Auchan

OXYCOM
natural air conditioning

CASE STUDY

Energy-saving Rooftop Retrofit for Auchan

The innovative Oxyma Rooftop Retrofit with OXYCOM's IntrCooll delivers energy savings, a better indoor climate, and ESG compliance.

Summary

At the Auchan hypermarket in Soroksár (Hungary), the operations team was dealing with a familiar challenge in the retail industry: the aging rooftop HVAC units were becoming less reliable and using more energy every year. This affected employee comfort and increased the risk of fresh products spoiling, and it also caused issues with in-store equipment and systems. With ESG requirements and sustainability regulations becoming stricter, the potential for financial penalties had become a real concern.

Interviewed

- Gábor Bánfalvi — Technical and Investment Director at Auchan
- Bence Arnóczki — Project Manager at Oxyma

About Auchan

Auchan has been active in the international retail sector for more than 50 years. With an extensive network of hypermarkets and supermarkets, it offers a wide range of food, non-food products, and services to millions of customers worldwide.

The store was facing the challenge of meeting a mandatory energy-reduction target of no less than 7.78 million kWh. This forced the management team to make a difficult choice:

- Purchase Energy Saving Certificates (ESC) on the market,
- Accept and pay the penalties,
- Or invest in a comprehensive modernization program.

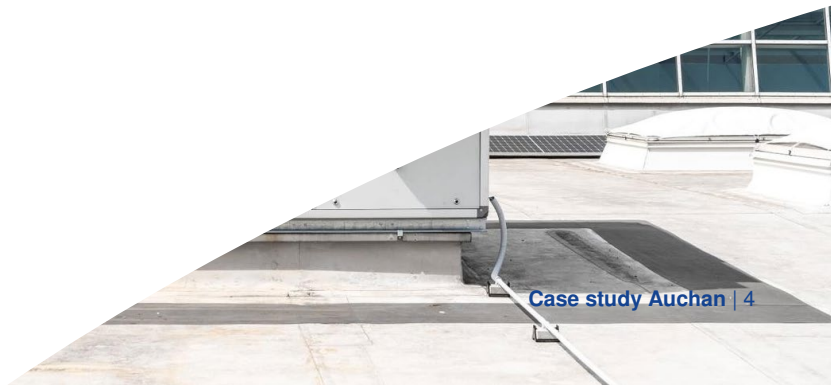
After extensive research, the team chose Oxyma Systems Kft. and their groundbreaking Rooftop Retrofit solution with OXYCOM's two-stage adiabatich cooling system, a system developed by experts in air and water management and specifically designed for fast and effective modernization in situations like this.

A trusted brand facing a complex challenge

The Auchan hypermarket in Soroksár is a key retail hub in one of Budapest's busiest commercial areas. Like many older stores, the location relied on nine rooftop HVAC units for cooling, heating, and ventilation. However, these systems had long exceeded their technical lifespan. The result was rising maintenance costs, increasing breakdowns, and an indoor climate that was becoming ever harder to keep stable and comfortable.

Key challenges of the existing system:

- Outdated, low-efficiency compressor-based cooling (COP 2.0–2.5)
- Obsolete controls and poor thermal insulation
- Aging fans and heating coils
- Significant annual refrigerant losses. Often involving banned or phase-out HFO/HFC gases



The challenges

The HVAC issues faced by Auchan Soroksár were typical of large-scale retail buildings still relying on outdated rooftop systems:

Inadequate performance during summer peaks
The aging rooftop units struggled to meet demand, failing to maintain the target 25°C indoor temperature.

High energy costs
The system's inefficiency translated directly into rising operational expenses.

Insufficient fresh air supply
Ventilation fell short in busy retail areas and employee work zones.

Constant failures and maintenance
Frequent breakdowns disrupted daily operations and increased service costs.

ESG and regulatory pressures
Tightening standards around refrigerants, emissions, and energy consumption made the legacy system increasingly unsustainable.

Auchan's choice was a **Rooftop Retrofit**, a state-of the art, future-proof solution. One that meets all the performance, comfort, and sustainability requirements without compromising the installation effort of a standard rooftop unit replacement.

