



Deliverable D5.2

Report on data collection, design and preliminary cost-benefit analysis of the real cases

WP5

Grant Agreement number 792355

Project acronym GEO4CIVHIC

Project full title Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings

Due date of deliverable 30/09/2019

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Dissemination Level

PU	Public	
CO	Confidential, only for members of the consortium (including the Commission Services)	X
CI	Classified, as referred to in Commission Decision 2001/844/EC	

1 Publishable Summary

The Deliverable 5.2, related to the task 5.2, “Report on data collection, design and preliminary cost-benefit analysis of the real cases” is a Confidential report, only for the members of the consortium, that aims **to collect all the relevant data of the real demo cases and connected with the data collection task, to elaborate a preliminary cost-benefit analysis that will consider the costs of the retrofit for the real cases (including the GSHP system design).**

The data collected will be the main characteristics of the building (e.g. morphological and geographical variables, latitude and elevation, volume of the building, average U-value for the opaque/glazed structures, type of terminals used, average temperature of the location, energy costs for fuels and electricity etc.), specific data of geometrical and thermal characteristics, weather data, TRY and ground properties. The deliverable will also include a preliminary cost-benefit analysis that will consider the costs of the retrofit for the real cases (including the GSHP system design).

The main characteristics of each real demo site have been collected based on a common case study template. The information delivered in D 5.2 will be used in the other WPs (e.g. in WP4 for the DSS, in WP6 for the regulatory analysis, for the barriers in Task 1.1, for KPIs of Task 1.5, etc.) and related to the reference archetype buildings defined in Task 1.3.

Also the ground properties have been collected to complete the necessary information to apply the innovations (with the help of UNIPD-DG, GEOSERV and GEOGREEN and SUPSI). The complete template of the real facilities was delivered in a cloud working interface, where all the partners fill in the required information.

The detailed design and the related estimated costs of the retrofit for the real cases, including the design of the GSHP system and the preliminary cost-benefit analysis (with the estimated energy demand of the buildings before and after the applications) have been included in D5.2.

All these data will be input data for the DSS (WP4), for the final evaluation of the performance in the real and facilities (Task 5.5), for WP6 (environmental analyses), WP7 (business models, cost-benefit analysis and exploitation of the market) and WP8 (dissemination).

Each partner responsible for the case cases contributed to the collection of all data and completion of the case study templates.

The four real demo cases involved in the project are :

- 1. Msida Bastion Garden (La Valletta Malta)**
- 2. UNESCO Historical building (Ferrara, Renaissance, and Residential House Battelse Bergengn City of the its Po Delta)**
- 3. Residential House Battelse Bergengn City of the its Po Delta) 32, 2800 Battel, Mechelen**
- 4. Residential House Greystones, Co. (Wicklow, Ireland)**

To understand the economic and social consequences of undertaking the GEO4CIVHIC system on the market, and to have a final cost benefit analysis with clear and sure data (WP 7), it is necessary to perform a preliminary cost benefit analysis to assess the value and costs of the new technology to society.

Finally, the deliverable will provide a set of guidelines to follow when performing the CBA analysis in WP 7, together with the relevant cost data and their preliminary analysis.