

Continuous Flight Auger

The Hauser Forum

Cambridge, UK



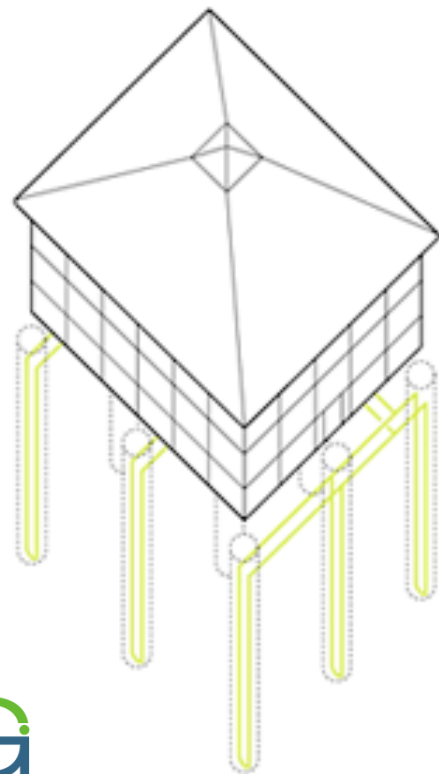
Installation of C.F.A. piles with Geothermal Pipes



Artist's Impression of the Hauser Forum Building

Introduction

The Hauser Forum is the centre for Entrepreneurship and home to Cambridge Enterprise, the University's science and technology commercialisation office. The project team proposed the use of a Closed Loop Geothermal Heating and Cooling system, and as such Geothermal pipes were required to be incorporated into the bored CFA foundation piles of the building. All the pipes in the piles are later plumbed in, via a series of pipes, to convey the liquid to the Heat Exchanger.



Artist's impression of the Geothermal system within the piles. Courtesy of Geothermal International



Geothermal Pipe

CLIENT:	Turnstone Estates and Cambridge University
MAIN CONTRACTOR:	Willmott Dixon
CONSULTING ENGINEER:	Mott MacDonald
SPECIALIST CONTRACTOR:	Geothermal International
DURATION OF WORKS:	4 weeks

WORKS DESCRIPTION

150no., 600mm diameter CFA piles, up to 25m long, with twin (4 pipe) 32mm geothermal pipes. Designed to supply up to 117kW of cooling and 188kW of heating.





Boring of Pile



Insertion of Geothermal Piping

At the Hauser Forum Development, Cambridge working with Willmott Dixon, the main contractor for Cambridge University and Turnstone Estates, we installed 150no. 600mm diameter CFA piles. The piles were up to 25m long, with twin loop (4 pipe), 32mm diameter geothermal pipes attached. The reinforcement cages were up to 6m long with 6no. T16 bars designed to accommodate up to 1.5MN. The site team devised a system to successfully plunge the geothermal pipes down to between 15m and 24m deep, using a central T32 bar. The soils in the area were known to be clays and the concrete used was a grade C28/35, with a modified workability.



Insertion of piping and reinforcement cage.

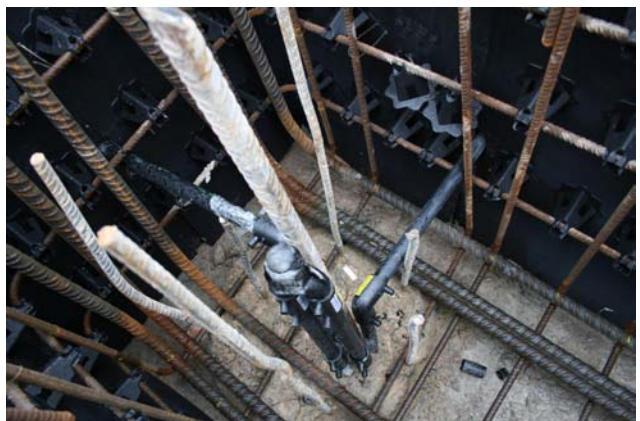


Completed pile

Geothermal pipe included in the piles allow the constant temperature of the ground, to supply liquid at around 12 degrees centigrade, via the pile concrete to a heat exchanger unit, installed to replace conventional boilers and air conditioning units. This is a closed loop system and the pipe length on this project was designed for the Client by Geothermal International. They also supplied the pipe, connectors and the heat exchangers. This system was designed to supply up to 117kW of cooling and 188kW of heating, to the completed buildings.



Breaking down of pile after installation



Geothermal pipes in the foundations prior to concreting