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Deliverable D5.7

Evaluation of performance in real demonstration facility No 4 – Greystones, Ireland

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
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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	

Publishable summary

Deliverable D5.7 is a confidential document delivered in the context of WP5, task 5.3 and subtask 5.3.4: ‘Real case No.4 Historical Residential Building in Wicklow’ developed as part of the GEO4CIVHIC project.

The deliverable describes the design, installation and monitoring of three of the GEO4CIVHIC project technologies installed in a historical residential house in Co. Wicklow. The house from the 1860s is a historical building and has limited scope for retrofit intervention measures applied. The task has designed and installed a 15kW high temperature ground source heat pump developed by Galletti/Hi-Ref to displace the use of a gas fired central heating system. The heat pump and the ancillary supporting equipment were installed in a new plant room located along the northwestern boundary of the property. The source side of the system comprises the installation of 3 No. stainless steel, high efficiency coaxial heat exchangers developed as part of the project.

The innovative Hydra-TI roto-vibro method was used for the installation process using a newly developed small-scale Joy 3 drill rig.

Due to the COVID-19 related restrictions, project implementation delays were encountered in the installation activities of the system. The text of the deliverable provides a detailed overview of the design process for the system, the installation process and the implementation steps undertaken in the implementation of the task and provides a detailed account of the operational restrictions incurred due to the COVID-19 pandemic.

An assessment of the performance of the system in operational mode based on the monitoring data acquired during the 2022/2023 heating season is presented.