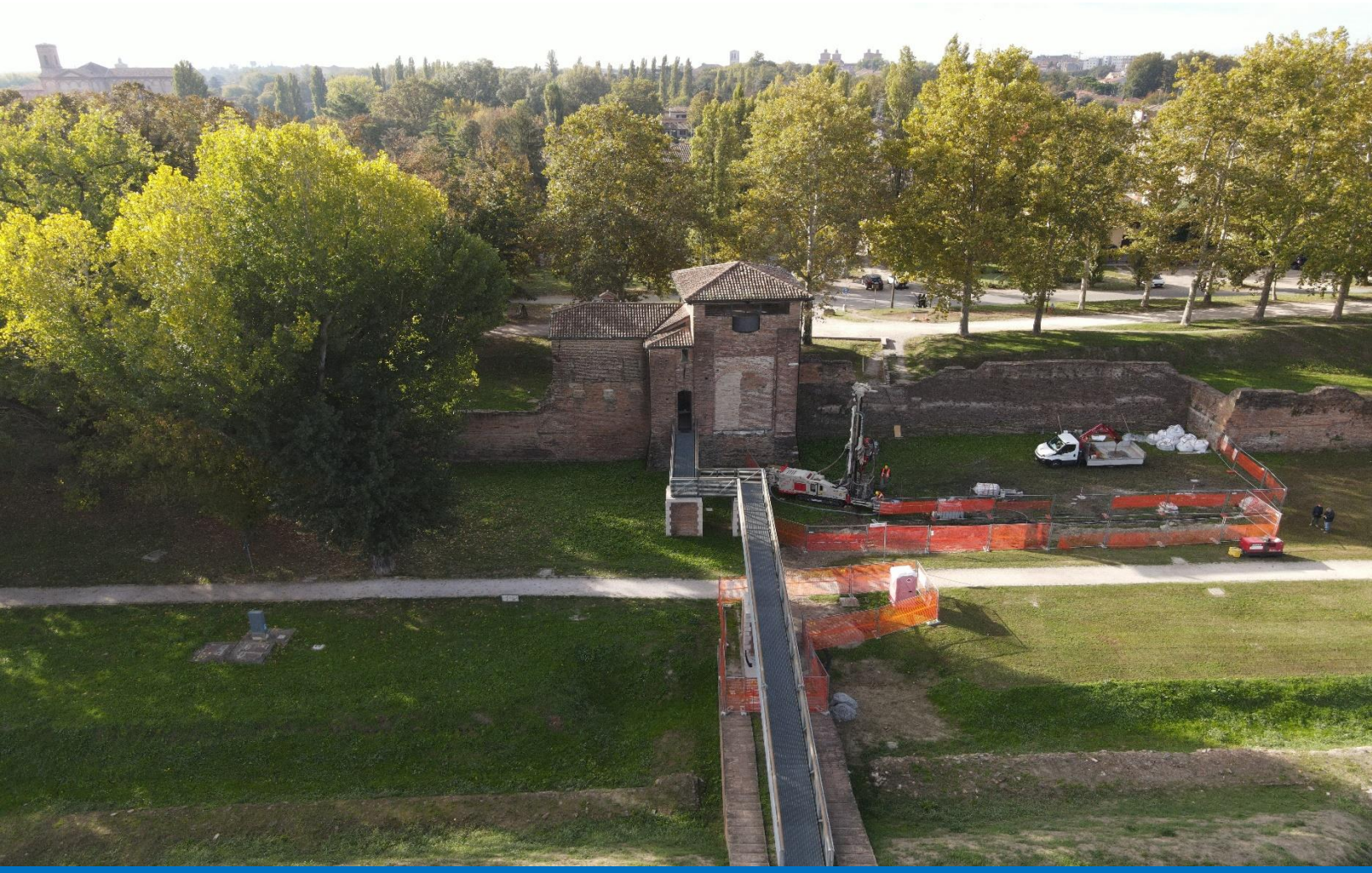
GEO4CIVHIC Summer School

28 September 2023

Heating and cooling our buildings with green energy

Venice (Italy)



