

'Big Rig' arrives in Newcastle for final phase of borehole

June 2 2011

A pioneering project to drill deep under the heart of Newcastle in search of geothermal energy is about to enter its final phase.

This week sees the arrival of the 'Big Rig', a state-of-the-art hydraulic hoist rig standing 16 meters tall and capable of lifting 100 metric tonnes – equivalent to 23 elephants, 66 hippopotamuses or 50 small cars.

The new drill – which is made of a synthetic diamond-like material known as thermo-stable polycrystalline diamond and is being supplied by specialists NOV Downhole – will bore as far as 2,000m underground as part of a major research project being led by Newcastle University.

Drilling deep under the planned 24-acre Science Central – the site of the former Scottish and Newcastle Brewery – the University team hopes to eventually find water that is at a temperature of around 80 degrees centigrade.

Since the £1,050,000 project was launched three months ago, UK-wide drilling specialists Drilcorp have opened up the first 250m, taking the borehole down past the old mine workings of the former North Elswick Colliery.

Now European onshore drilling experts Geometric Drilling Ltd are picking up the baton and drilling down the remaining 1,750m.

Project lead Professor Paul Younger, Director of the University's

Newcastle Institute for Research on Sustainability, said: “Our aim is to rise to the challenge of putting a novel form of deep geothermal [energy](#) at the very [heart](#) of city centre regeneration.

“This is a golden opportunity to see if we can provide some, if not all, of the energy requirements for Science Central from the most low-carbon energy source there is.

“If we’re right and we pump up water at such elevated temperatures, it would mean a fully renewable energy supply for a large part of the city centre, massively reducing our reliance on fossil fuels and reinforcing Newcastle’s position as the UK’s most sustainable city.”

Funded by the Department of Energy and Climate Change, Newcastle Science City Partnership and the British Geological Survey, the borehole is designed to explore the rocks along one of the UK’s largest geological fault zones – the so-called Ninety Fathom Fault Zone – which shows signs of hosting hot groundwater.

Tom Pickering, Geometric Drilling's Managing Director, said: “We are very pleased to be working as part of this pioneering UK geothermal project and take pride in being able to transfer our traditional oil and gas drilling competencies into the emerging market of green geothermal technologies.”

The geothermal [borehole](#) is the first project to take place on Science Central which is earmarked to become a hub for the University’s world-leading research and initiatives tackling the great societal challenge of sustainability.

Provided by Newcastle University

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