

Permanent Ground Anchors at Prescott Lock, Olympic Park, London, UK



Project

Prescott lock is an £18.9M tidal lock and flood control system to the south of London's Olympic Park constructed by Volker Stevin to allow freight barges to deliver construction materials to the 2012 Olympic site.

Around 26,000t of soil was excavated and 5,000t of sheet piling driven by the Dutch firm, which is working with consultant Tony Gee to deliver the project on behalf of client British Waterways.

The project involved the construction of a 62m x 8m lock, two flood control gates and a fish pass that together will keep the river water at one level, ensuring the rivers running through the Olympic Park were navigable.

This would allow freight deliveries equivalent to 5,000,000 lorry loads off London's roads.

Solution

Initial consideration was the use of 600 kN capacity steeply inclined anchors founded in the underlying Lambeth Clays. However, Keller Ground Engineering proposed an alternative high capacity anchor solution using SBMAs founded in the relatively thin Shallow beds of Terraced Gravel: multiple anchors installed at inclinations of between 15 and 20° utilised up to 5 unit anchors with 3m unit lengths grouted in the gravels.

Extensive test data establishing ultimate bond stress values in sandy gravels had been obtained from prior SBMA trials carried out over 15 years of system usage.



This allowed immediate commencement of production anchors using working loads of up to 1100 kN and acceptance test loads of 1650 kN. The £600k contract should achieve early completion by Christmas 2007.

The £600k contract was forecast to be delivered early.

Such completion would not have been possible had the specialist data not been available to eliminate the requirement for preliminary anchor trials or had such high capacities not been available to reduce the number of working anchors.

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