Venue

UNESCO Regional Bureau
for Science and Culture in Europe:
Palazzo Zorzi, Castello 4930 -
Venice (Italy)

Organisers

UNESCO Regional Bureau
for Science and Culture in Europe
CNR- ISAC

Date

28 September 2023

09:30 – 17:00

Language

The workshop will be delivered
in Italian and English

Contacts

UNESCO Regional Bureau for Science and Culture in Europe, Science unit

For queries about the event:

Francesca Bampa, Project Officer Email: f.bampa@unesco.org

For logistics:

Marina Gilebbi, Programme Assistant Email: m.gilebbi@unesco.org

This project has received funding from the European Union's Horizon 2020 research and innovation programme

Background

GEO4CIVHIC (Most easy, efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings) is a 4-year lifespan Innovation Action (IA) project, funded by the European Union's Horizon 2020 Research and Innovation Programme under the grant agreement № 792355. The project further expands the main outcomes of the Cheap-GHSP project, which works to increase the inherent potentiality of shallow geothermal power systems for heating and cooling purposes.

The overall technological approach is to reduce cost, increase efficiency and ease installation of each of the main components of the geothermal systems. Within the project, innovative new geothermal heating and cooling systems were designed to replace old and inadequate heating systems at the 4 demonstration sites under different climatic conditions and undergrounds. Three are historical buildings (based in Italy, Ireland and Malta) while the remaining is residential (based in Belgium). To install GEO4CIVHIC systems, drilling machines tailored specifically for the built environment were used.

Specific Objectives

- Build necessary skills and facilitate knowledge transfer to the youth on the renewable energy solutions, including shallow geothermal systems;
- Foster youth's engagement in dialogues and discussions on the implementation of geothermal energy technologies by integrating the promotion of renewable energy technologies in their educational practice;
- Strengthen UNESCO's regional network of young leaders;
- Stimulate and support innovative renewable energy initiatives by showcasing the achievements of the GEO4CIVHIC project in enhancing shallow geothermal technology in built environments;
- Strengthen the dissemination of information and know-how on sustainable energy potentials in the construction field and, in particular, for UNESCO designated sites and cultural heritage in general.

Target group

The summer school is intended for secondary school and university students from South-East Europe, as well as to young scientists seeking specialisation in geothermal energy.

Summer school

Heating and cooling our buildings with green energy

28 SEPT 2023

09:15 Arrival and registration of participants

09:45 **Welcoming remarks** Jonathan Baker (UNESCO)

10:00 **Meeting objectives** Francesca Bampa (UNESCO)

10:15 **Ice-breaker activity**

10:30 Coffee break

Session I - Overview of Green and Ground Energy

11:00 **Renewable energy and shallow geothermal systems applied to historical buildings: the GEO4CIVHIC project** Adriana Bernardi (CNR - ISAC)

11:15 **A dialogue between geologists and engineers on innovative building solutions for residential and historical buildings** Antonio Galgaro, Giulia Mezzasalma, Silvia Contini, Michele De Carli, Luc Pockelé (UNIPD, RED S.r.l.)

12:40 **Environmental and legislative considerations** Riccardo Pasquali (GeoServ Solutions)

13:00 Buffet lunch

Session II – Demo site posters

14:00 **Implementation results on the demonstration sites from Europe: Italy, Malta, Ireland and Belgium** Massimiliano Finotti (FM Project), Luc Pockelé (RED S.r.l), Riccardo Pasquali (GeoServ Solutions)

Session III – A way forward

15:30 **Roundtable discussion – education and career paths** Adriana Bernardi (CNR – ISAC), Antonio Galgaro (UNIPD), Giulia Mezzasalma (RED S.r.l), Jonathan Baker (UNESCO), Iuliia Kozlova

The market of new ideas Luc Pockelé (RED S.r.l), Michele De Carli (UNIPD), Riccardo Pasquali (GeoServ Solutions)

16:30 **Final remarks and closure** Francesca Bampa (UNESCO), Adriana Bernardi (CNR-ISAC)

17:00 Coffee and sweets