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# Water Tanks and Air Ventilation – a Model Project in Melbourne

An environmentally savvy Melbourne based building project has caught the attention of Delta T, a prominent engineering journal in the UK.

Meadows Primary School in Broadmeadows is undergoing a major redevelopment under the guidance of Now Architecture which has designed a world-class ground coupled ventilation system using a series of Elmich underground water tanks supplied by KHD. This extensive ventilation system is thought to be a first for Australian design.

### How does the system work?

A number of school buildings are being constructed over foundation beams created by sealed underground water tanks. Ventilation pipes cross the water tanks, carrying air drawn from the outside. The ground temperature, at 2 metres deep, is a constant 15 degrees Celsius all year round. The air is then tempered by the water providing cooling in summer and raising the temperature of external air in winter.

The physics of the system has been checked by CFD modelling and Now Architecture is confident that the simulations will stack up in real life. The underground tanks mean that recycled water can be stored and used for toilets and gardens while taking up no land space in the children’s play area. The environmentally sustainable design also saved about 300 cubic metres of concrete that would otherwise have been required for the job.



**Delta T’s Roderick Bunn provides a well-balanced opinion and overview of the job in a report. For a copy of his report, please contact Ken Hitchcock on 0419 579 437 or khitchcock@ozemail.com.au**

## Green Living Builders Are Ahead of the Rest

Dave Wightman from Whitehorse Constructions and Plumbing recently completed construction of a 6 Star, fully self contained house at Clonbinane, 80 kilometres north of Melbourne. With the use of careful orientation and double glazing throughout, the home requires only minimal heating from a wood heater. Power is provided by a combination of solar panels and wind energy with the power stored in batteries. As the house is off grid it has a diesel generator for back up. Other features include the use of a super efficient cool room in the pantry. Construction materials include a combination of light weight construction, recycled timber and recycled bricks provide thermal mass. A worm farm system takes care of the sewerage treatment.

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