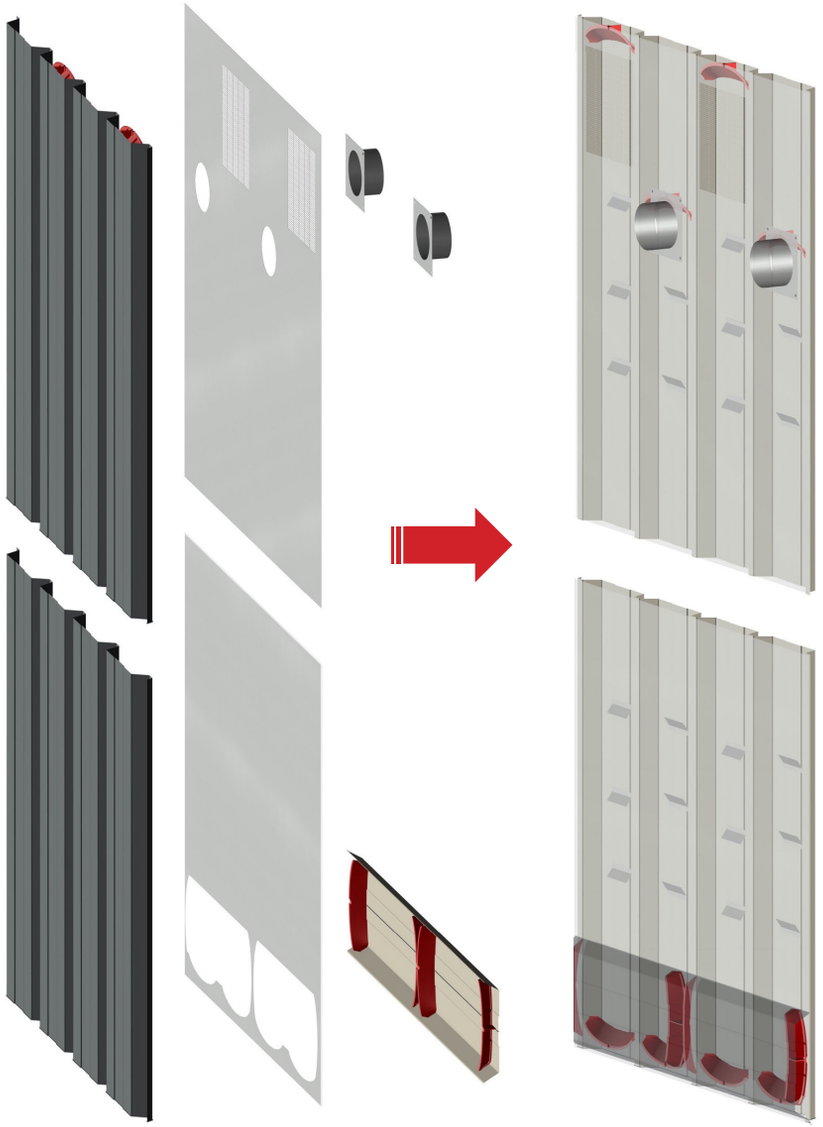
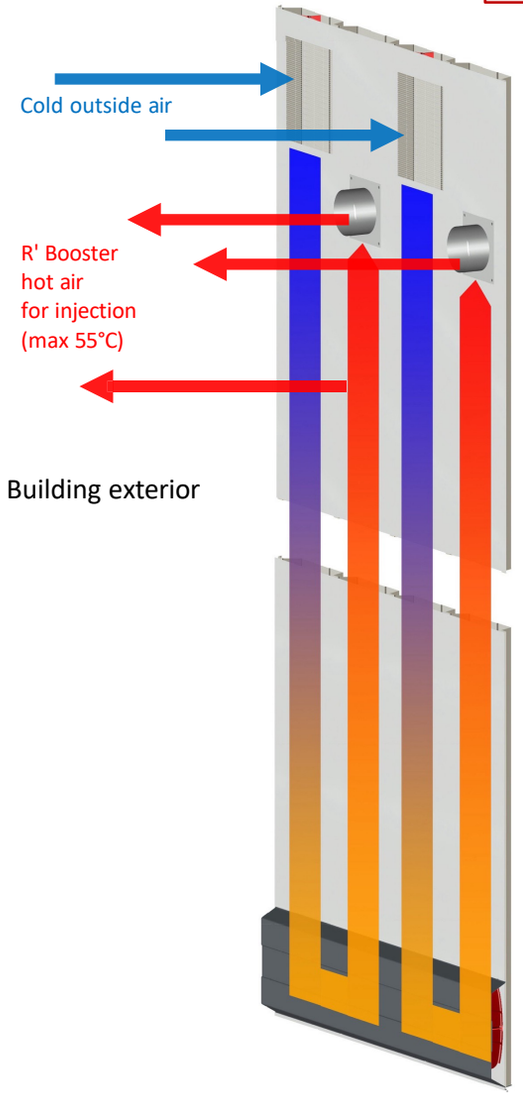
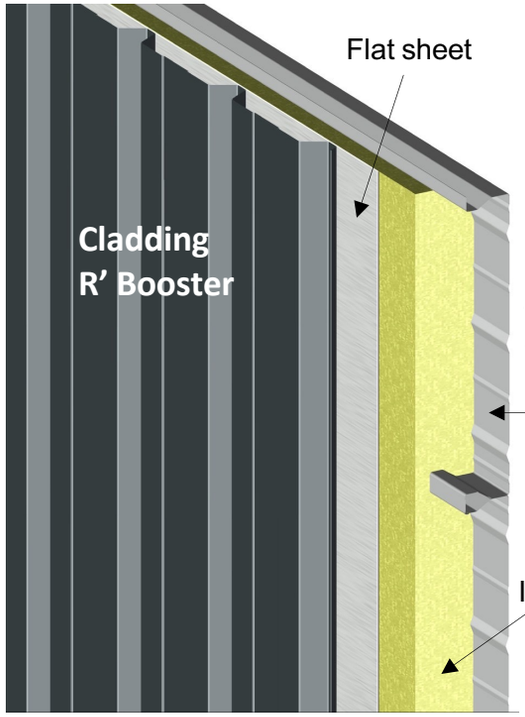


