Centrum Building – Norwich Hybrid Air & Ground Source Heat Pump System



Project Value: £Confidential (>£500,000)

Project Start Date: 18th January 2018

Project End Date: 1st February 2018

Stakeholders: Morgan Sindall Plc Emcor Engineering Services Ltd Econergy Ltd, British Gas Company BDP Consulting Engineer



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James Lofthouse had under the employment with REC Renewable Energy Ltd delivered the test borehole and thermal conductivity test as part of the feasibility study for the project to determine the required number of boreholes and their design therein to meet the 450kW cooling and 300kW heating loads for the building.

REC Renewable Energy Ltd, were unsuccessful in the design and build tender for the heat pump system losing to Econergy a British gas company. REC Renewable energy was dissolved due to a change in strategy by the board of directors of the REC Group. At this point James Lofthouse took a position with Econergy, A British Gas Company. One of the first projects assigned to James was the completion and rectification of the Centrum Building



project, as to date the system could not be commissioned. With construction not complete but nearing main contractor handover time was limited, as such James undertook an examination of the implemented design and corrected errors preventing the safe operation and commissioning of the system. Mr Lofthouse was then appointed as project manager due to his extensive experience with hybrid heat pump systems.



The modifications required were extensive and included plant room hydraulic modifications, valve selection replacements, below ground pipe work modifications. Below ground modifications were perhaps the most invasive requirement due to the deviation of the collector pipe work from 40mm to 32mm, a cost saving that ultimately caused the system pressure drop to be greater than that than the

system pumps could meet at the design condition. This was a deviation from the original design as was the location, having moved from a car park to within 1m of the building perimeter.

James procured abnd sourced suitably qualified installers and operatives to carry out the works and modifications and managed all site activities as a sub-contractor to the main contractor. James completed the contract inclusive of client FM team training on the operation of the system and the system controls (Siemens) in conjunction with Paul Maxwell-King (now of MaxKing Controls Ltd) a preferred sub-contractor of JBL Engineers Ltd.

BDP Consulting Engineers Case Study: <u>https://www.bdp.com/en/projects/a-e/centrum/</u>

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