

3 – 4 BENTINCK STREET - A CASE STUDY

Overview

Iain and Andrew Howley were engaged via London based building services engineers Long & Partners to design and deliver a Closed Loop geo-exchange scheme for a commercial office development in Westminster, London. The scheme demand was to provide a 120 kW peak cooling load. The client was keen to utilise the foundation piles as the ground heat exchanger. Our design team led by IGSHPA certified geo-exchange designer Andrew Howley demonstrated to the team that the facility could be serviced by 38nr piles drilled to 25m into London Clay. For the system to achieve the desired efficiency target sustainably in the longer term, the system needed to be supplemented with three deep (150m) closed loop boreholes even after equipping all of the available piles with loops.



Scope of Work

A feasibility study was the first task to be completed. The investigation was to assess the estimated load capacity and feasibility of a Closed Loop Borehole scheme as supplemental capacity to the energy piles. This document allowed the whole project team, including the Client to move forward with confidence in a more informed way. Our subsequent role was to carry out a formation thermal conductivity test, provide geothermal modelling, design the system, supervise the drilling installation and fixing of loops within the pile cage. All flow and pressure testing of the circuits were carefully monitored by our engineers.

Drilling crews worked in close proximity with piling contractors and other groundworkers. Planning and programming was crucial at every stage as the works progressed and this was all co-ordinated through the team's experienced engineers both resident on site and from the office. The system became live in 2008.