Siding view

Interior view



Transparency view



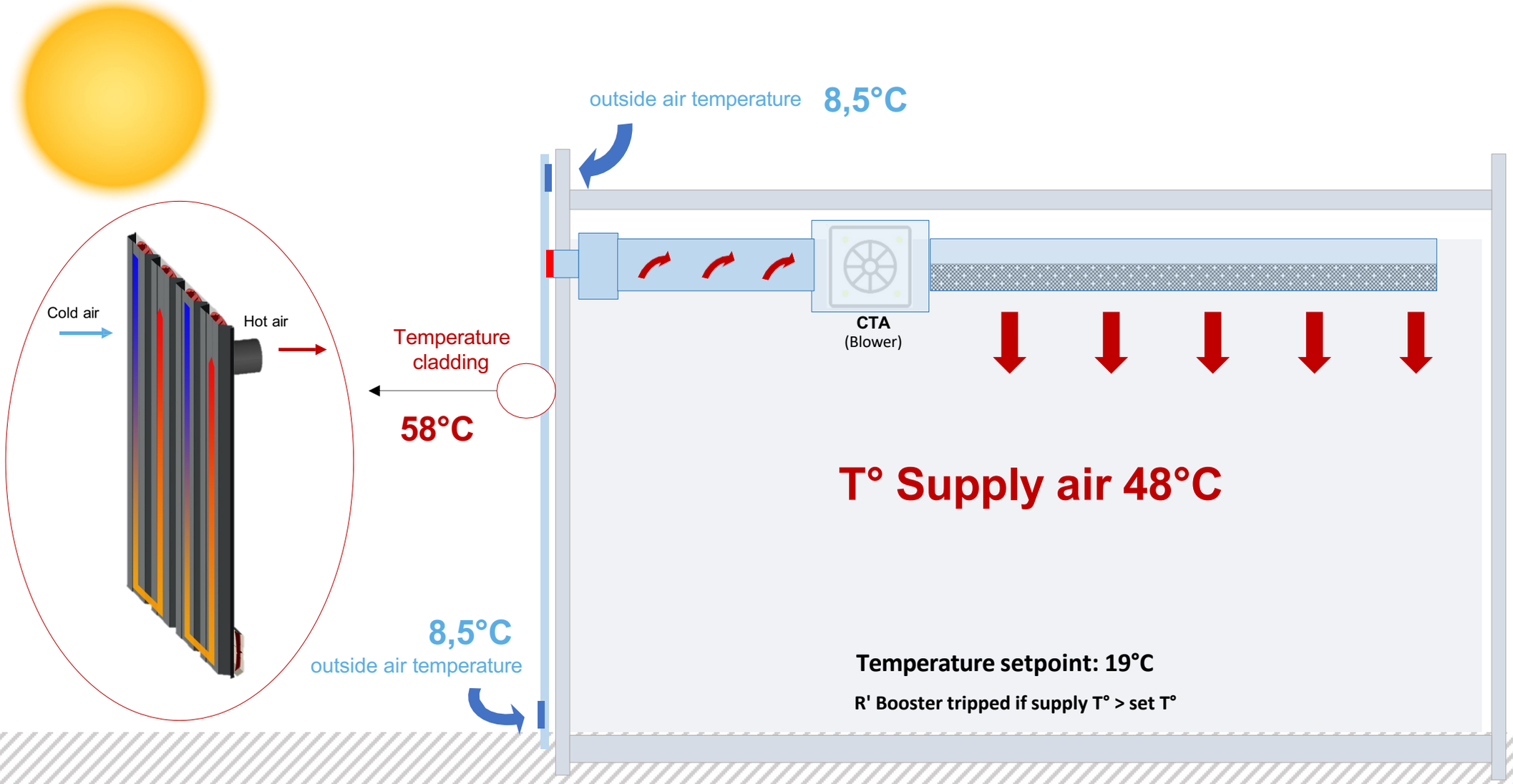
Wall mounting

Reliable > 30 years

Recyclable

Absence COV

Heating in winter (example)

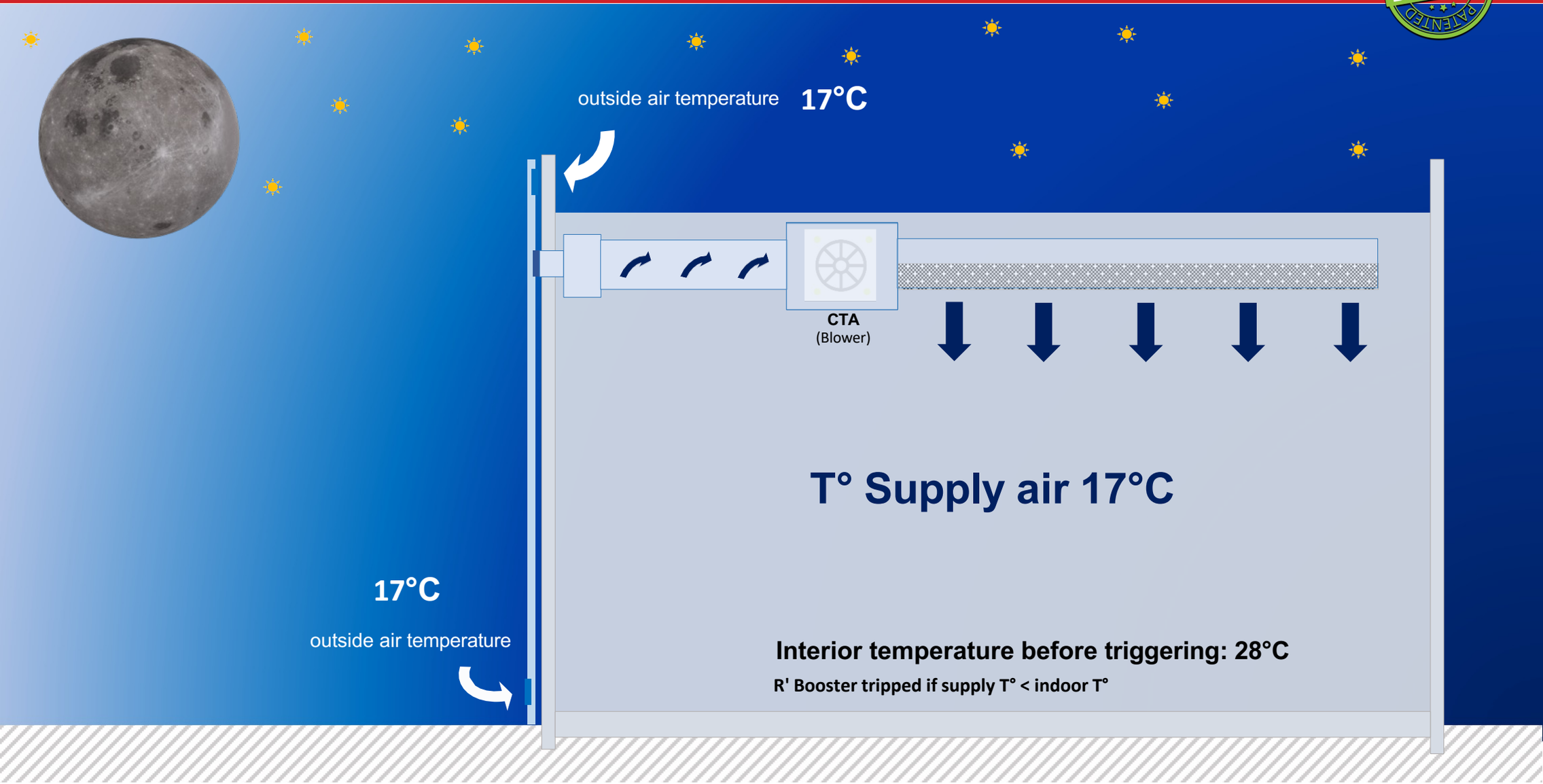


On a sunny winter's day, when the outside temperature is only 8.5°C, the air circulating in the ducts heats up on contact with the sheet metal, which is heated by the sun to 58°C.

