



CASE STUDY

Highly efficient sustainable comfort cooling for the leading consumer electronics brand of Saudi Arabia

A sustainable indoor climate to enhance consumers' experience and productivity of employees at 54% net cost savings.



Summary

Saudi Arabia's leading consumer electronics brand, eXtra, was able to provide highly efficient comfort cooling and maximal ventilation for their employees and customers with the patented two-stage evaporative cooling technology of Oxycom (IDEC). In cooperation with Dosan, Oxycom's IntraCooll was installed in two of the newly built stores of eXtra, proving to be the ultimate solution for highly efficient sustainable comfort cooling at 54% net cost savings.

About eXtra and Dosan:

eXtra

Founded in 2003, eXtra is the leading retail brand for consumer electronics and home appliances. With +12 Million shoppers, eXtra is the most popular electronics store with 42 stores across the Kingdom of Saudi Arabia. With their commitment to corporate social responsibility, eXtra always looks for sustainable solutions to enhance their customers' experience and employees' productivity and performance.

Dosan

Dosan, Oxycom's partner in Saudi Arabia is a trading and construction company. With almost 20 years in the field, the company specializes in building retail showrooms, shopping malls, hotels, restaurants and residential buildings. Recently they have set up a sister division dealing exclusively with Oxycom's sustainable air conditioning solutions for Saudi Arabia. Mohammed Mansour is the managing partner for this division.






Finding sustainable comfort cooling solutions to enhance customer experience and employee productivity

eXtra's core company mission is to be green and to work towards a sustainable future. With its vision of becoming the leading brand in the Middle East, eXtra also wants to stand out in terms of sustainability. Aiming for a greener future, eXtra always tries to incorporate sustainability with innovative solutions to curb CO2 emissions. With the goals of achieving energy efficiency and reducing CO2 emissions without compromising the customers' experience & comfort, eXtra was looking for a highly efficient and sustainable air conditioning solution for a pleasant shopping experience. From solar energy to power-saving lighting, eXtra tried various energy-saving options for the last ten years. But the outcome of these alternatives did not meet the energy efficiency goals of eXtra.





Comfort cooling & fresh air ventilation with Oxycom's innovative two-stage evaporative cooling technology (IDEC)

Dosan was impressed by Oxycom's patented two-stage evaporative system, IntrCooll, which effortlessly provides cold, fresh, and filtered air with up to 90% less energy consumption than conventional AC solutions. Inspired by the sustainability potentials of this patented two-stage evaporative technology, Dosan understood that IntrCooll can be the ultimate power-saving & fresh air solution for companies in the Middle East looking to employ energy-efficient climate control.

Providing a fresh indoor air environment with higher energy efficiency was the key factor for eXtra in this project. eXtra knew that the poor air quality in the work environment strongly influences the health and work productivity of employees. Dosan, being the project partner of eXtra, suggested installing the IntrCooll, a two-stage evaporative system (IDEC), as a highly efficient climate solution for the productivity and comfort of their employees and customers.

