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## GHANZ CHRISTCHURCH GROUNDWATER ENERGY SEMINAR

*Sponsored by Central Heating New Zealand, in conjunction with Climaveneta and the Hydrological Society of New Zealand.*

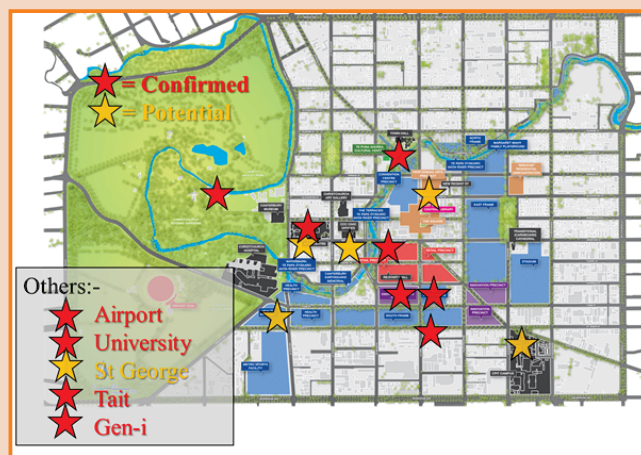
This workshop was held at Russley Golf Club Function Centre in Christchurch on June 12, 2015, and was attended by approximately 40 people. The workshop included 9 presentations from a variety of agencies including EECA, Aqualinc, ECan, Aurecon, Pattle Delamore Partners, Cofely and OPUS.

Topics ranged from the goings-on in Christchurch District heating, government regulations, modelling and monitoring of aquifer systems, heat flow modelling, advances in heat pump designs and an update as to what is going on with the Australian IGSHPA chapter. Full presentations from the seminar can be found on our [GHANZ website](#).

We have picked out a few highlights from this seminar and included them here.



## LARGE SCALE GROUND SOURCE HEAT PUMP INSTALLATIONS IN CHRISTCHURCH



Aquifer heat pump systems are becoming an established technology in Christchurch as the rebuild progresses. The following information comes from Peter van Meer's (EECA) presentation given at the June workshop in Christchurch. There are now large commercial-scale permitted or consented applications being installed and more under consideration; as well as increases in domestic installations. Installations include:

- The Town Hall (~11,000m<sup>2</sup>) utilising a 1.2 MW system;
- The Justice Precinct (~40,000m<sup>2</sup>) utilising a 3MW system consisting of 3x 80m bores;
- The Terrace (~45,000m<sup>2</sup>) utilising a 500kW system;
- The ECan Office (~8,000m<sup>2</sup>) utilising a 650kW system;
- King Edward Barracks (~30,000m<sup>2</sup>) utilising 1.5-2.5 MW;
- The Bus exchange (3,000m<sup>2</sup>) utilising 0.5-1.5 MW;
- The Arts Centre (~13,000m<sup>2</sup>) utilising a 1.6 MW system.



## ECAN: NEW REGULATIONS

Submissions to Ecan (on behalf of Geothermal Heat Pump Association of NZ, GHANZ) in March 2013 to Environment Canterbury to the Canterbury Land and Water Plan helped lead to changes to the planning regime in the Christchurch city area in regards to the use of groundwater for heating and cooling energy use applications. Within certain guidelines and specified areas aquifer heat pump systems are a permitted activity; streamlining the process and removing barriers to uptake.

[Weblink to Rule 9.5.13 & 9.5.14](#)

## CAFÉ FUNDING GRANTS

Christchurch Agency for Energy (café) was established to raise awareness in Christchurch and promote energy efficiency initiatives and the use of renewable energy by providing information and advice. CAFé also enables the gathering of meaningful and current energy data on energy use in Christchurch. It provides funding grants of up to \$300,000 per project of floor areas > 1000m<sup>2</sup> located within the Christchurch four avenue area. This can include funding towards Feasibility Studies (up to \$50,000 for technical and financial feasibility investigations) and Technology demonstration (up to \$100,000 to implement underutilised technologies).

## NEW ZEALAND GEOHEAT STRATEGY UPDATE

Brian Carey (GNS Science), Melissa Climo (GNS Science) and Simon Bendall (EMS) are leading the development of a national geoheat strategy for New Zealand. Brian mentioned this to those attending the Christchurch workshop. The consultation process for this strategy development is underway, and workshops have been held with industry and economic development groups to date. The calendar has plans to meet with Maori representatives, central government and others over the coming months. The scope of this strategy is going to have a greater emphasis on direct heat use of geothermal resources (think over 30°C) for commercial and industrial applications. However, we plan to ensure that it aligns with the goals of GHANZ for growing the uptake of ground source heat pump use in New Zealand.

More information: [www.nzgeoheat.nz](http://www.nzgeoheat.nz)

## INTRODUCING HELEN RUTTER - AQUALINC



Helen Rutter works for Aqualinc in Christchurch, leading their Water and Land business. This includes aquifer testing, groundwater modelling, and research into the impacts of the Canterbury earthquakes, amongst many other areas of work.

Prior to working at Aqualinc, Helen was a senior hydrogeologist at the British Geological Survey in the UK.

With the rebuild of Christchurch well underway, increasingly, open loop ground source heat pump systems are being designed and put in place for commercial properties. This has been facilitated by the land use recovery plan (LURP) Action 46, which has inserted rule 9.5.13 of the provisional land and water plan (pLWRP). This rule permits the non-consumptive take and use of groundwater, including for heating and cooling purposes, and the associated discharge to groundwater (subject to conditions) as a permitted activity rule. The conditions include taking of water from Aquifer 2 (the Linwood Gravels) and injecting into Aquifer One (the Riccarton Gravels), and require assessment of effects on other users in the Linwood Gravels. Systems that Aqualinc have worked on so far include the Art Centre and the central city bus exchange.