

KHD LANDSCAPE
ENGINEERING
SOLUTIONS

UPDATE

Summer edition ■ November, 2010



Water Tanks & Air Ventilation – a model project in Melbourne.

Meadows Primary School in Melbourne's North West is undergoing a major redevelopment. Now Architecture 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 and the sheer scale of the project is also attracting International attention. Delta T, a prominent engineering journal in the UK has profiled the project. Roderic Bunn, the author, provides a well-balanced opinion and overview of the job.

So how does the system work?

In essence, 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 are confident that the simulations will stack up in real life. The underground tanks not only mean that recycled water can be stored and used for toilets and gardens, it is not taking up any land space in the children's play area.

An additional environmental benefit was that 300 cubic metres of concrete was not required for this job.

Regards,
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