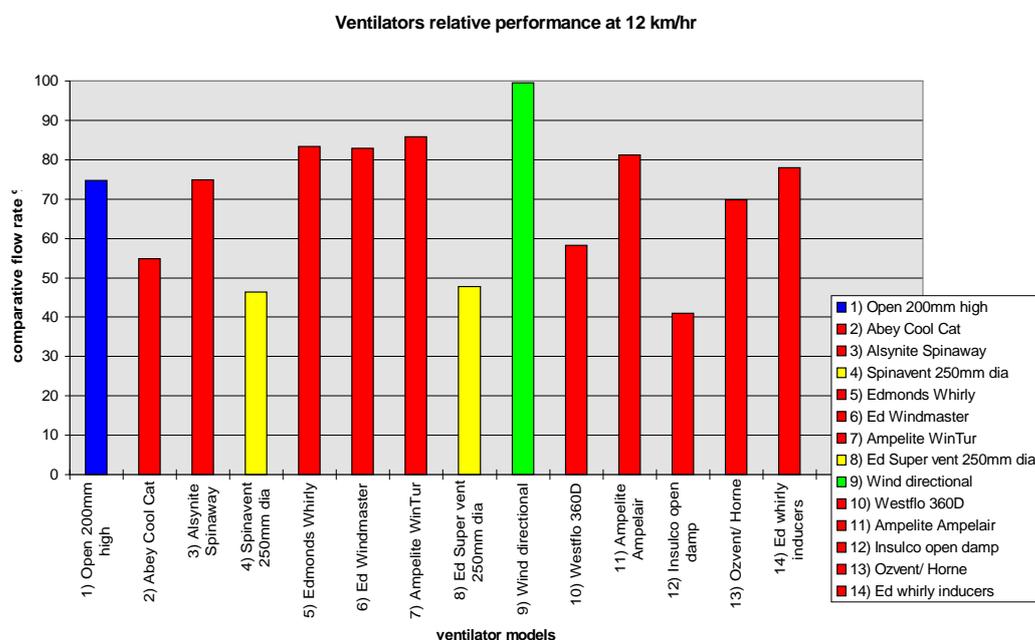


## ESA -We Reinvented the Roof Ventilator!

An initial approach by a ventilator manufacturing company to ascertain if a low wind speed testing procedure was able to be instigated at the aerodynamics laboratory at the University of Technology, Sydney, developed into a successful industry collaboration. The research outcomes significantly advanced the understanding of wind driven turbine ventilators and natural ventilation in general.

Following exhaustive trials, a suitable test rig was developed and a comparative analysis undertaken of most of the ventilators on the Australian market supported by the Australian Consumers' Association (CHOICE). This important research initiated at UTS was published in 1998 in the AIRAH Journal by Shane West then a director of ESA in the Australian Institute of Refrigeration, Air Conditioning & Heating Journal as: *A Comparative Analysis of Wind Turbines and other Natural Ventilators. Vol 52*, please see the results in Figure 1 below:

**Firstly, we tested all the major roof ventilators that were on the market for Choice magazine in the 1990's (which incidentally was more than are presently on the market)**



