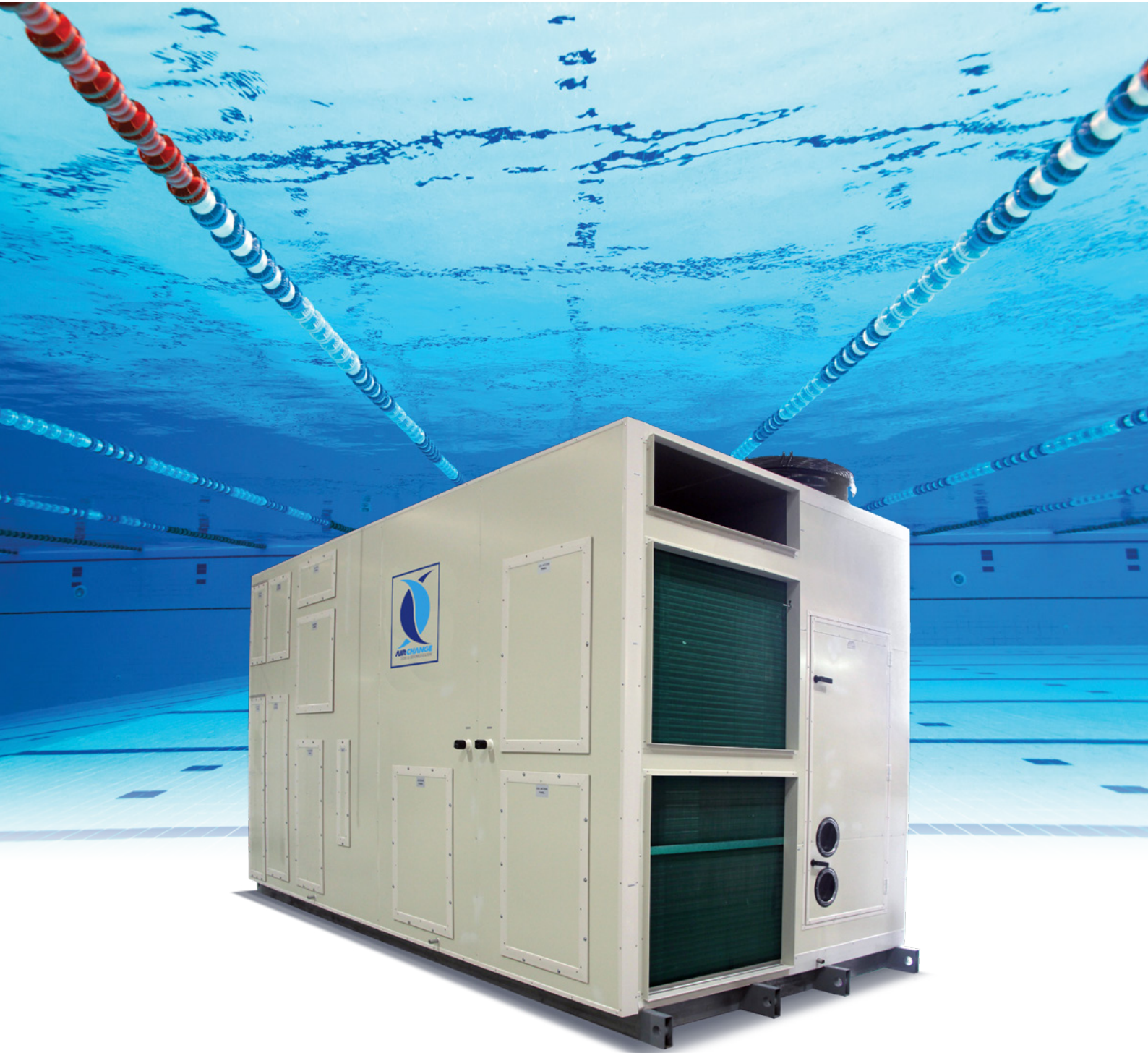


# PoolPac Plus

The most energy efficient solution to control your indoor pool air temperature and humidity while heating the pool water for free



# How it works

The Air Change PoolPac Plus is a direct expansion (DX) heat pump system designed to control the pool hall air temperature and humidity while simultaneously providing heat to maintain the pool water temperature. Your pool hall environment will be improved and your energy costs reduced using the PoolPac Plus.

