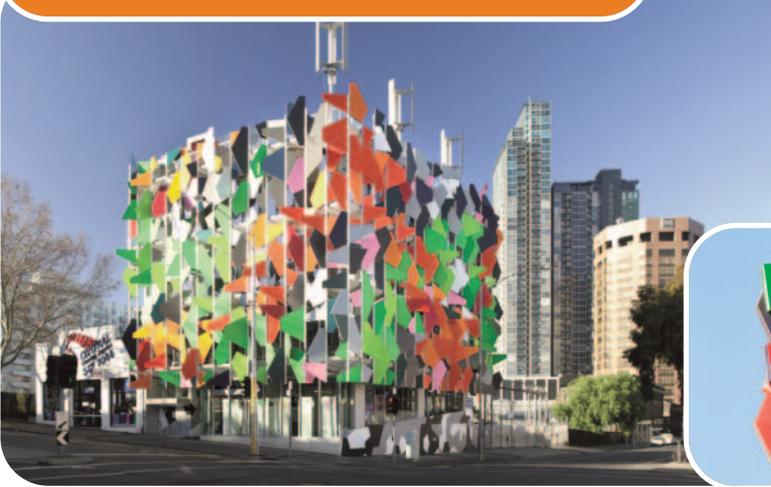




caring for the environment

Robur gas absorption heat pumps reduce electricity requirements and CO₂ emissions.



LIGHT COMMERCIAL

Heating and cooling system with absorption heat pumps

Fired by gas and air source renewable energy

Grocon Pixel Building
Melbourne, Australia

Customer requirements

Pixel is a four-storey building located just in the centre of Melbourne, Australia. Grocon -one of the leading Australian building constructors- has used Pixel to push the boundaries of Green Building "Carbon Neutrality" exceeding LEED, BREEAM and

Green Star ratings. Grocon plans to apply many of the innovative approaches and lessons learnt from the Pixel Project.

The building has achieved outstanding results, being self-sufficient. The grass-covered roof -with native plants- is provided with rainwater filtering

system that can be stored in a large underground tank and reused within the building for non-drinking purposes. The innovative ventilation system is designed to optimize the indoor comfort by avoiding the consumption of traditional systems. Almost all of the floor plate

receive full daylight with external shading designed to limit glare. Materials used to build the office has been selected for low energy and to avoid Volatile Organic Compounds and other chemicals that can affect the health of occupants.

More: <http://www.robur.com/products/pro-solutions/pro-gahp-line-ar-rtar-series/description.html>

Heating and cooling system

The 4 Robur reversible gas absorption heat pumps + air source renewable energy (heating capacity per unit: 35.3 kW; cooling capacity per unit: 16.9 kW) are located on the roof, thus avoiding indoor installation. Using up to 25.3% air source renewable energy, reversible gas absorption heat pumps can exceed peak efficiencies of 149%, with up to 25.3% reduction in annual heating costs and in CO₂ emissions in comparison to the best condensing boilers. Moreover, Robur reversible gas absorption heat pumps provide cooling operation in one single system, reducing electricity requirements up to 86% compared to traditional electrical systems.

Advantages

With the 4 Robur reversible gas absorption heat pumps GAHP AR installed at Grocon Pixel Building emission of 13.6 Tons of CO₂ are saved, equivalent to those absorbed by 1,828 trees or those produced by 8 green cars every year. Every year 6.4 TOE are saved in comparison to common boilers.

Thanks to the results achieved, Pixel has obtained all of the available rating credits, such as «National Master Builder's Awards 2011» in the category environment and energy efficiency. Moreover, these unprecedented outcomes put Pixel at the very forefront of the Greenstar rating system in Australia, with 6 stars, achieving 105 out of 100 credits (thanks to the innovative materials used). The building has also received the maximum

rating by the US Green Building Council according to the LEED and exceeding BREEAM rating system, targeting >98%, the highest score in world to date.

Also thanks to the Robur heating and cooling system, Pixel is the first carbon neutral commercial office building all over Australia.



Advantages
 - Low operational costs
 - Heating + cooling using gas
 - Low electricity requirements [-86% in comparison to electric systems]

Units	Nr. 4 GAHP AR Reversible absorption heat pumps fired by gas + air source renewable energy
Heating capacity	150.0 kW
Cooling capacity	67.6 kW
Type fo building	Light commercial - offices
Distribution terminals	Floor diffusers