



GEO4CIVHIC Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 792355

Shallow Geothermal Energy for existing buildings – overview and status of project GEO4CIVHIC



GENERAL TARGET

Accelerate the deployment of shallow geothermal systems for heating and cooling in retrofitting existing buildings in built environment, including historical buildings

TARGETS REACHED

Novel heat exchangers and drilling machine

- Novel co-axial plastic and steel heat exchangers
- Adaptation of well point methodology
- Compact drilling machine
- Roto-vibration drilling head for efficient drilling in consolidated soils



Innovative Heat Pumps

- Dual source (water to water and air to water) low temperature Heat Pump
- Two-stage high temperature Heat Pump
- Single source water to water Heat Pump with two levels of temperature distribution
- Dual source (water to water and air to water) high temperature Heat Pump



Tools

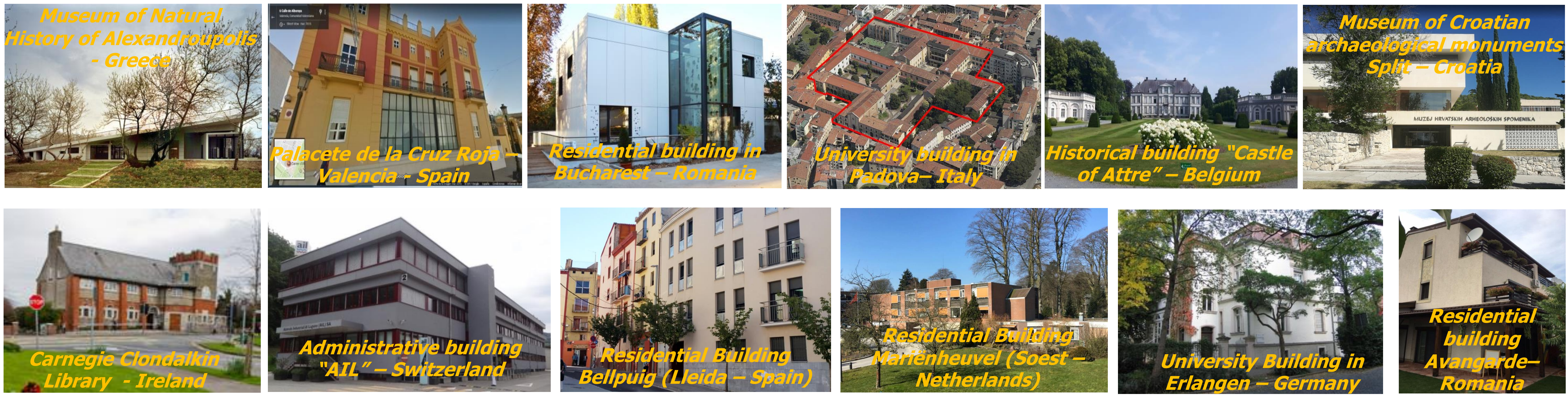
- Decision Support System
- Drillability map
- App for feasibility study
- Building Energy Management control optimized for synergies with Renewable Energy Sources



Real Demonstration Case Studies (Installations performed, data collection in progress)

	Msida Bastion Garden, Floriana (Malta)	Angel's Gate, Ferrara (Italy)	Residential building, Mechelen (Belgium)	Historical residential building, Greystones (Ireland)
Climate	Warm	Mild warm	Mild cold	Cold
Underground	Consolidated	Soft unconsolidated	Unconsolidated	Consolidated
Heat pump	Dual source low-temperature heat pump	Dual source high temperature heat pump	Water to water heat pump	Two stage high temperature heat pump

Virtual Demonstration Case Studies (modellisation performed)



Consortium Partners

www.geo4civhic.eu

