



# Howley Energy & Water Limited

## CASE STUDY – MARCHESI 1824, MOUNT STREET, MAYFAIR, LONDON - 2018

Prada Retail UK Ltd are one of the world's premier fashion apparel companies. Prada also operate a traditional Italian pastry and chocolates business via their Marchesi 1824 branded outlets.

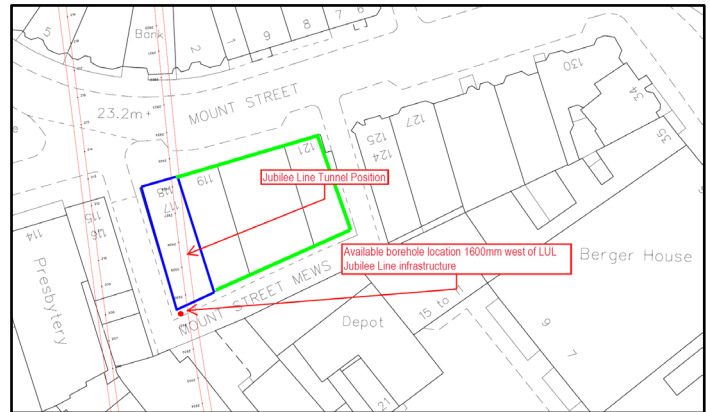


As Prada had already used Howley to design their open loop borehole system at their flagship Old Bond Street clothing retail facility, they wanted to once again use Howley to develop an open loop borehole system at their first UK food outlet in the heart of Mayfair, London. The system was to provide heating to the main spaces with cooling to the basement kitchen areas.

Howley completed a hydrogeological feasibility investigation and proposed that since there was limited area available to site two boreholes, a single open loop borehole system ( something pioneered by Howley in 2014 for another client ) would present the only way forward at this particular site.

The design reflected the use of a mechanical packer carefully placed within the open Chalk section of the borehole with enough fractures below it to abstract water and enough fracture availability above it receive spent water. The Chalk 'block' against which the packer was placed acts as a boundary seal between upper and lower sections of the borehole meaning no thermal interference was realised within the borehole.

Furthermore, during the generation of the report, underground surveys showed that the site was located directly above London Undergrounds Jubilee Line tunnel which presented obvious difficulties towards the drilling of a 135m deep borehole.



After months of negotiation with Transport for London and the building owners ( Grosvenor Estates ), Howley was able to demonstrate that though careful planning and execution, the borehole could be installed without impacting the tunnel infrastructure.

The 4m wide tunnel was located 40m below street level. The limitations of site boundary and tunnel location meant that the team only had one spot to drill the borehole. The borehole was to be drilled 1600mm to the west of the tunnel. With careful verticality checks throughout the drilling process, this was achieved successfully in July 2018.

For the 110kW peak heating and cooling demand, the system was designed to abstract groundwater from the single 135m deep borehole at a flow rate of 3.5 l/sec. The system became operational in January 2018.

<b>Client</b>	Prada Retail UK Ltd
<b>Location</b>	Mayfair, London
<b>Peak Heating kW</b>	110
<b>Peak Cooling kW</b>	90
<b>Groundwater Flow Rate</b>	3.5 l/sec
<b>Borehole configuration</b>	1 borehole
<b>Borehole distance</b>	N/A
<b>Year Installed</b>	2018