**Fig No.1 Comparative results to Sydney's average wind speed of 12km/hr.**

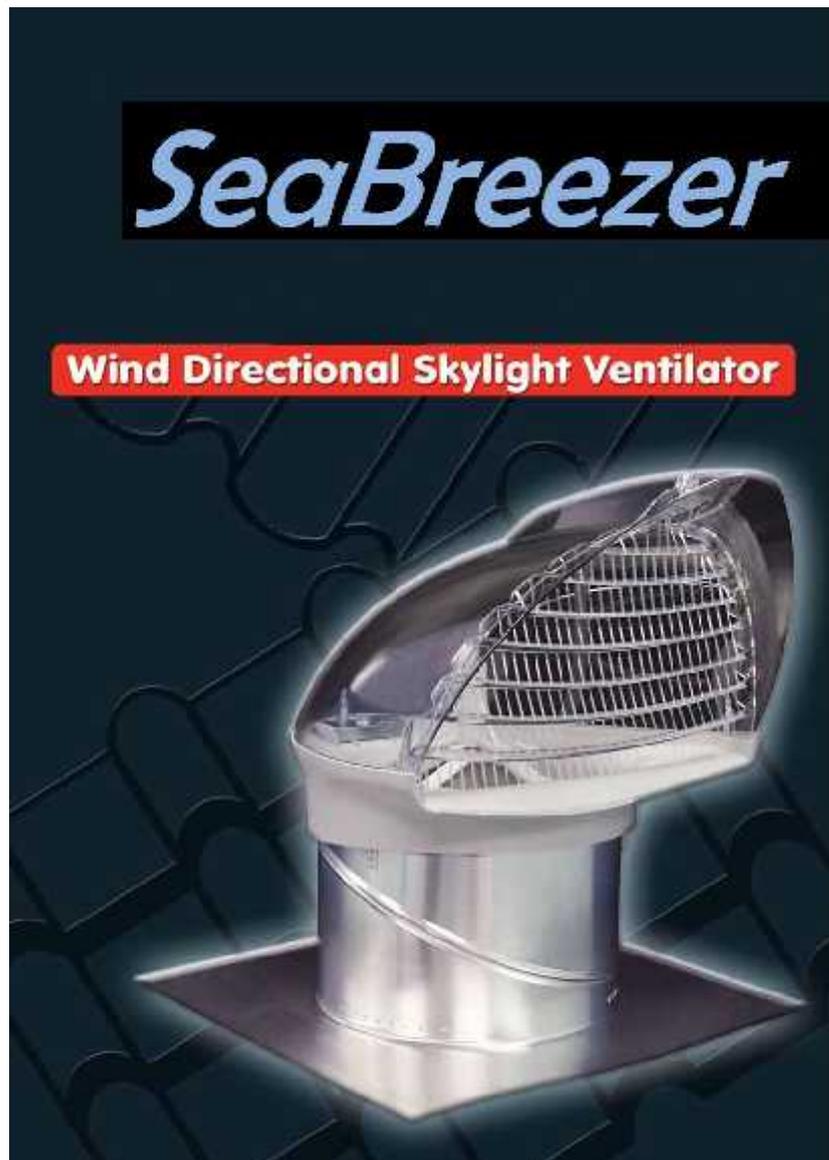
**Secondly, we contributed to the development of the first Australian / New Zealand Standard on Natural Ventilation.**

Following the results of the testing and comments submitted to Standards Australia / New Zealand regarding a draft Standard on Natural Ventilators. Shane's calculations on the draft standard were published in 1999- *Calculating Natural Ventilation for Industrial / Commercial Buildings with Correlation to the Draft (97303) Australian Standard-Ventilation code*, in the AIRAH Journal. Professor Eddie Leonardi, Head of UNSW Mechanical Engineering R&AC laboratory being the technical editor. Shane was invited to join the Standards Committee on Natural Ventilators. The Standards Australia / New Zealand Natural Ventilation 4740 Committee Project Manager, Mr Vincent Aherne stated in a letter of support:

*'Shane has made significant contributions to the development of the document and has committed his time and expertise to future work. In particular Shane has redeveloped*

*the test method (and mathematical manipulation of test results) used when determining the coefficient of performance of ventilators. This has helped to build industry consensus on a standardised test methodology which can be applied to these devices. Much of the material has been based on original research work undertaken by Shane.”<sup>1</sup>*

**Thirdly, we developed and patented product designs that had far better ventilation than competing rotating cowl products, allowed the dual benefit of light, were structurally stronger, more watertight, had less bearing wear, improved stack flow and were aesthetically less obtrusive than the rotating cowl vents: –**



**The *SeaBreezer* and *SkyVent* range**

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<sup>1</sup> Letter dated 24/3/98- Mr Vincent Aherne, Project Manager, Ventilation and Airconditioning.