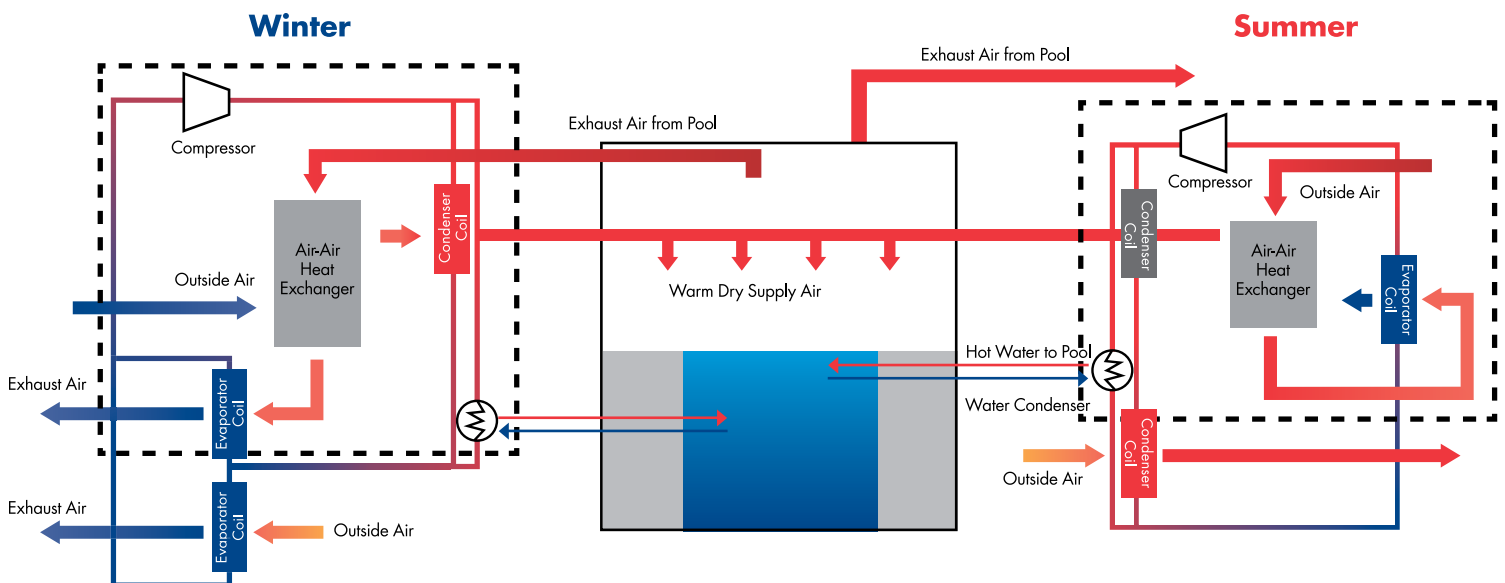
Air to air heat exchange technology is the key to any energy efficient Air Change product, but the PoolPac Plus design (patent pending) uses the heat exchanger and the refrigeration circuit in two different ways depending on the season.

In winter, the heat exchanger preheats the cold outdoor air using the hot moist air that is being expelled from the building, reducing the air heating load. The heat pump refrigeration circuit then recycles the remaining heat from the exhaust air to raise the supply air temperature to its desired set point and maintain the water temperature. Whereas a conventional pool water heat pump will use outside air as the heat source, the PoolPac Plus

innovatively uses the energy from the exhaust air to improve heating efficiency. If required, a second refrigeration evaporator allows the PoolPac Plus to maintain air and water temperatures in very cold climates without the need for auxiliary heating.

In summer, when outdoor air humidity levels rise, the air humidity must be lowered before entering the building to avoid stifling and uncomfortable conditions that occur when the air humidity is raised further by the pool water evaporation. In this mode, the refrigeration circuit gains all heat required for air and water heating from the dehumidification of the outdoor air, using the heat exchanger to precool and reheat the air to effect energy savings. A plastic core with mylar transfer media ensures the heat exchanger efficiency is unaffected by corrosion or media disintegration.

**The overall result – the PoolPac Plus delivers a perfect indoor environment at the lowest possible energy cost.**



# Avanti Apartments Pool

Avanti apartments, built over a decade ago, and located in Hornsby 25 km Norwest of Sydney's CBD, includes two towers with 198 residential apartments, 45 commercial spaces, 8 shops, a childcare centre, heated pool, spa and fully equipped gym. Since the original construction, Avanti have been struggling with mould, mildew and corrosion in a pool space that had inferior ventilation installed during the original build. This poor indoor air quality led to the eventual deterioration of the ceiling panels within the pool area, and the corrosion of many surfaces in the space.

Avanti also had the added challenge of space restrictions due to the limited available plant space.

Air Change, with its local engineering and manufacturing team were able to tailor a customised 'turn-key' solution for Avanti from design, through to installation and maintenance. The original brief from Avanti was simple:

1. Provide energy efficient heating for the pool, both air and water
2. Eliminate issues involving condensation and corrosion
3. Improve indoor air quality within the pool environment

Air Change's solution was to supply a split DX heat pump system. A fully ducted fan coil incorporating an air to air heat exchanger was installed in the ceiling space to manage the quality and temperature of the air.

To heat the pool water, Air Change installed a heat pump in the lower car park. The most innovative aspect of this design is that the two units are linked, to ensure the energy from the exhaust air in the pool room released during water evaporation is recycled back into the pool air and water. This system dramatically reduces the heating costs compared with conventional pool water heating systems. The air to air heat recovery further reduces the overall running cost by improving the overall system efficiency.

The installed equipment has an energy metering and logging device that tracks energy consumption. Current indications show an annual energy cost reduction of 51%. More importantly, the pool air environment is healthier and more comfortable whilst preserving the building fabric and this all occurs at a lower heating cost than before the system upgrade.

As the cost of gas increases on the Australian East Coast, the Air Change PoolPac Plus system offers an ideal solution to reduce energy running costs, minimise condensation and improve air quality in new pools and refurbishments.



The indoor pool at Avanti Apartments



Air Change's PoolPac Plus installed in Avanti Apartments' plant room.



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For more than 20 years, Air Change has provided unique equipment and engineering solutions for local and international clients using our internationally patented heat and energy recovery technology. During that time, we have developed a comprehensive range of energy efficient products to deliver controlled indoor climate conditions satisfying the requirements of all project stakeholders: the developer, the design engineer, and the building's owner and occupants.

[www.airchange.com.au](http://www.airchange.com.au)

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### Multi Award Winning Technology

ARBS Industry Awards "Product Excellence" Winner 2018

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AIRAH "Excellence in Innovation" Winner 2012 & 2013