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Introducing:



18 – 21 FEBRUARY 2023
RIYADH FRONT EXHIBITION AND
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Sustainable energy saving options for HVAC systems

Jos van Eunen - Sales Director



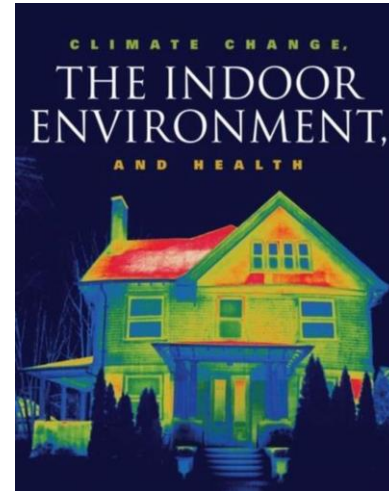
www.thebig5saudi.com



Challenges

In HVAC what **YOU** do ?

OXYCOM
natural air conditioning



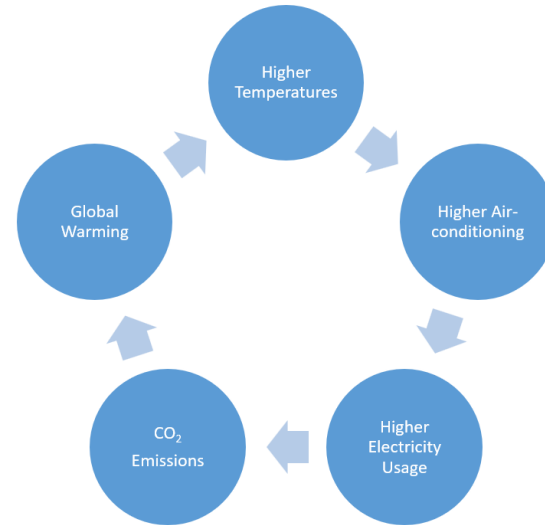


Boost the transition to earth-friendly indoor climates



Air conditioning trap

- 1.2 billion air conditioning units
 - about one for every seven people on earth
- 4.5 billion units by 2050 (UNFCCC)
- The region of Middle East is one of the most vulnerable to climate change.
- MENA has been identified by IPCC project as a hotspot for future temperature changes due to its arid environmental conditions





Road to sustainability:



Transformation of the HVAC industry

- Energy efficiency: Reducing building energy consumption is the first step to sustainability.
- Indoor air quality: Providing a healthy workspace with fresh air and proper ventilation is a social responsibility.
- Retrofitting of existing HVAC system with sustainable climate control system upgrades.
- Cooling by nature: cooling with water as refrigerant.







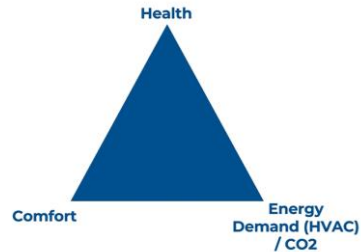
Indoor Air Quality:



Health, comfort, and energy efficiency: A delicate balance to find

Did you know?

-  An average person spends about **90% of their time indoors**.
-  Indoor air quality is up to **five times** more polluted than outdoor air.



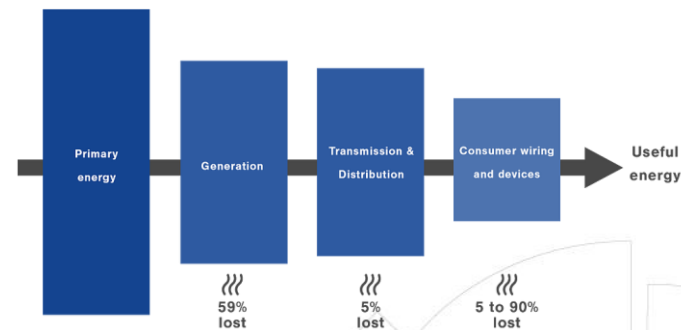
Sustainable climate control solution:
A key to healthy, fresh and optimal indoor air quality.

Energy Efficiency



Heatwave, energy consumption and global emissions: A tricycle of climate change.

- Energy consumption is by far the largest producer of greenhouse gases, responsible for more than three-quarters of global emissions.
- More than 60% of the energy used for electricity generation is lost in conversion (EIA).
- But climate-friendly cooling solutions could avoid as much as 460 billion tonnes of greenhouse gas emissions (UNEP).





