

# Sludge Dewatering Scheme Stoke Bardolph

**Client :**  
Severn Trent Water

**Designer :**  
Pick Everard

**Location :**  
Nottingham

**Date :**  
2003 - 2004



In August 2003, BAM Nuttall was awarded a contract under the framework agreement with Severn Trent Water, for a sludge dewatering scheme at the Stoke Bardolph Sewage Treatment Works in Nottingham. The scheme combined both civil and M&E elements and involved the installation and commissioning of several items of M&E plant, supported on RC bases, interconnected with buried pipework and cabling. Over 1200m of HPPE pipework was laid between the new and the existing works and a 24,000m<sup>2</sup> concrete slab was laid on which to store the produced cake.

The main items of mechanical plant installed were three centrifuges which dewater the liquid sludge produced by the treatment works into a peat-like 'cake'. The cake is conveyed to a concrete storage slab and the liquid centrate produced is pumped back to the head of the treatment works. To assist the dewatering process, a large chemical polymer dosing plant was also installed along with a high pressure water supply plant.

All of these mechanical items were electrically powered requiring a high voltage supply and hence the provision of a 32kV transformer. Three large electrical control panels were also installed to fully automate the control of all of the plant. Other items of mechanical plant supplied included a weighbridge, a wheelwash, a lime dosing plant and three pumping stations.

All of the mechanical plant is supported on reinforced concrete foundations. These are relatively simple pad foundations but include a high number of service penetrations for cabling and pipework.

The largest element of civils work was the cake storage slab. The slab is situated within a field immediately adjacent to the existing works. As the field was so flat, a cut and fill earthworks exercise was required to produce falls across the slab for drainage. The 24,000m<sup>2</sup> slab was originally designed as a traditional RC slab, laid in bays but an alternative, value engineered solution of laying the slab using roller compacted concrete proved to be a very much quicker, easier and cheaper method. The slab is surrounded by a 1.8m high kingpost and sleeper wall. A gravel drain also surrounds the slab to prevent any runoff into the surrounding ground.

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