The heated air reaches 48°C and is then conveyed into the building at a rate of 130m3/h every 2.5m2.

For a 1000m2 building, with 130m2 of aerothermal panels, you get a thermal output of 78,000 Wp.

Le Free-cooling l’été la nuit

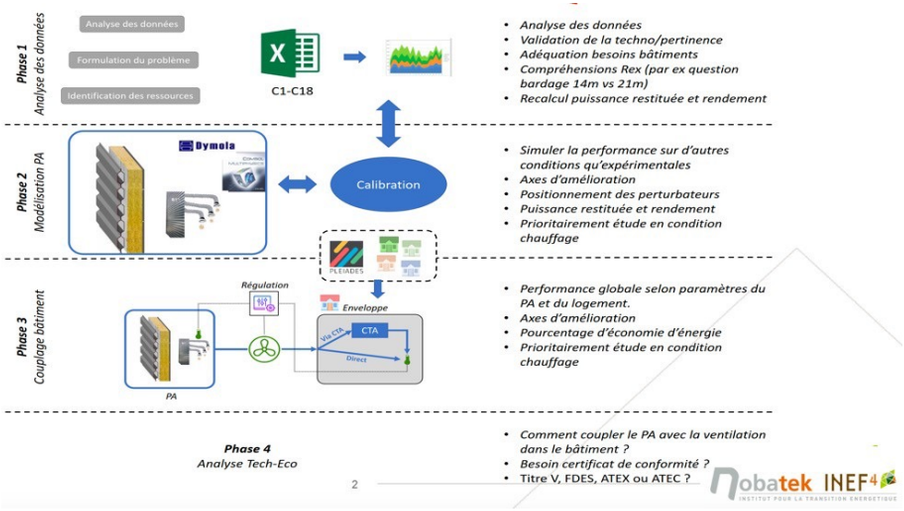


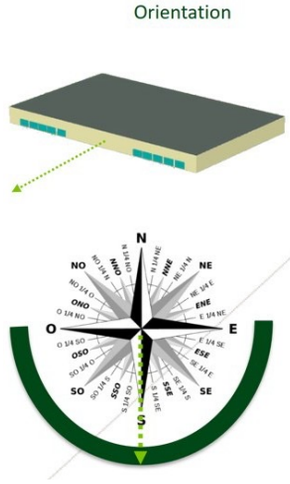
In summer, night-time temperatures regularly drop to between 13 and 20°C. Even during a heatwave, it's always colder outside than inside at some point during the night.
When the temperature outside falls below that inside, a sensor controls the air circulation and cools the temperature inside the building by 3 to 6°C, injecting thousands of m3/h of fresh air (free-cooling).

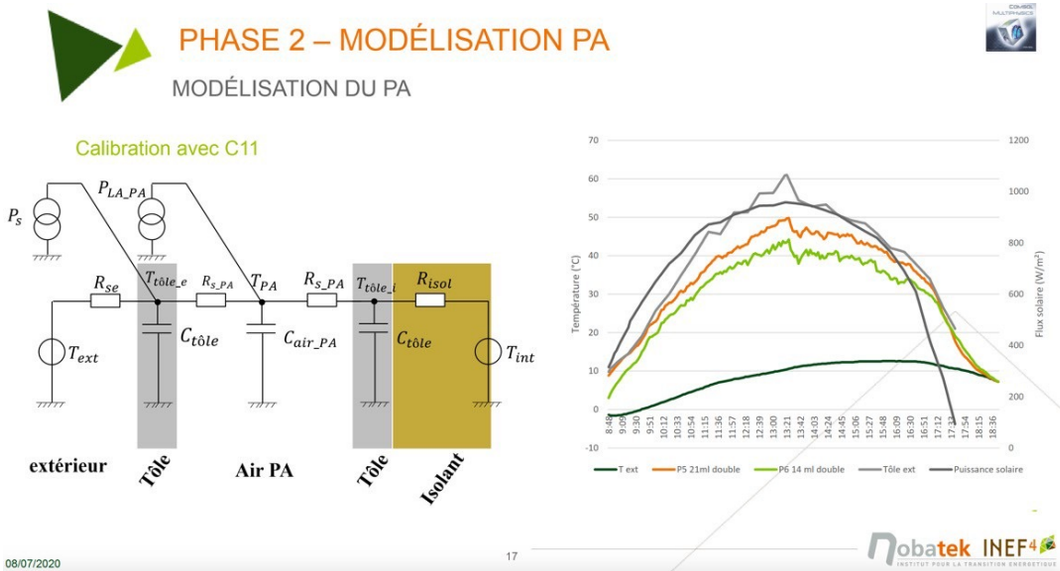
By the time you arrive in the morning, the air has been completely renewed several times, the temperature is comfortable for occupants and the need to switch on the air-conditioning is delayed.

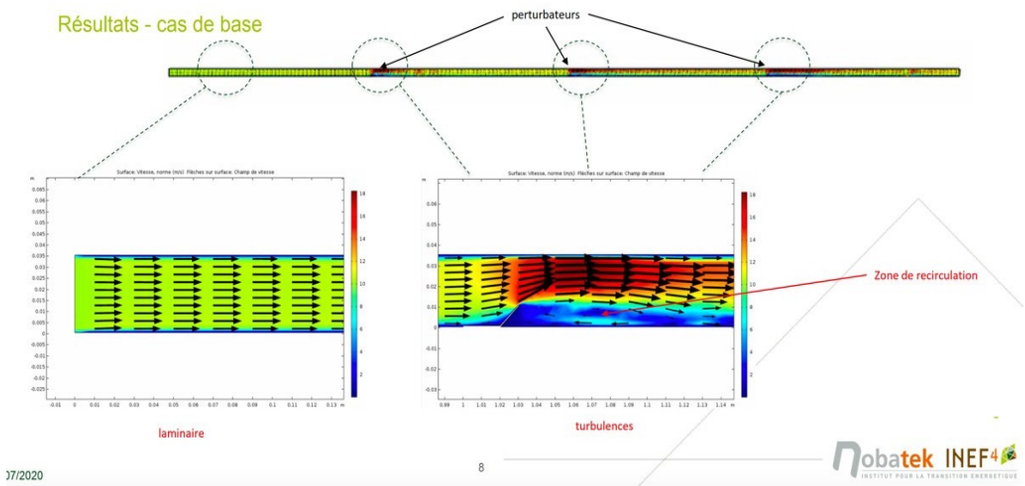
The NOBATEK design office

NOBATEK INEF4 is a private applied research center,
Institut national pour la **T**ransition **E**nergétique et environnementale du bâtiment.