The Solution

Rooftop Retrofit: The Smart Alternative

Oxyma's Rooftop Retrofit program is a unique choice in the HVAC industry, offering a tailored suite and an energy- and cost-efficient alternative to traditional rooftop system replacements.

Given that Auchan's facility would have required a full system swap, Oxyma's advanced retrofit solution offered an opportunity to go beyond replacement and deliver long-term performance, sustainability, and control.

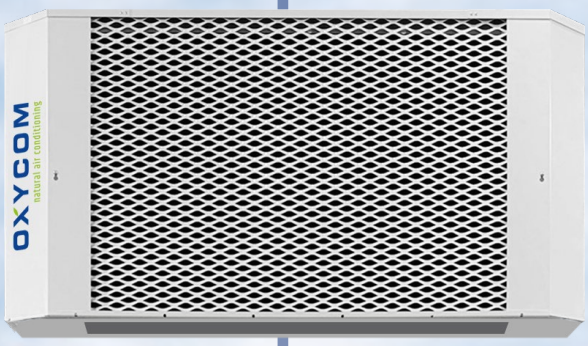
This plug-and-play system was precisely engineered to fit the store's existing setup. It preserved the original airflow pathways, pressure zones, mounting base, and duct connections, requiring no more installation effort than a conventional rooftop unit while delivering superior performance and a future-proof outcome.

The solution has two core components:

- a custom-engineered air handling unit (AHU) by WEGER
- an integrated IntrCooll IDEC cooling module from OXYCOM, a nature-inspired core of the system

IntrCooll Plus module

OXYCOM's revolutionary, award-winning air cooling unit based on two-stage adiabatic technology (SEER >15–30), integrated as a precooler into the AHU dramatically increases system performance and energy efficiency.



AHU module

The custom-designed air handling system for AUCHAN's existing setup was manufactured in accordance with RLT and ERP Eco-Design guidelines, as well as DIN and VDI standards, and is certified by EuroVent.

On-site installation

System installation began in the spring of 2025 and took approximately three weeks while the store remained fully operational.

During commissioning, we conducted detailed airflow and temperature measurements, validated the control logic and weather-based automation, and compared the real-time data with projections from the initial simulation.

> Initial tests confirmed that the system was delivering the forecasted results right from the start.

"Throughout the entire renovation, the store remained fully operational, without having to close for a single day. We organized the construction in a way that caused no disruption for either staff or customers. The entire upgrade took place virtually unnoticed."

Bence Arnóczki
Project Manager • Oxyma

The results

-85%

Cooling and ventilation energy savings
890.465 kWh/year --> 3215 GJ
--> €182,000/year saved

-43%

Fan workload reduction during winter
--> 134.089 kWh/year --> 484 GJ
--> €24,000/year saved

-365 tons of CO_2 emissions

-38% **Gas consumption**

-70%

Solar heat load

--> 13% cooling energy savings
--> 205 kW of reflected radiant heat through skylights
--> 191.000 kWh/year saved
--> €45,000/year saved

-40% **Less fresh fruit and vegetable waste**

0% F-gas **Natural refrigerant**

The results

25°C
Max. internal temperature

100%
Fresh supply air in the summer

-50%
Airborne dust concentration

“We were looking for a comprehensive solution for the store’s climate control, and Oxyma’s Rooftop Retrofit system delivered on all fronts: low energy consumption, reduced environmental impact, and easy maintenance. The typical ‘store air’ is gone. Instead, it feels as fresh just as if we were outdoors.”

Gábor Bánfalvi
Technical and Investment Director • Auchan

Create a healthy indoor climate with massive energy savings

OXYCOM is here to help. Our specialists give you free customized advice on sustainable two-stage adiabatic cooling. It’s a truly sustainable investment that empowers your facility to:

- Cut energy and operating costs dramatically
- Meet and exceed ESG and regulatory compliance
- Create a more comfortable, efficient, and healthy environment for everyone inside

Get free consultation →

About OXYCOM

At OXYCOM, we are pioneers. We design our highly innovative natural cooling systems with one goal: to reduce the global carbon footprint required to cool, ventilate, and heat buildings. Since 2002, we have been developing innovative adiabatic climate solutions. OXYCOM has years of experience with numerous applications worldwide. Our broad expertise enables us to complete any project with our partners/ installers successfully.

Discover more →