GSHP association

GEO TRAINET

Geo-Education
for a sustainable geothermal heating and cooling market

Who or What is **GeoTrainet**

GEO-EDUCATION FOR A SUSTAINABLE GEOTHERMAL HEATING AND COOLING MARKET
Project: IEE/07/581/S12.499061

GSHPA AGM Monday 28th June 2010

Nic Wincott

Supported by
Intelligent Energy Europe

Newcastle University

Who or What is GeoTrainet

Background to the programme:

Geo-Education
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Ground Source Heat Pumps contribute greatly to energy saving and emission reduction.

One of the barriers to a sustainable and growing geothermal marketplace is the lack of appropriately skilled personnel. In particular the competence of designers and drillers is not always satisfactory.

The objective of the GeoTrainet project is to launch a massive programme of training and prepare a certification scheme specifically for designers and drillers of geothermal installations.

The programme will include preparation of a tailored training programme, collation and adaptation of existing training materials, organisation of training courses and establishing an e-learning platform. Training structures will be established for professionals of the geothermal sector in at least 8 EU countries.

An European certification framework will be developed. Certain standards and codes will be suggested to permit harmonization where appropriate.

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General Overview:

- The Geotrainet project is supported by the European Commission's [Intelligent Energy Europe] IEE programme.
- The long term aims of the project include the raising of standards in the industry with a view to both protecting the environment and ensuring a high quality of installation for customers.
- The course will focus primarily on closed loop ground source heating and cooling (GSHC) systems.
- Once developed the training course will be of interest to those who have existing experience of the design of GSHC systems and to those who are intending to develop professional competence in this field.
- The course will be part of an ongoing process towards:
  - The creation of a European Certification Framework for shallow (**) geothermal installers
  - The raising and coordinating national and European standards in GSHP systems.
- The GEOTRAINET project is particularly focused on two target groups of professionals involved in a GSHP installation:
  - The designers (those who carry out feasibility and design studies, inc. geology)
  - The drillers (who make the boreholes and insert the tubes).
- Further information may be found at: **www.geotrainet.eu**

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Who is Involved:

European Organizations:

European Federation of Geologists	
European Geothermal Energy Council	

Research Centres:

Arsenal Research	Austria
BRGM	France

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Who is involved:

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Private Sector:		
	GT Skills	**Ireland**
ROMANIA GEOEXCHANGE	**Geoexchange Society**	**Romania**
Universities:		
UNIVERSIDAD POLITECNICA DE VALENCIA	**Universidad Politecnica de Valencia**	**Spain**
LUND UNIVERSITY	**University of Lund**	**Sweden**
Newcastle University	**University of Newcastle**	**UK**

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Recent Course Content Overview:

Designer Programme	
	Section A: Fundamentals and Constraints
09.30	Overview of Shallow Geothermal Energy Systems - *Burkhard Sanner*
10.00	Limiting conditions – *David Banks*
10.30	Economic and Policy Constraints – *Robin Curtis*
11.00	--- COFFEE BREAK ---
11.15	The UK Geological and Hydrogeological Framework for Ground Source Heat Pumps – *David Banks*
11.45	The UK Regulatory Framework for Ground Source Heat Pumps – *Anna Hall – Environment Agency*
	Section B: Feasibility
12.15	Concept and Feasibility Study - *Burkhard Sanner*
13.00	--- LUNCH ---
14.00	Site Investigation and Thermal Response Tests – *David Banks*
	Section C: Introduction to Design
14.35	Design Fundamentals - *Göran Hellström*
15.10	--- COFFEE BREAK ---
15.25	Design Fundamentals - *Göran Hellström*
15.55	The Borehole Heat Exchanger - *Göran Hellström*
16.30	Ground Loop Hydraulics – *Robin Curtis*

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Course Content Overview:

Designer Programme	
	Section D: Practical and Industry Perspective
09.00	Installation Quality Control: Grouting, Flow and Pressure Testing, Commissioning, System Control, Monitoring and Maintenance – *Walter Eugster*
10.15	The UK Ground Source Heat Pump Industry – *Nic Wincott*
10:45	--- COFFEE BREAK ---
11.00	Drilling Borehole Heat Exchangers in the UK – *Michael Moggeridge*
	Section E: System Alternatives
11.30	System Alternatives - *Göran Hellström*
12.30	--- LUNCH ---
	Section F: Technical Tour

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Course Content Overview:

Designer Programme	
	Section G: Integration with the Building
09:00	Heat Pump Technology – *Javier Urcheguia*
09.45	Heating and Cooling Loads - *Javier Urcheguia*
	Section H: Closed Loop System Design
10.30	Detailed Design, Design Criteria and Ground Loop Sizing - *Göran Hellström*
11.30	--- COFFEE BREAK ---
	Section I: Practical Session
11.45	Practical Session with EED (Earth Energy Designer)
12.45	--- LUNCH ---
13.45	Practical Session with EED

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Who was Involved:

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Title	Name	Affiliation
Dr.	Burkhard Sanner	EGEC, Brussels, Belgium UBeG GbR, Wetzlar, Germany
Mr.	David Banks	Newcastle University, UK Director, Holymoor Consultancy Ltd., UK
Dr.	Robin Curtis	Director, Earth Energy Ltd., UK
Ms.	Anna Hall	Environment Agency, UK
Mr.	Nic Wincott	Ground Source Heat Pump Association, UK
Dr.	Walter J Eugster	Polydynamics Engineering Zurich, Switzerland
Prof.	Göran Hellström	Lund University, Sweden
Dr.	Javier Urchueguia	Universidad Politécnica de Valencia, Valencia, Spain
Mr	Michael Moggeridge	Magpie Environmental Drilling Services Ltd

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What Next?

- The courses which have been run to date have been a mix of content development and "Train the Trainer" events.
- Course content, supporting manuals, PowerPoint Presentations etc. are now almost finalised but there are still some issues with I.P. to be resolved.
- Meeting planned in September to agree and confirm the next steps.
- David Banks will be attending.

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Thank You

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