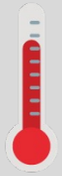
Low-cost, multi-purpose, carbon-free energy

Certified figures by NOBATEK INEF 4

Up to 83% savings

Heating

Increase of 41°C in winter *

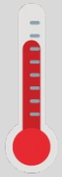


Free-cooling

3 to 6°C drop at night in summer

Hot water

All year round



Agricultural drying

Cereals, forages, fruit…

Industrial pre-heating

Plasterboard, wood, paper, linen…

R' Booster© : The solution that turns walls into giant radiators.

A thermostat maintains the desired temperature in your building with or without main heating.

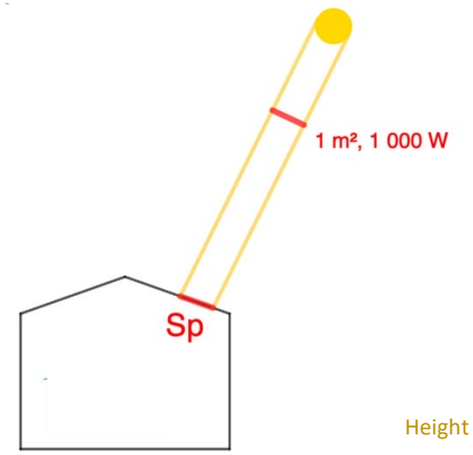
** Example :*
- Outside temperature: 8°C
- Temperature blown into the building: 49°C

Why so much power ?

Summer,

Because of the high angle of the sun, solar energy recovery is more favourable on the roof than on the façade.

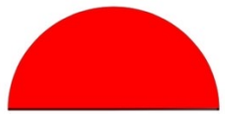
Solar flux recovery on roofs



Height of sun at zénith = 64.27°

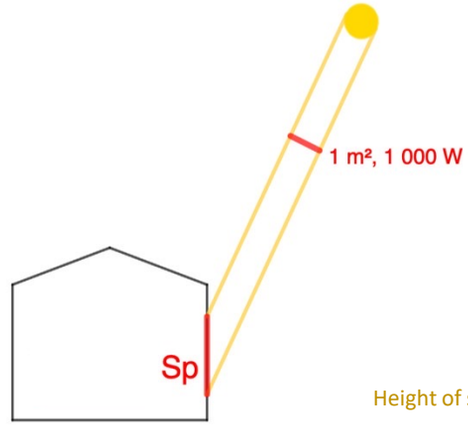
Projected surface (Sp) = 1.01 m²

Recovered power = 995 W/m²



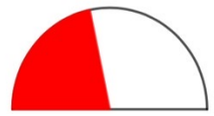
99.5 %

Facade solar flux recovery with Air Booster



Height of sun at zénith = 64.27°

43.41 %

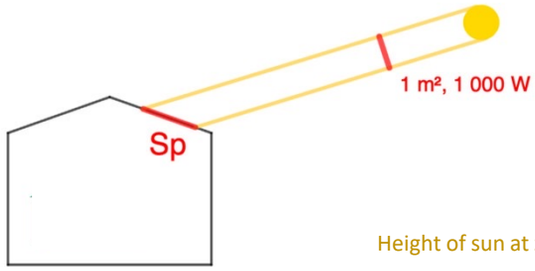


Projected surface (Sp) = 2.3 m²

Recovered power = 434.13 W/m²

Winter,

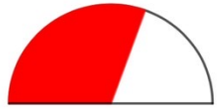
At a time when we need it most, solar energy recovery on facades is far more favorable than on roofs.