Adiabatic Cooling Principle

- Nature is the technology provider
- Water evaporates and air temperature decreases

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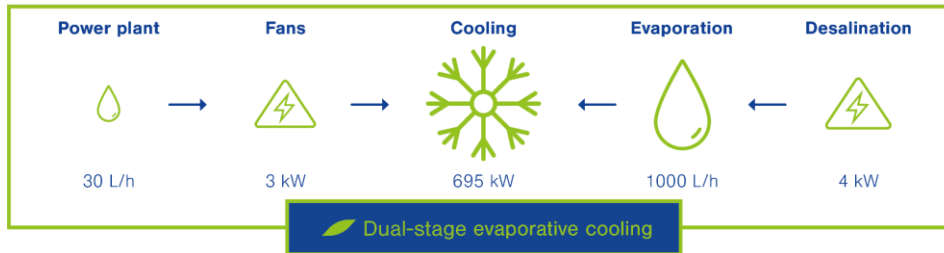
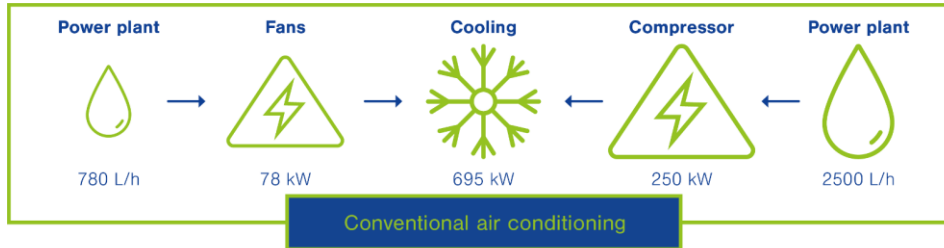
Water as a refrigerant

Water is one of nature's most powerful refrigerants. Oxycom uses this unique property of water evaporation to generate cooling. One tends to say that adiabatic cooling therefore uses a lot of water, but water is inherently required to evaporate. Not only does the Oxycom evaporative cooling system use less water compared to conventional compression air conditioning, it also reduces electricity consumption and CO2 emission up to 90%.



Natural Refrigerants

Adiabatic Technology (cooling with water as a refrigerant)



Evaporative Cooling:
One of the silver bullets to tackle climate change

Evaporating 1 m3 of water produces up to 695 kW of cooling power while Traditional AC technology would demand at least 250 kWh to deliver the same cooling power.



Oxyvap® contact humidifier

OXYCOM
natural air conditioning



- Very efficient contact humidifier with “HydroChill” fins
- Media characteristics:
 - Anti-corrosion coating
 - Anti-bacterial coating
 - Water absorbing layer
- Low pressure drop resulting in lower power consumption
- Long life-time



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How sustainable is Adiabatic technology?

Advantages

- No harmful chemical refrigerants used
- Using water as refrigerant
- Up to 80% less energy used
- CO2 Emission reductions

2030 Vision Support

- Energy efficiency
- Sustainable, Durable Technology
- Healthy Indoor Environments
- Contribution to net zero by 2060





HVAC Retrofit Opportunities

Upgrade options for existing HVAC system with sustainable climate control system

- **Adiabatic Pre-Cooling for:**
 - Air-Cooled Chillers
 - Fresh Air volume of Packaged units
 - Air-intake of (F)AHU
- **Benefits:**
 - Energy Savings
 - Peak Load Reductions
 - Prolonged system life due to lower stress