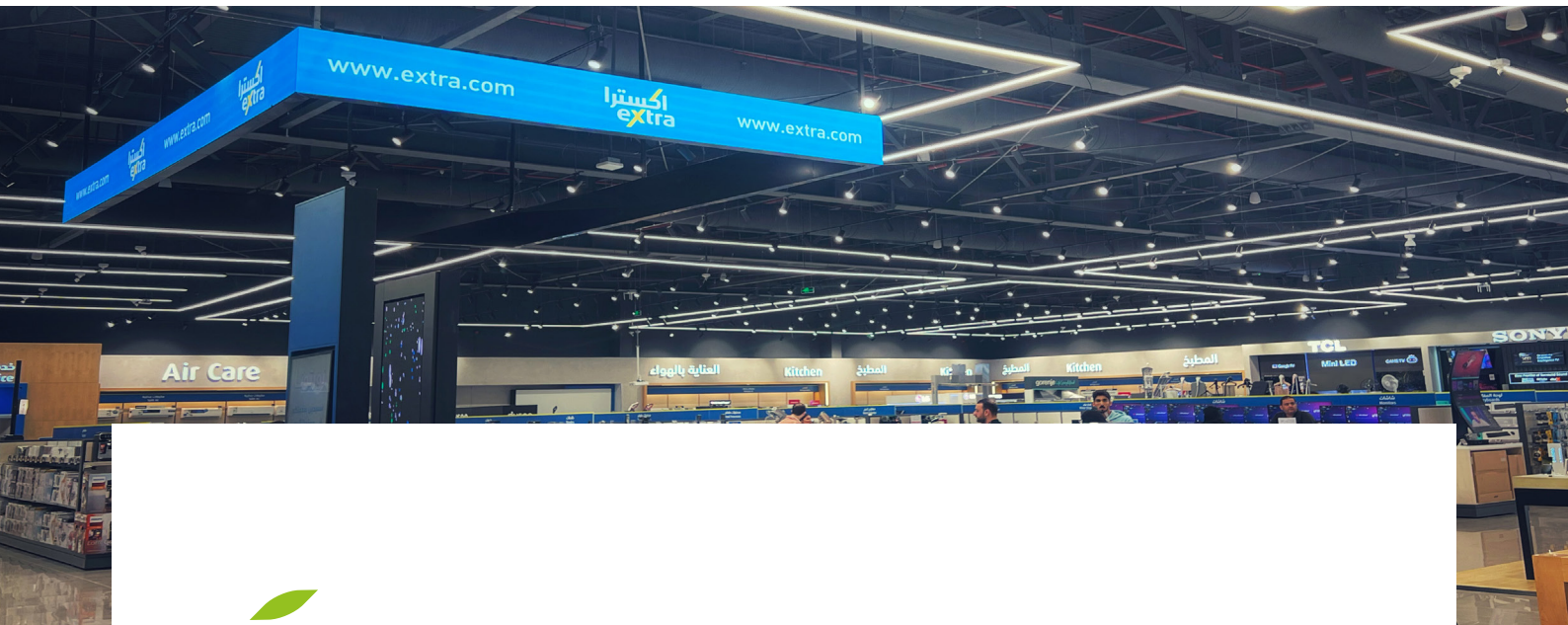
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“The fresh air along with low energy consumption was KEY for eXtra in this project. eXtra understands what kind of impact fresh air can have on employee productivity and customer satisfaction!”

M. MANSOUR

Managing partner, Dosan - Oxycom Division





Highly efficient comfort cooling with outstanding performance results and massive cost savings

For the first store, a hybrid solution (air conditioning combined with Oxycom's two-stage adiabatic solution) was installed at Hasa city and it could achieve 24% energy savings. However, the newly installed 8 IntrCools in other two store of eXtra started operating in July 2021 and their performance exceeded the expectations with the energy savings upto 54% net after all costs¹. The indoor temperature went lower than was calculated and the monthly energy savings were much higher.

The installation of in-house water desalination combined with chemical dossiers helped to further reduce water consumption by 30-40 percent, as it became possible to recycle the water in two stages, thus making sustainable water use feasible by reducing overall water consumption.

Performance results in the eXtra's stores¹

	Store 1 - Majmaa	Store 2 - Dawadmi
Total Cost with DX (Traditional air conditioning)²	5323 (SR) 1329 (Euros)	5473 (SR) 1367 (Euros)
Total Cost with Oxycom's IntrCooll	3196 (SR) 798 (Euros)	1806 (SR) 451 (Euros)
Savings value	2127 (SR) 531 (Euros)	3667(SR) 916 (Euros)
Savings ratio	40%	67%

1) Based on the average of four months (Sep-Dec) performance reports of 2021

2) DX Consumption cost calculated based on 25 Days working hours 17 per day and 5 days 11 hr/day

Performance metrics from daily readings in the stores

	Outdoor conditions	Average supply temperature	Average room temperature	Average wet bulb
Majmaa ³	37 °C	11 °C	19.0-21.0 °C	19 °C
Dawadmi ⁴	43 °C	12.5 °C	19.0-21.5 °C	20.5 °C

3) Based on the monthly average temperature from the performance report for September 2021

4) Based on the monthly average temperature from the performance report for August 2021