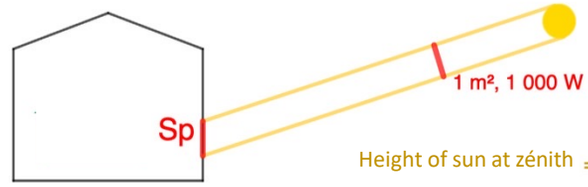
Height of sun at zénith = 17.52°

Projected surface (Sp) = 1.64 m²

Recovered power = 609.04 W/m²



60.9 %



Height of sun at zénith = 17.52°

95.36 %

Projected surface (Sp) = 1.05 m²

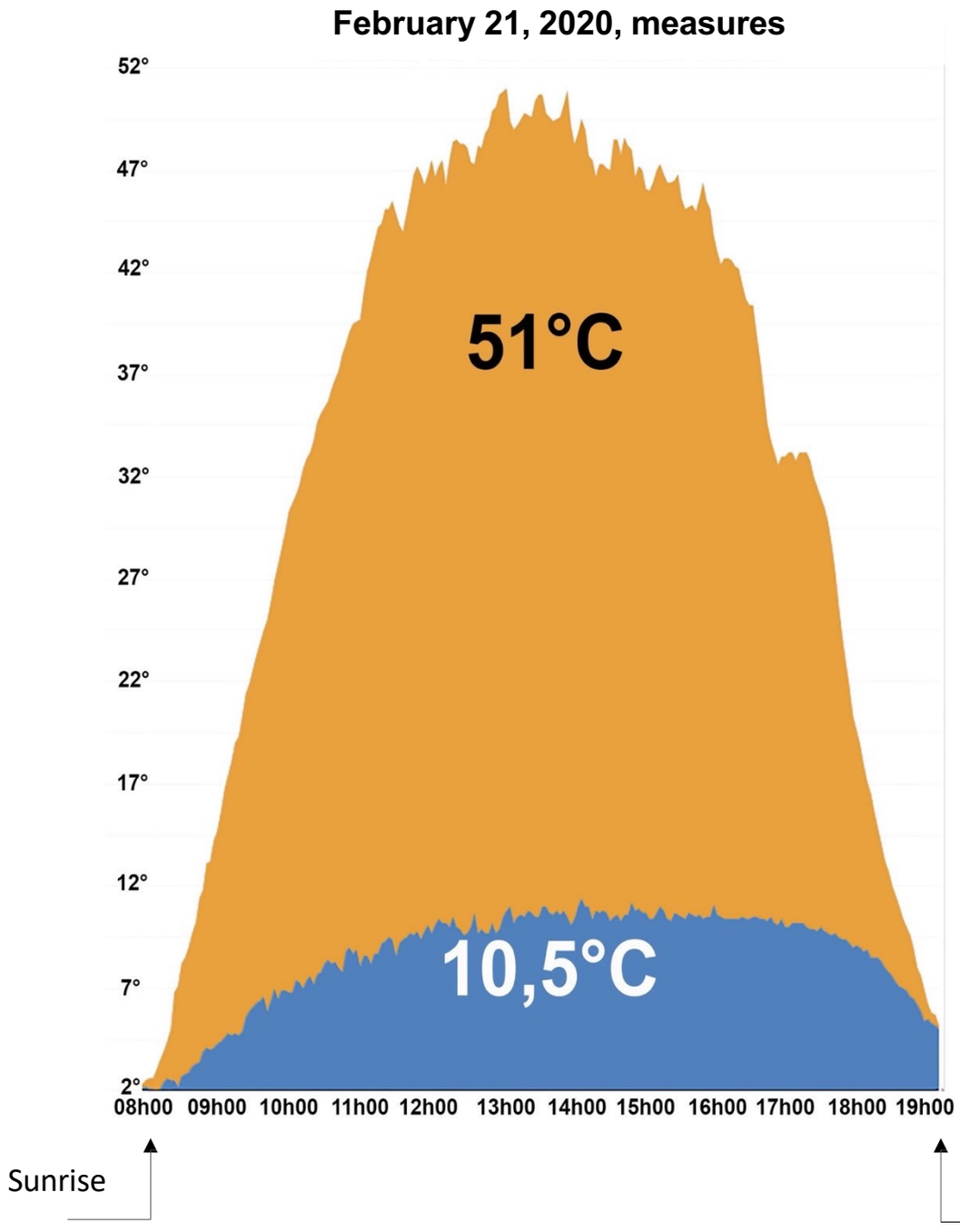
Recovered power = 953.61 W/m²

A powerful power generation solution

Max Power
R' Booster©
600
Peak watts/m2

3x more powerful than photovoltaics

Max Power
Photovoltaic
200 peak watts/m2



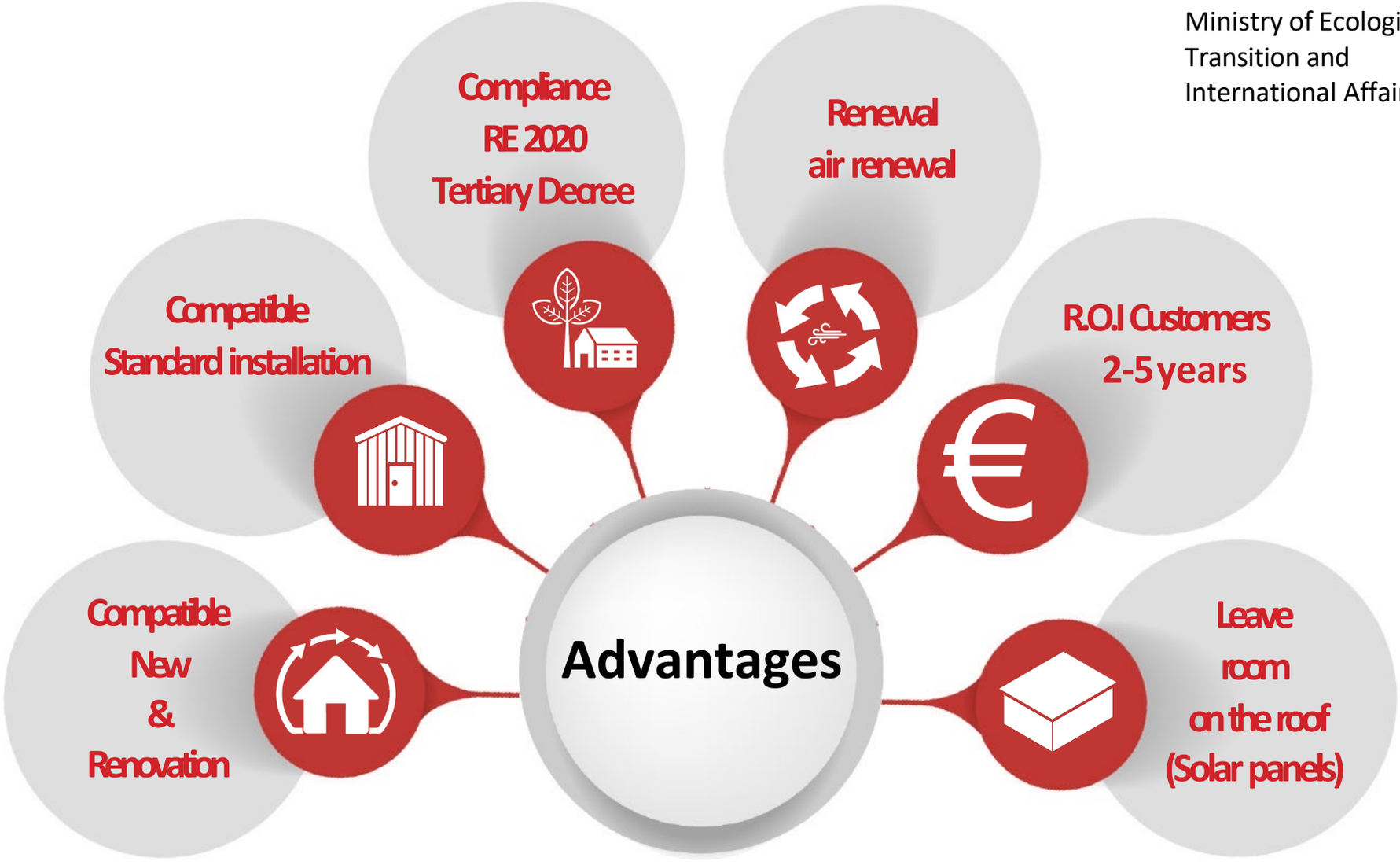
In orange : Air temperature at system outlet, between sunrise and sunset.

Certified figures by NOBATEK INEF[4]

In Blue : Outside air temperature between sunrise and sunset.

Added value

Label of the French Ministry of Ecological Transition and International Affairs



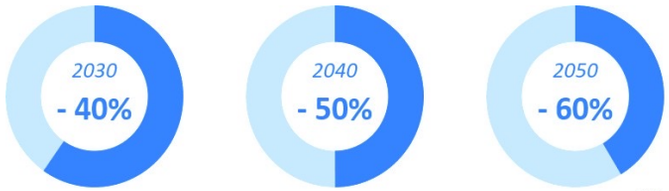
New regulations

Rénovation

DECRET tertiaire

The tertiary sector decree now requires companies to achieve energy savings in tertiary buildings over 1,000 m². The decree obliges companies to reduce their energy consumption by making annual declarations, and provides for fines and "name and shame" if targets are not met.

Ambitious goals



*Compared with 2010 or a subsequent year

New

RE 2020
RÉGLEMENTATION ENVIRONNEMENTALE

From January 1, 2022, the new RE2020 regulations will gradually require new buildings to produce more energy than they consume over the year.
Objective: "Positive Energy Building".

What's more: "requirements will be progressively tightened every three years until 2031", says the French Ministry of Ecological Transition.

