

R&D PROJECT



Title of the project

Deployment of novel GEOthermal systems, technologies and tools for energy efficient building retroFITting

Acronym

GEOFIT

Content of the project

Geothermal retrofitting has been considered as one of the most efficient and renewable approach to attain sustainability goals for existing buildings. From a technical perspective, heating and cooling system retrofitting is defined as upgrading existing building performance over the long-lease term, such as by increasing energy efficiency, decreasing overall energy demand and providing better indoor environment for occupants.

General objectives

- The development of innovative EGS, systems
- Deploy and integrate advanced methods of worksite inspection, ground research, building structural monitoring
- The implementation of a global, effective, energy-efficient retrofitting strategy for the stock of existing buildings in Europe

Project tasks

- I. IDDS and integrated geothermal-based retrofitting methods
- II. Ground research, work site inspection and improved drilling technologies
- III. Design framework for novel ground type shallow heat exchangers
- IV. Heating and cooling system development and integration
- V. Overall system building integration and efficient management
- VI. GEOBIM platform and platform development for geothermal-based retrofitting
- VII. Demonstration and validation
- VIII. Standardisation activities and life-cycle analysis
- IX. Market analysis, exploitation, impact maximisation and dissemination
- X. Stakeholder oriented communication
- XI. Project coordination

Results and conclusions

GEOFIT has developed a holistic and novel approach to geothermal retrofitting which is cost-competitive, easy to install and capable of providing efficient low temperature heating and high temperature cooling. It uses the most innovative methods and tools and is being demonstrated in different climate and soil conditions across Europe.

GEOFIT offers many significant advantages that take geothermal systems to the next level, such as large energy savings, integration into a single system for both cooling and heating, free environmental energy, high energy efficiency, long lasting system and very low maintenance.

Since retrofitting is a complex process, GEOFIT includes new tools and methods such as: low invasive risk assessment technologies, site inspection techniques, innovative drilling methods, optimized design methods, novel technological components and BIM tools. GEOFIT has been successfully implemented in 5 pilot sites in Italy, Ireland, France and Spain

PROJECT PARTNERS

- COMSA S.A.U.
- IDP INGENIERÍA Y ARQUITECTURA
- R2M SOLUTION
- CONSIGLIO NAZIONALE DELLE RICERCHE
- AJUNTAMENT DE SANT CUGAT DEL VALLÈS
- UNIVERSITÀ DEGLI STUDI DI PERUGIA
- IDS GEORADAR
- OCHSNER WARMEPUMPEN
- NOBATEK/INEF4
- AUSTRIAN INSTITUTE OF TECHNOLOGY
- CATALANA DE PERFORACIONES
- UPONOR
- NATIONAL UNIVERSITY OF IRELAND, GALWAY
- FAHRENHEIT
- ENERVALIS
- LULEÅ UNIVERSITY OF TECHNOLOGY
- GROENHOLLAND
- KTH ROYAL INSTITUTE OF TECHNOLOGY
- FUNDACIÓ EURECAT
- COMET TECHNOLOGY
- SIART
- FUJINIMH OLLEÁIHN ÁRANN
- CAREL DEUTSCHLAND
- ASOCIACIÓN ESPAÑOLA DE NORMALIZACIÓN

BUSSINESS AREAS

Infrastructure area
COMSA, S.A.

DURATION

2018-2021

BUDGET

9.331.623,75€

KEYWORDS

Efficient geothermal systems, geothermal retrofitting, sustainability, energy efficiency

COORDINATOR

Àngel Font (AGC Glass Europe)

EXTERNAL FUNDING