A collaboration for a sustainable future

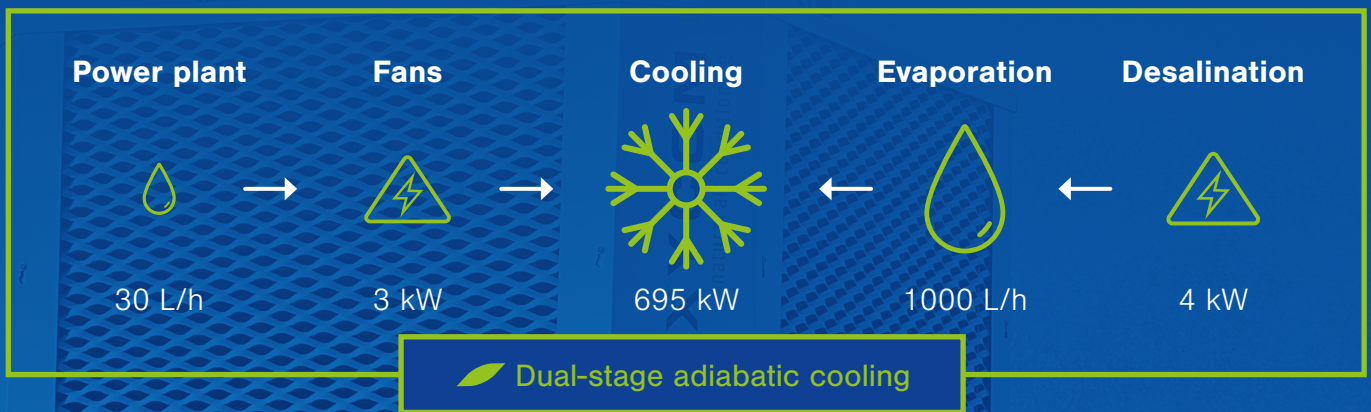
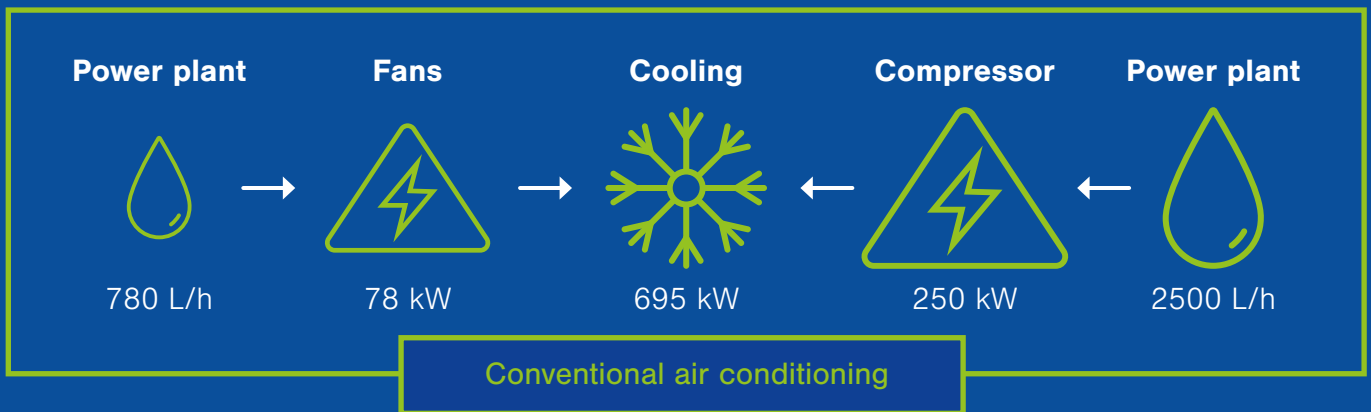
Since the outstanding success of the project in the Majmaa and Dawadmi stores, eXtra is satisfied with the “IntrCooll’s” and plans to extend its collaboration with Oxycom and Dosan.

Water conservation through innovative evaporative cooling

Using water for cooling in an extremely dry and hot climate may not seem the most responsible way.

However, we must consider that extremely efficient methods have been developed to desalinate seawater. Most of the electricity in the Middle East (as everywhere in the world) is produced by power plants using oil or coal and at least 10 liters of freshwater per kWh is needed for steam to run the turbines one can see that using evaporative cooling saves both fossil fuels and water. Evaporative cooling, a natural process, >

easily saves 90% on CO2 emission. It is clear that evaporative cooling can assist in saving valuable fossil fuels for future generations.





Oxycom Saudi Arabia

Are you looking to create a comfortable and healthy climate with massive energy savings?

Oxycom is here to help. Our specialists will give you free customized advice on sustainable adiabatic cooling, 100% natural ventilation and air distribution systems.

Get advice





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 together with our partners/ installers successfully.

Discover more