The R' Booster© solution complies perfectly with these 2 new regulations

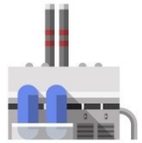
Cases of application

List of buldings :

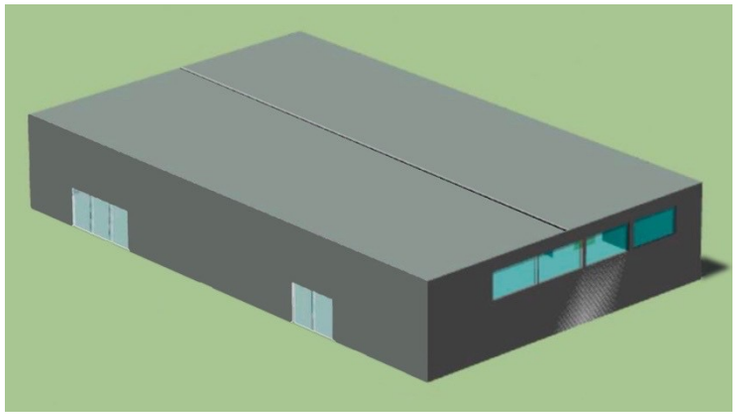

Commercial


For office use

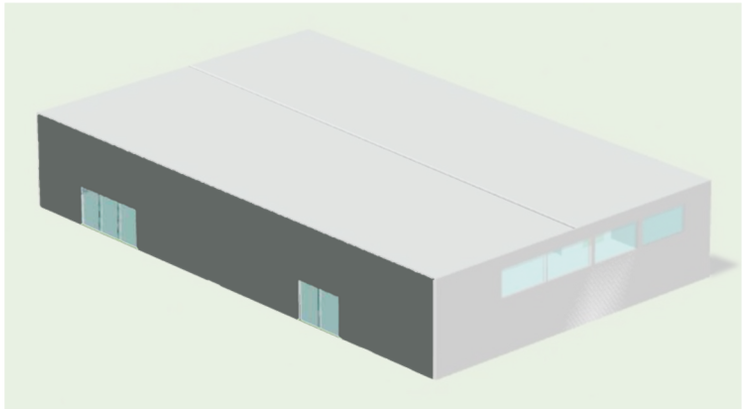

Storage / Logistics


Industrials

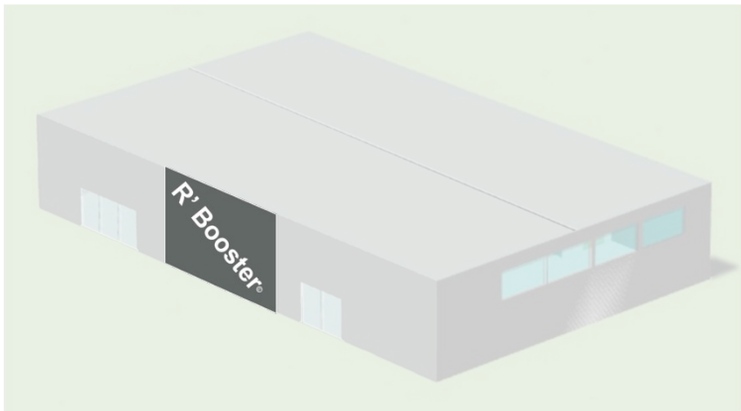

Agricultural



1000m² on the ground



300m² southernmost facade



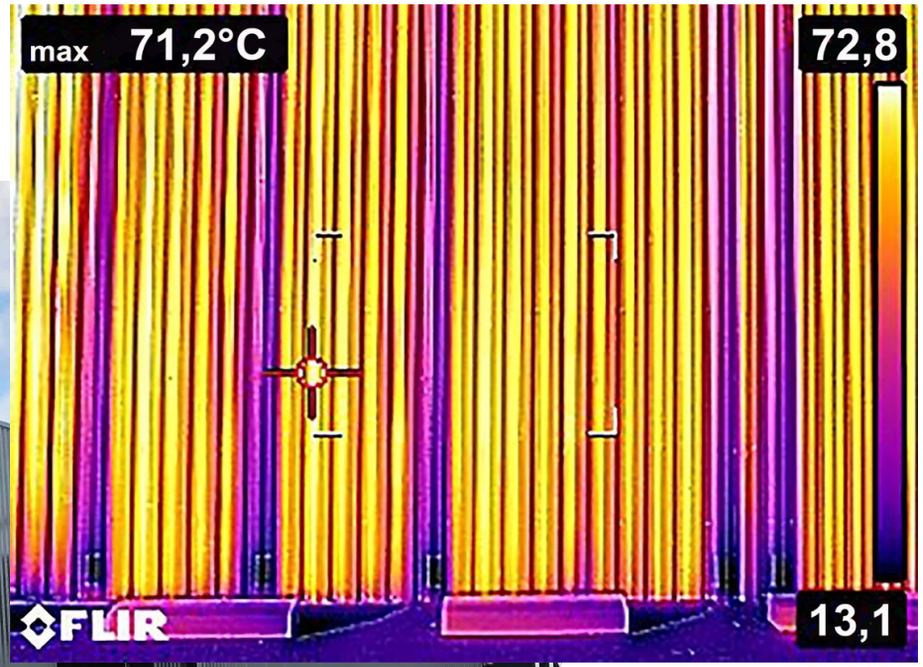
150m² of panels R' Booster©

For a building averaging 7m in height,
The R' Booster© solution takes up **only 13% to 17%** of your building's floor space.

