



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

GSHPA AGM Monday 28th June 2010

Nic Wincott



Background to the programme:



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.



General Overview:



Geo-Education for a sustainable geothermal heating and cooling market

- 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

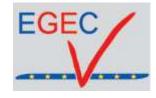


Who is Involved:





European Federation of Geologists



European Geothermal Energy Council

Research Centres:



Arsenal Research Austria



BRGM France

Supported by





Geo-Education
for a sustainable geothermal
heating and cooling market

Who is involved:



Geo-Education
for a sustainable geothermal
heating and cooling market

Private Sector:

GT Skills

Ireland



Geoexchange Society

Romania

Universities:



Universidad Politecnica de Valencia

Spain



University of Lund

Sweden



University of Newcastle

UK



Recent Course Content Overview:



Geo-Education for a sustainable geothermal heating and cooling market

| 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 | | | |





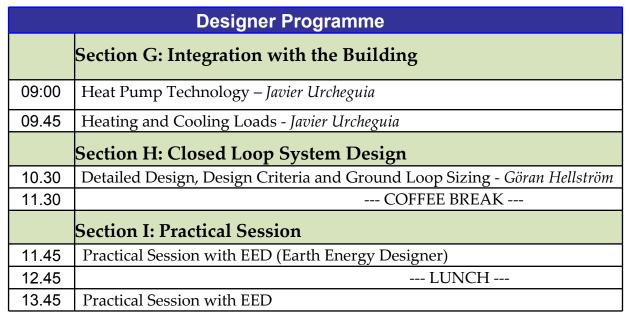
Course Content Overview:

| Geo-l | Education |
|-------|-------------------|
| | inable geothermal |
| | nd cooling market |

| | Designer Programme | | | | |
|-------|--|-------|--|--|--|
| | Section D: Practical and Industry Perspective | 1,300 | | | |
| 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 | | | | |



Course Content Overview:







Who was Involved:



Geo-Education for a sustainable geothermal heating and cooling market

| 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 |





What Next?

Geo-Education for a sustainable geothermal heating and cooling market

- 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.









Thank You

Nic Wincott

Neoenergy (Sweden) Limited, St Johns Innovation Centre CAMBRIDGE, CB4 0WS. UK.

+44 (0) 1223 911788 enquiries@neoenergy.co.uk nic.wincott@neoenergy.co.uk

Supported by

Intelligent Energy

Europe

