

# **GABI: a common European initiative for Geothermal Applications for Buildings and Infrastructure**

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## **Abstract**

The **COST ACTION TU1405 GABI** (shallow **G**eothermal **A**pplications for **B**uildings and **I**nfrastructure) has been launched in 2015 with the objective to build a new European network of researchers and engineers to address the challenges of thermoactive geostructures in terms of thermal and mechanical design. In thermoactive structures, heat exchangers are integrated in the elements of the structure that interface with the ground, such as foundations, tunnels and diaphragm walls. This technique is also particularly attractive because of the inherent cost savings involved in combining a required structural component with the harvesting of geothermal energy. Based on multidisciplinary approaches, this group has the ambition to develop collective understanding, share techniques, facilities and data, and work jointly in disseminating the obtained results across Europe. This lecture includes the main results obtained by this group: THM ground characterisation, thermal and mechanical design of thermoactive structures, interactions between thermoactive structures and other constructions at the scale of the district.