The R’ Booster solution Wall

Before installing R' Booster

Thermal camera image

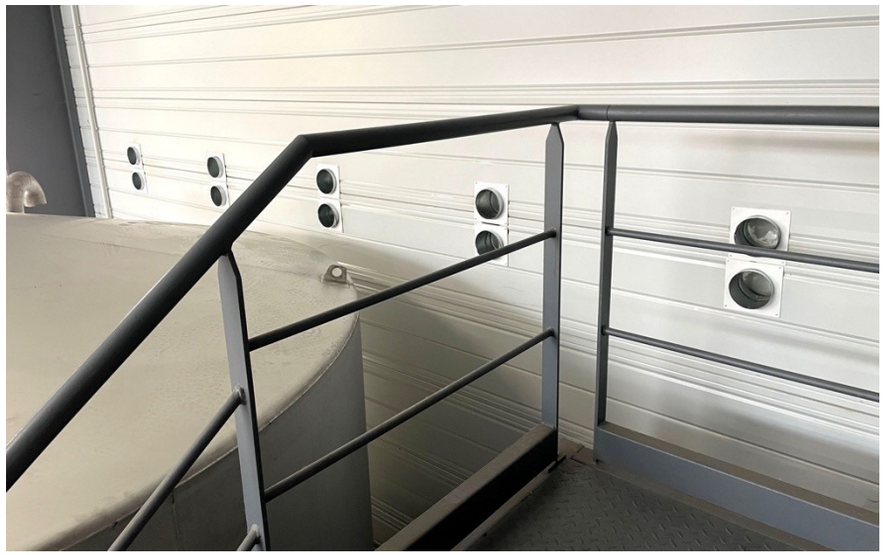


T° Outside : **13.1°C**
T° Sheet metal : **71°C**

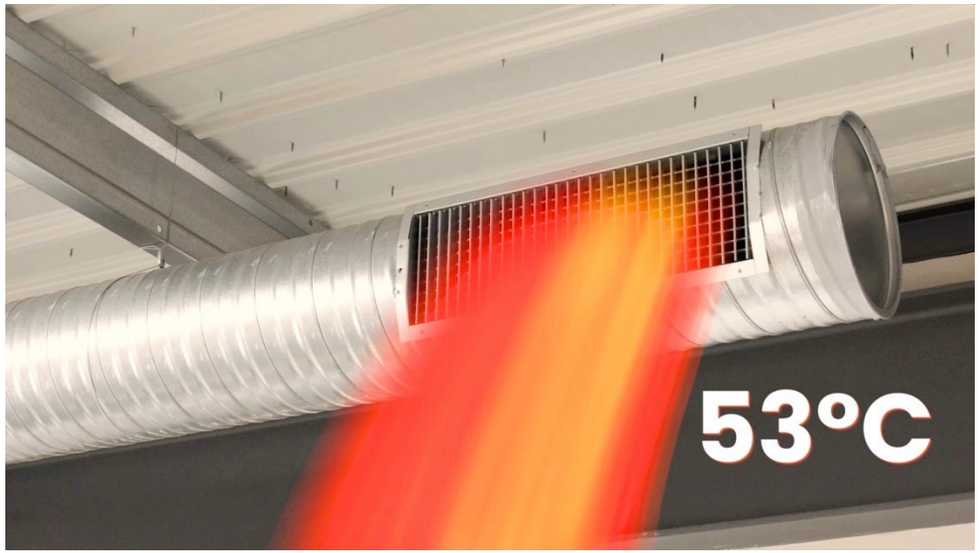
The R’ Booster solution Wall

During the installation

The R’ Booster solution Wall



After the installation



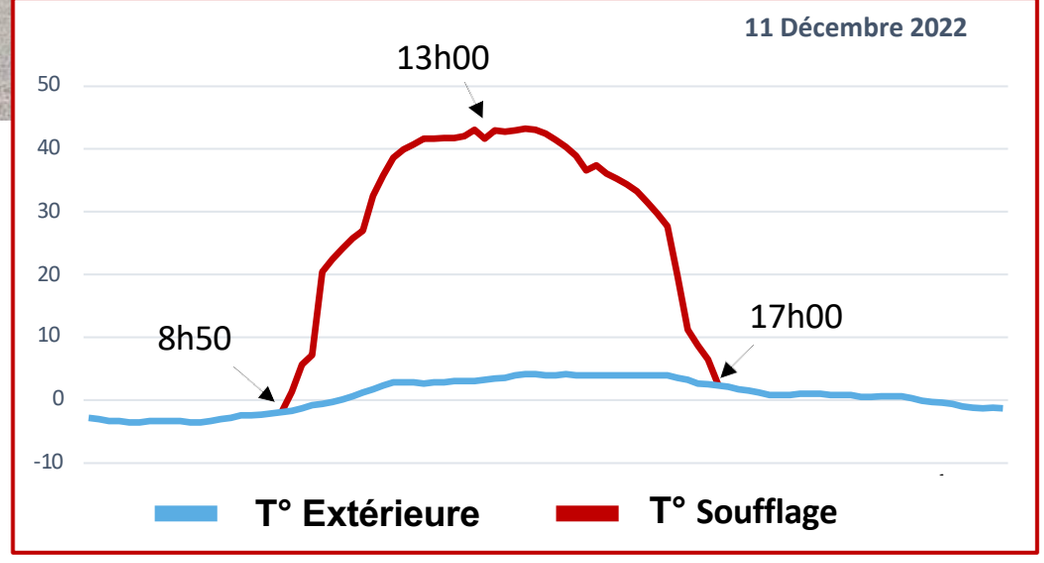
The R' Booster solution Wall

Result during the winter of 2022-2023
(in Bordeaux)

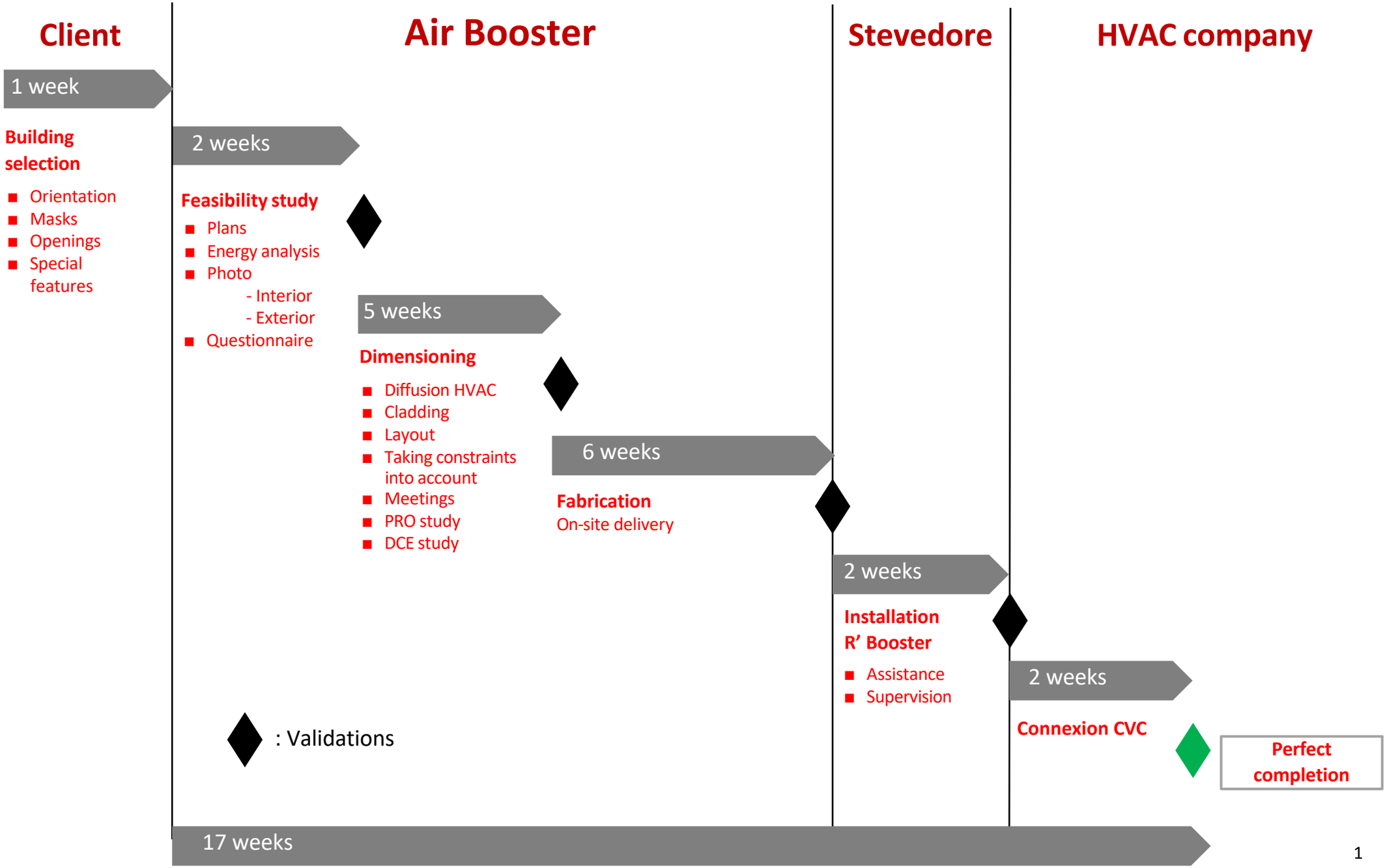
Max T° (Delta T): **40.04 °C**
T° max supply air : **56.7 °C** (12/11/2022)
T° average supply air : **29.6 °C**