IntrCooll

Cool and ventilate buildings with 80% lower running cost

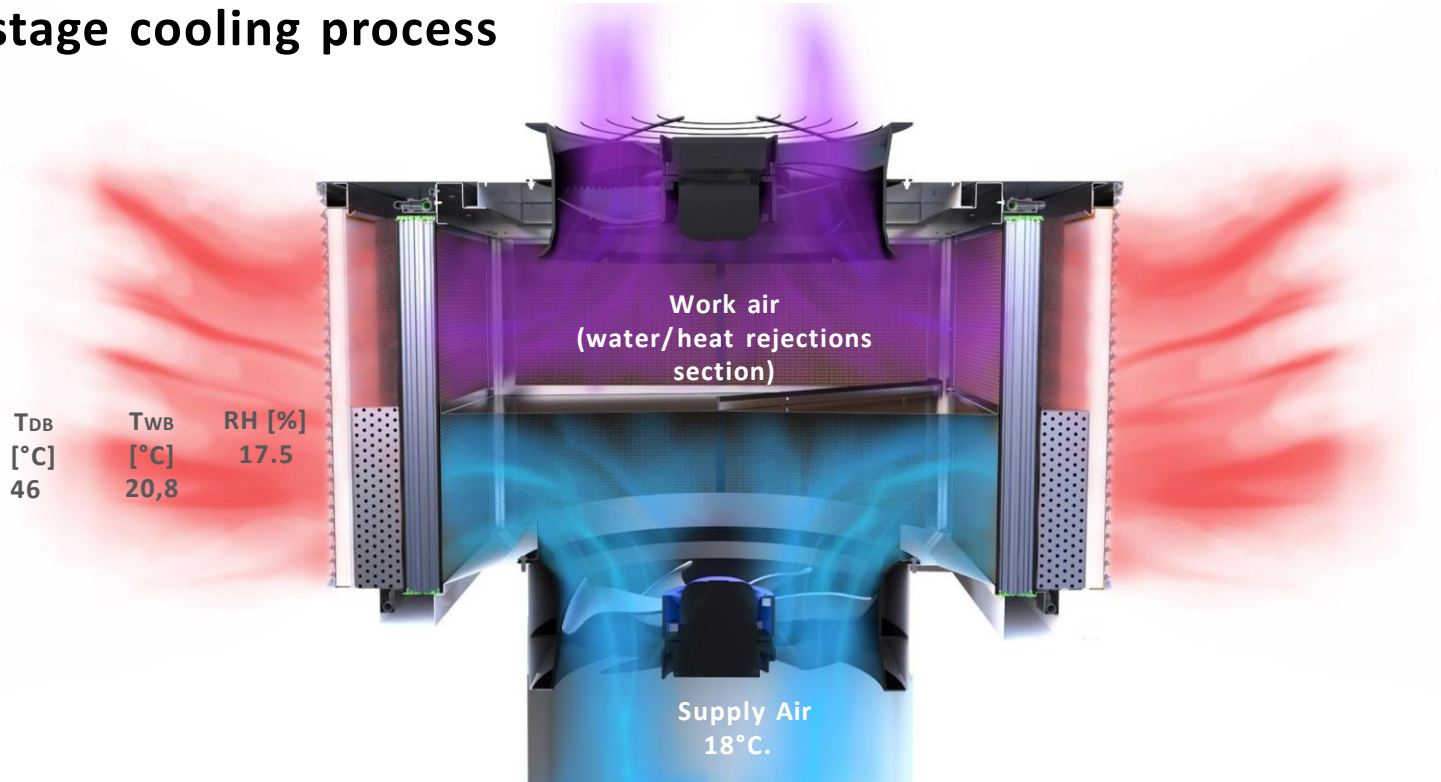


Indirect/direct adiabatic cooling

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Two stage cooling process





Indirect/direct adiabatic cooling

Two stage cooling process





PreCooll

Optimize your cooling system

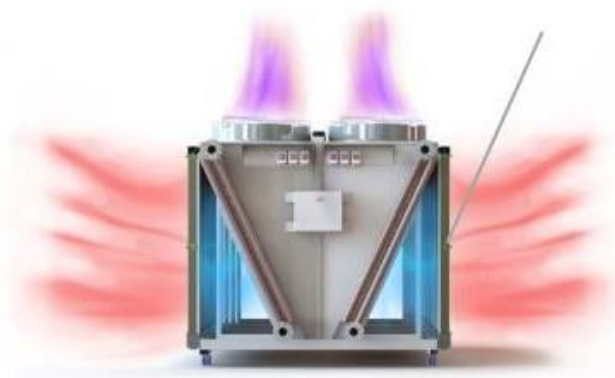


Adiabatic Pre-cooling

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Oxvap Adiabatic panels cool the ambient air





Middle East References



Country: Saudi-Arabia

Industry: Shopping mall

Surface: 60.000 M2

Solution: 42 IntrCooll

Customer: Tera Shopping Mall

اكسترا extra



Country: Saudi-Arabia

Industry: Consumer goods

Surface: Multiple stores

Solution: IntrCooll

Customer: eXtra



Country: Saudi-Arabia

Industry: Dairy factory

Surface: Guest house

Solution: IntrCooll

Customer: Almarai



City: Dubai

Industry: Car Inspection

Surface: 400 m2 (semi-open)

Solution: 16 IntrCool Std

Customer: ENOC



Emirate: Ras Al Khaimah

Application: Office Building

Solution: 4 Chiller PreCool

Customer: RAKEZ



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Success stories

المراعي
Almarai

أكسترا
extra


EQUINIX


ENGIE

 تيرا مول
TERA MALL

Coca-Cola

 اينوك
ENOC

 الأهلي
NCB
غدك الآن

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THANK YOU

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