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Rotary ready to celebrate 50 years of counterflow innovation

By Sandra van Dijk | 27 June 2017

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Rotary Heat Exchangers Pty Ltd is set to celebrate its silver jubilee next year, when it achieves a long standing 50 year history since the company was created by the CSIRO.

It grew out of a CSIRO research initiative into solar air conditioning in 1968. The company is the sole Australian manufacturer of rotating heat exchangers, for efficient energy recycling in building air conditioning all year round,.
Rotary Heat Exchangers also specialises in indoor pools space heating.

The product features a unique thin 10cm wide rotor, manufactured from Mylar plastic film which forms the porous wheel which rotates at a slow 18 rpm between the hot and cold air streams in counterflow.

This efficiently recycles thermal energy between the contaminated exhaust building or pool air and the incoming fresh air all year round.

The largest 2.7m diameter wheel has approximately 10km of the thin Mylar 10cm width film spirally wound with less than 1mm spacing between layers, for smooth airflow and high heat transfer and storage.

A recent example of a public aquatic centre benefiting from this technology is the recently completed Ringwood Aquanation in Melbourne, which incorporates 12 Mylar heat wheels in four air handling units constructed by GJ Walker, supplying heated fresh air to the new pool hall.

Another recent project is the 2.7m diameter heat wheel for energy recycling at the new RACV Cape Schanck Resort, currently under construction.

The wheel is being installed inside an air handling unit supplied by Veolia, to condition the new pool hall. It will supply 7000 l/s fresh and freely heated air by recycling 90 per cent heat from the contaminated exhaust from the pool hall.

The company CEO, Bill Ellul, has led Rotary Heat Exchangers for the past 20 years.

“Our Mylar heat wheels have been recycling thermal energy with a continuous service life that is greater than 25 years,” he said.

“Many continue operating today even after decades of continuous operation, such as Melbourne City Baths and Box Hill Aquarina in Melbourne.

“This results in a low life cycle cost which benefits the user and the environment, providing free energy heat reclaim, ultimately reducing rising energy costs.”

Ellul has improved the wheel's design, upgrading its performance to match today’s high sustainability expectations of building designers and operators.

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He has also been developing a novel sustainable low energy use and minimum maintenance, indirect evaporative cooling IEC air conditioning system.

"It will revolutionise low energy cooling and promises to achieve COP performance far greater than conventional systems especially in the high temperature hot season," Ellul said.

"These units promise to reduce electrical energy usage and maximise electricity demand on those extreme hot summer days; we expect to be in the market by next summer."

Way back in 1968, Ellul said the company was one of the first in Australia to introduce a rotating counterflow heat exchanger for higher energy recycling compared to the standard fixed heat exchanger commonly used in the industry.

"Today most consultants recognise the advantages of a rotating heat exchanger which is why their use worldwide has skyrocketed," he said.

Visit www.rotaryheat.com or email bill@ecopower.com.au

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