Max power : **29 kW**
Max power/m2 : **605 W/m2**

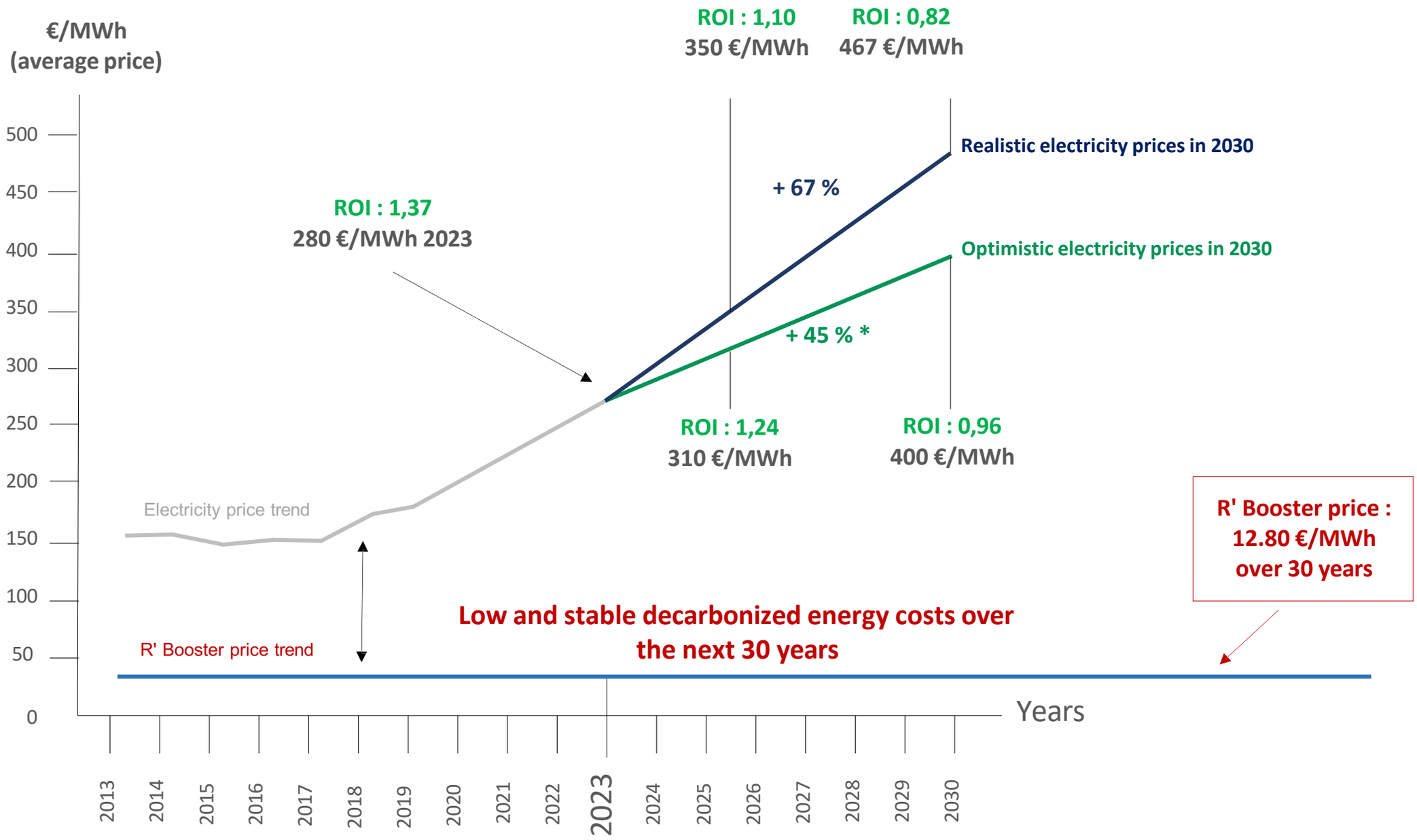
- Surface Air Booster : 52 m²
- Total flow : 2280 m³/h
- Pressure losses : 110 Pa



Roadmap for 300 to 400m2 of R' Booster cladding



Graph showing ROI* (total recoverable energy) excluding HVAC and free-cooling



* Based on +45% over the next 10 years VS +52% over the last 10. (source senat.fr)
* ROI: Return On Investment.

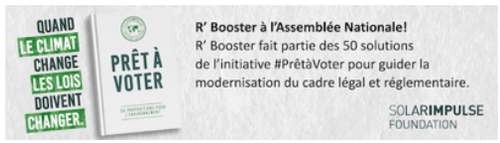
The different prizes

October 2023
Finalist **Clean Tech Open France**

July 2023
Air Booster is awarded **the GREENTECH INNOVATION label** by the **French Ministry of Ecological Transition**.

April 2023
Presentation of the R' Booster solution to **Mr. Bruno LE Maire** as part of **the Green Industry Bill**.

October 2022
R' Booster is **transformed into a bill** and presented to **the French National Assembly.**



September 2021
Air Booster voted **low-carbon solution by the Eiffage Group.**

May 2021
Award of the international **Solar Impulse Efficient Solution label**

January 2021
Best Startup **Award / CES LAS VEGAS**

October 2020
Special prize from the Grand Jury for innovation and sustainable construction at the final of the **DOMOLANDES technology park competition** in Paris.

January 2020
1st prize in Bordeaux Métropole Energie's call for projects to integrate Bordeaux Technowest

Air Booster

INNOVATIVE ENERGY-EFFICIENT CLADDING

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