

# Deliverable D6.3

## Evaluation of performance in demonstration site N°3: Residential house, Belgium

### WP6

<b>Grant Agreement number</b>	657982
<b>Project acronym</b>	Cheap-GSHPs
<b>Project full title</b>	<b>Cheap and Efficient Application of reliable Ground Source Heat Exchangers and Pumps</b>
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<b>Lead beneficiary</b>	5 - RED
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**Dissemination Level**

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

## **Publishable summary**

This Report on “The evaluation of performance in demonstration site No 3 in a Residential house located in Putte, Belgium “is a confidential document delivered in the context of WP6 and Task 6.3.

This document covers the installation of three different types of Ground Source Heat Exchangers, their connection to the heat pump and the realization of a monitoring system. This document then covers the evaluation of the drilling methodologies and the performance of the Ground Source Heat Exchangers in this residential house.

The main objective of this task was to install newly designed coaxial heat exchangers using the CHEAP-GSHPs innovative drilling methodology for coaxial Ground Source Heat Exchangers.

This case study site provided an opportunity to confront the new drilling methodology and the new coaxial heat exchangers with state of art drilling technologies and heat exchangers under real load conditions. To this end, state of art Ground Source Heat Exchangers were first installed using actual drilling methodologies. Later on the new drilling methodology was used to install the newly developed coaxial heat exchangers. All heat exchangers have been connected to a heat pump and monitored individually on their thermal performance.

This report presents the details of the planning, design and installation of the respective heat exchangers as well as the construction, testing and monitoring phase of the system.

The outcomes of the construction and operational phase of this case study will provide important input for the comparison of the new technologies with standard technology, foreseen in Task 6.8. and for the virtual case studies planned in Task 6.7. Information and data from this case study will be fed into WP7 as part of the LCA in Task 7.4 and the development of the recommendations in Task 7.8.