



Image source: Giulia Bellaveglia – Visit Livorno eventi

Project report
GERO[®]therm[®] DUPLEX geothermal probes

Palazzo De Larderel
IT - Livorno

Palazzo de Larderel is the most imposing and magnificent 19th-century palace in Livorno. It stands along the street of the same name and now houses the Livorno Civil Court.

This impressive building takes its name from François Jacques de Larderel, an entrepreneur of French origin who came to Livorno after the Revolution. In 1818, together with several partners, he began the industrial exploitation of the borax springs of Montecerboli.

Using technology that was new at the time, the steam emitted by the lagoons was captured and pressurised. The steam was then used to supply evaporation boilers, which were needed to extract boric acid from the natural mud. Thanks to continuous innovation, Larderello was able to build up an outstanding economic legacy in a short period of time.

Larderel's achievements were rewarded by Grand Duke Leopold II, who appointed him Count of Montecerboli and changed the name of the town to Larderello in his honour in 1846. Since 1913, it has been home to the world's first

geothermal power plant, which uses geothermal energy to generate electricity and is operated by Enel Green Power (EGP). The plant has a capacity of around 800 MW and combines historical innovation with modern technology, including a geothermal museum.

To heat and cool the building, 56 GEROtherm® DUPLEX geothermal probes made of PE100RC in PN16 4x32 mm with a length of 100 m were installed. The heat pumps used are partly geothermal and partly air-based. The geothermal probes were installed in the inner courtyard of the building.



Georicerche Srl from Due Carrare was responsible for the drilling work. GEROtherm® injection pipes and the GEROtherm® PUSH-FIX installation system from HakaGerodur were used to sink the geothermal probes.



Georicerche Srl also installed the connection pipes and made the connections to six distribution shafts



Project data

Construction site

Palazzo de Larderel
IT-Livorno

General contractor

INSEL Spa
IT-Roma

Drilling company

Georicerche Srl
IT-Due Carrare

Products used

- 56 GEROtherm® DUPLEX geothermal probes
PE100-RC, PN 16, de 32mm length 100m
- 56 GEROtherm® injection pipes
PE-HD, 25x2.3mm, length 102m
- 56 GEROtherm® PUSH-FIX installation system

1. The inner courtyard of the Palazzo
(source: Georicerche Srl)
2. GEROtherm® PUSH-FIX with weight
(source: Georicerche Srl)
3. Laying the connection pipes
(source: Georicerche Srl)
4. Connection of the geothermal probe
to the connection pipe
(source: Georicerche Srl)



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