

1. DETAILS OF LISTING

YOUR NAME: Roderick Walden

STAFF NUMBER: 941014

RESEARCH ITEM NUMBER: 2010000962

TITLE OF RESEARCH ITEM: GRW Coolme Vest: Emergency Firefighting Equipment

CATEGORY: J1

2. SUPPORTING STATEMENT

This exhibition presents the prototype for a new type of cooling vest designed to significantly reduce heat stress and recovery times for emergency workers in hot intensive working conditions. A team of scientists from James Cook University developed the invention (the cooling principle) that was then designed into a wearable vest for operation and ease of manufacture by Roderick Walden and Stefan Lie. The principle end-users are fire fighters in Rural Fire Services around Australia, volunteer organisations with limited funds so the final product needed to be low in cost. The research centres on the investigation of low cost and readily available materials and manufacturing applications in achieving performance criteria for a cooling vest intended for extreme working conditions.

Sixteen prototypes were made by the designers and tested in live fire trials with the Queensland Rural Fire Service. The exhibition focuses on the role of the industrial designers – taking an invention from mock-up through to a viable, manufacturing product and prototypes for user trials –and features some of the key design problems addressed.

The exhibition demonstrates the contribution of design expertise to a collaborative research project, achieving a commercially viable product outcome based on an invention grounded in scientific research. The significance of this research is that it has produced a successful design for a high performance, technical product using low cost materials and technology more commonly associated with inflatable toys and packaging manufacture. This innovative approach will ensure that wide distribution of the product is made possible.

3. SUPPORTING EVIDENCE:

Web links:

<http://www.dab.uts.edu.au/dablab/2010/cool-me-vest/>

<http://www.theaustralian.com.au/news/health-science/james-cook-university-takes-a-vested-interest-in-safety/story-e6frg8gf-1225786422261>

<http://www.tropicalinnovationawards.com/winners-2010>

<http://www.grwindustries.com/node/16>: Indicates the successful performance of the prototype.

List of images:

1. DAB LAB Intro Poster.jpg

2. GRW_E1.jpg

Caption: DAB Exhibition: Wall 1 – Process Photographs

3. GRW_E2.jpg

Caption: DAB Exhibition: Wall 2 – Patterns and Digital Slideshow of Process

4. GRW_E3.jpg

Caption: DAB Exhibition: Wall 3 – Prototypes (S and L Version)

5. GRW_E4.jpg

Caption: DAB Exhibition

GRW Coolme Vest

Designed by Stefan Lie and Roderick Walden

This exhibition presents the prototype for a new type of cooling vest designed to significantly reduce heat stress and recovery times for emergency workers in hot intensive working conditions. The product was invented by Dr. Glen Deakin, Robert Ennis-Thomas and William Armstrong at James Cook University. A cooling chemical reaction is triggered when water is added to the vest's contents which is stored dry, inside the vest as a granulated media. Roderick Walden and Stefan Lie were commissioned by UniQuest as consultants through Access UTS to design the product for operation and ease of manufacture. This exhibition presents the work by the Industrial Designers. The exhibition represents collaboration between two Universities to achieve a commercially viable product outcome based on an invention grounded in scientific research. It demonstrates ways for the UTS School of Design to apply its expertise for mutually beneficial research outcomes.

Roderick Walden and Stefan Lie would like to thank Craig Archer (Access UTS), George Adamson (UniQuest) and the inventors at James Cook University.

"Some general comments about the vest from the trials and other possible end users have been favourable with a number of fire fighters impressed with the vest so much so that they were disappointed when they were selected to be part of the control group without the vest. They were clearly feeling the benefit of using the product as a recovery aid following work in a hot environment whilst wearing protective clothing. Used in recovery, it was clearly reducing fluid loss and therefore improving the recovery prognosis for those that were suffering the effects of heat."

Dr. Glen Deakin

James Cook University



Roderick Walden

A lecturer in the Industrial Design Program at the University of Technology, Sydney and Director of One Point One Pty. Ltd. Roderick has worked as an Industrial Designer for manufacturing companies and as a consultant in his own business, working on a range of consumer and industrial product designs covering a broad range of manufacturing technologies. In 2009, Roderick formed a new business called One Point One, with long time colleague Stefan Lie. One Point One develops and manufactures highly considered, sustainable products for the office, home and travel. Roderick is currently engaged in research that examines the development of methods and process within the Industrial Design profession.



Stefan Lie

Director of One Point One Pty. Ltd., Stefan is also a prominent Sydney based designer, having designed and developed a range of popular consumer and industrial products including furniture, jewellery, foot-ware, home-wares, office products and precision tools for manufacturing operations. Stefan's work has won numerous awards and been widely exhibited in Australia, Europe and Japan. He has worked as a consultant to manufacturing industry as well as successfully commercialised many of his own self-initiated designs. Stefan has taught in the Industrial Design program at UTS for many years and worked on a number of research projects with Roderick Walden.



