

THE GROUND SOURCE HEAT PUMP ASSOCIATION
Research Seminar

10:35	Closed loop boreholes and horizontal systems	Chair: Robin Curtis Recorder: Nic Wincott
10:40	Spiral Probes as alternative to Horizontal Collector	Ralf Winterling
10:50	Building Simulation	Nick Kelly
	<p>RC – Opened commenting that Closed Loops predominate in the market place particularly in the domestic segment and generally sub 2MW systems. Many are looking for a “magic bullet” to simplify the design and installation process & reduce the costs of Closed Loop systems. All well and good but must be without compromise.</p> <p>Raugeo Helix Probe – The Alternative to Probes and Horizontal Collector Ralf Winterling – Technical Director Rehau Building Solutions Division.</p> <p>Frequently space is limited on UK building sites therefore a turnkey solution which is viable in restricted spaces and which fits between the existing currently available “normal” borehole & horizontal collector types, has been sought for some time.</p> <p>The Rehau “Reageo Helix Probe” is intended to fill this gap. The system comprises approx 40m of 25mm PE-Xa pipe prefabricated & shrink-wrapped into a 380mm ø x 1100mm high unit which is designed to be installed into a 400/450mm augured hole approx 5m deep. When release (the permeable PE wrapping remains attached) it expands to 3m. They are typically laid in a 3m grid. It is temperature rated to +95 °C to allow it to be combined with Solar recharge.</p> <p>Testing is ongoing, but based on 1800hs operation annually, current results indicate max output is likely to be 700W per helix however average output will probably be nearer 400W. Long term testing programme is planned.</p> <p>Using integrated simulation as a test bed for heatpump and microgeneration performance analysis Nick Kelly – Energy Systems Research Unit (ERSU) University of Strathclyde</p> <p>The focus is finally shifting to complete building heating and cooling systems with the realisation that, if optimum efficiencies are to be achieved integrated design processes are essential. While this applies to any heating</p>	

	<p>technology not just microgeneration it is especially pertinent to closed loop systems.</p> <p>At the Strathclyde ERSU they have been working for over 30 years with software building simulation tools because by providing a “realistic test bed” these offer the best way of ensuring field design procedures are competent.</p> <p>The presentation explained work which had been done with both Micro CHP & ASHP’s and preliminary findings. More work is planned with GSHP and in particular as: Part of hybrid systems Horizontal systems and Demand management ie utilising GSHPs inherent thermal inertia as a load control tool within future energy networks.</p> <p>Robert Francis who was billed with a presentation entitled: ” Increasing the value of the low carbon offerings of companies” was unfortunately unable to attend.</p>	