



Supported by

Intelligent Energy  Europe

2nd Course:
Training for Drillers

GEO-EDUCATION FOR A SUSTAINABLE GEOTHERMAL HEATING AND COOLING MARKET

Project: IEE/07/581/S12.499061

SECOND COURSE: TRAINING FOR DRILLERS

**Venue:
Geological Survey of Ireland
Beggars Bush
Haddington Rd
Dublin 4, Ireland**

28-29 September 2009

Aim of the course:

Geotrainet 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 a high quality for the consumers, www.geotrainet.eu

The objective of this course is to train drillers for the installation of shallow geothermal systems. This course tries to respond 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 programme of the course is base on the curricula developed by Geotrainet European Experts Platform. This Experts Platform has developed an education programme including the necessary content and skills for shallow geothermal system drillers.

PROGRAMME FOR DRILLERS (1)

Programme - 28 September 2009		
Section A: Introduction		Proposed Teacher
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 & EXHIBITIONS ~</i>		
Section B: Drilling in practice		
11.00-12.15	Boreholes for closed systems <ul style="list-style-type: none"> ◇ Site Survey ◇ Set-Up, practical aspects ◇ Drilling problems and solutions ◇ Health & Safety considerations ◇ Drillers log / Documentation 	Kjell Carlsson & Dirk de Coster
Section C: Installations		
12.15-13.00	Wells for open systems <ul style="list-style-type: none"> ◇ Well types and system design ◇ Maintenance problems and solutions ◇ Environmental/legislation aspects 	Olof Andersson
<i>~ LUNCH ~</i>		
14.00-15.00	Key components of closed Geothermal Installation <ul style="list-style-type: none"> ◇ Material Specification ◇ Grouting ◇ Thermal Response Testing ◇ Filling, de-aeration and Pressure Testing ◇ Documentation 	Jörg Ujde
15.00-15.30	Practical Applications, Swedish Case Studies: ~ Arlanda Airport ATES system, Stockholm ~ Ikea BTES system, Uppsala	Olof Andersson
<i>~ COFFEE & EXHIBITIONS ~</i>		

15.45-17.00	Working Groups Case studies & Presentation Examples <ul style="list-style-type: none"> ◇ Quote for Geothermal drilling & Installations ◇ Thermal Response Testing application ◇ Grouting Procedures 	Participants Managed by Teachers
17.00-17.30	Rapporteur ~ Feedback & Analysis session	Burkhard Sanner
17.30-18.00	Questions & Answers	All Teachers

PROGRAMME FOR DRILLERS (2)

Programme - 29 September 2009

9.00-13.00	Section F: Technical Tour
	1. Vista Care Medical Centre Open Loop system, Naas, Co. Kildare
	2. Installation of a borehole system at Sallins, Co. Kildare, for on-site discussion of drilling, insertion and grouting methodologies

LIST OF TEACHERS

Title	Name	Affiliation
Dr.	Olof Andersson	Sweco/Lund University, Sweden
Dr.	Burkhard Sanner	EGEC, Brussels, Belgium UBeG GbR, Wetzlar, Germany
Mr.	Jorg Uhde	Bauer Resources GmbH, Germany
Mr.	Kjell Carlsson	Geoborr Geoenergi AB, Sweden
Mr.	David Ball	Consultant Hydrogeologist, Ireland
Ms	Roisin Goodman	SLR Environmental Consulting, Ireland
Mr.	Dirk de Coster	VDC Milieuadvies bvba, Belgium
Mr.	Ric Pasquali	Geothermal Energy Ltd, Ireland
Mr.	Gareth Ll. Jones	GT Skills, Ireland
Dr.	Isabel Fernandez	European Federation of Geologists, Brussels Project Coordination