



## **United Utilities - Liverpool WwTW, Sandon Dock**

January 2002

Main Contractor: Birse Construction Ltd.

The task facing Birse was to construct new structures over existing Victorian dock features, including buried masonry structures and infilled basins. In complete contrast to previous large diameter piles used on this particular site in the 1970's, Systems Geotechnique designed and installed a relatively low number of permanently lined, drilled and grouted minipiles, in order to reduce the time, risk and costs involved in the previous method. A proprietary overburden drilling system was used to give effective penetration of dock structures, natural 'soft' soils and the founding stratum of Sherwood Sandstone. A total of 93 piles were constructed with nominal 200mm socket diameter and a typical length of 20 metres. Reinforcement comprised fully threaded bar and threaded/socketed API tube to give structural pile working capacities of up to 900kN.