

## **GEOTHERMAL: TRAINING & AWARENESS ACTIVITY-Irish**

### **Context**

Geotrained project is supported by the European Commission: IEE programme – Altener, to establish a European training framework for GSHP designers and drillers. The long term aims of the project include the raising of standards in this growing industry with a view to the protection of the environment and to deliver a high quality service for the consumers, [www.geotrained.eu](http://www.geotrained.eu)

The objective of this course is to train drillers for the installation of shallow geothermal systems. This course tries to respond to the demand from the market on GSHP. The Drillers normally have a background in mechanics and work for drilling companies in water, foundation engineering, etc., only few are SMEs fully dedicated to geothermal energy. The course curriculum is based on the subject material developed by Geotrained European Experts Platform. This Experts Platform has developed an education programme including the necessary content and skills for shallow geothermal system drillers.

The long term aims of the project include the raising of standards in this growing industry with a view to the protection of the Environment and provide high quality drilling & installation service combined with use of appropriate specified materials.

The following persons:

EurGeol Gareth Jones, MSc PGeo

Dr. Paul Sikora, B.Sc PhD

Mr. Padraig Briody, B.Comm, MBS, (Registered FAS Trainer)

EurGeol Roisin Goodman, B.Sc

Attended the “Training Course for Trainers” in Sweden during June 2009 where attendees across Europe were provided with presentation material to assist the development of Training Courses in their respective Countries. This is part of an on-going process towards the creation of a European Framework for shallow geothermal installers (up to 300mtrs depth) and raising and co-ordinating National & European standards. See [www.geotrained.eu](http://www.geotrained.eu) for further information.

In 2009 a course was run at Geological Society of Ireland offices for Irish Drillers to attend a 2-day Geothermal Drilling and In-hole Installations Training Course. The course was well attended by over 30 Drilling Contractors throughout Ireland. See Day one classroom course content sheet attached. Day two of the course comprised a site visit at a work in progress Drilling site for questions answers and demonstrations.

**PROGRAMME FOR DRILLERS (1) - Conducted in Dublin in 2009**

<b>Time</b>	<b>SECTION A</b>	<b>Proposed Teacher</b>
9:00 - 9:20	Overview Shallow Geothermal Systems	Bukhard Sanner
9:20 - 10:20	Irish Geology & Hydrogeology/Application to Geothermal Drilling	Gareth Ll. Jones David Ball
10:20 - 10:45	Irish Geothermal Drilling Status and limiting factors to Geothermal Installations	Roisin Goodman Ric Pasquali
<i>~ COFFEE &amp; EXHIBITIONS ~</i>		
<b>Time</b>	<b>SECTION B</b>	<b>Proposed Teacher</b>
11:00-12:30	Geothermal Fundamentals The process of Geothermal Drilling & Installation <ul style="list-style-type: none"> <li>• Site Survey/Design Consideration</li> <li>• Drilling Methodology</li> <li>• Set-Up</li> <li>• Drilling &amp; Installations</li> <li>• Well commissioning &amp; Development Methods</li> <li>• Health &amp; Safety</li> <li>• Borehole Logging</li> </ul>	Kjell Carrisson & Dirk de Coster
12:30-1:00	Swedish Case Studies <ul style="list-style-type: none"> <li>• Arlanda Airport, Stockholm</li> <li>• Ikea, Uppsala</li> </ul>	Olof Andersson
<i>~ LUNCH ~</i>		
<b>Time</b>	<b>SECTION C</b>	<b>Proposed Teacher</b>
2:00-3:00	Key components of Geothermal Installation <ul style="list-style-type: none"> <li>• Material Specification</li> <li>• Grouting</li> <li>• Thermal Response Testing</li> <li>• Filling, de-aeration and Pressure Testing</li> <li>• Documentation</li> </ul>	Jórg Ujde
<i>~ COFFEE &amp; EXHIBITIONS ~</i>		
<b>Time</b>	<b>SECTION D</b>	<b>Proposed Teacher</b>
3:15-4:30	Working Groups Case studies & Presentation Examples <ul style="list-style-type: none"> <li>• Quote for Geothermal drilling &amp; installations</li> <li>• Thermal Response Testing application</li> <li>• Grouting Procedures</li> </ul>	Participants Managed by Teachers
4:30-4:40	Rapporteur > Feedback & Analysis Session	Burkhard Sanner
4:40-5:00	Questions & Answers	Gareth Jones

The Geothermal Association of Ireland (GAI) was formed as a not for profit association in 1998 to promote the development of geothermal energy in all its forms in Ireland.

GAI is committed to education and awareness building to promote the use of geothermal as a sustainable energy system in Ireland.

The website is a resource for GAI members and others interested in the development of geothermal energy in Ireland. [\*www.geothermalassociation.ie\*](http://www.geothermalassociation.ie)

The GAI is affiliated to the European Geothermal Energy Council (EGEC) and the International Geothermal Association (IGA).