



HOBSON HEADLINES

REPLACEMENT OF THE HOBSON BAY SEWER WITH A WASTEWATER TUNNEL
UNDER HOBSON BAY AND THE ORAKEI RIDGE

ISSUE 9

APRIL 2008

High-performance tunnelling machine to arrive soon

The high-performance tunnelling machine which will bore a three-kilometre-long tunnel to replace the ageing sewer pipe across Hobson Bay is due to arrive this month.

Weighing 270 tonnes and measuring 75 metres in length, the tunnel boring machine (TBM) is a heavyweight in the construction world and its advanced capabilities are a New Zealand first.

A 50 metres long by 25 metres wide sound enclosure is being constructed above the temporary shaft on the Orakei Domain site in preparation for the machine's arrival from Canada.

Watercare's Project Manager Mike Sheffield says the sound enclosure, which is a temporary structure, will limit the transmission of noise. "The enclosure is being insulated with two layers of acoustic lining and clad with steel," Mike says. "It will enable tunnelling to take place round the clock as approved in the resource consents by keeping external noise level within permitted levels."

A 300-tonne crane will be used to lower the TBM into the temporary shaft before tunnelling starts in June.

Mike explains that the tunnelling work will occur in a single pass, with the front end of the TBM drilling through rock while the tail end of the machine lines the tunnel with pre-cast concrete segments, ready for grouting. Debris from the excavation will be removed using a small train system.

Once the TBM has bored through to Logan Terrace next year it will be taken apart underground and removed. All



The tunnel between the temporary and permanent shafts is completed in preparation for the TBM's arrival (above).



The TBM at the factory in Canada (right).

work is due to be completed in 2010, following the removal of the old pipe.

Resource consents for the project were granted in December 2006 and construction is being carried out by a joint-venture consortium comprising of The Fletcher Construction Company Ltd and McConnell Dowell Constructors Ltd.



Mammoth concrete pour scheduled for Orakei

A mammoth concrete pour, requiring 150 concrete trucks, is scheduled to take place on the Orakei Domain site later this month.

Approximately 700 cubic metres of concrete will be poured over the course of one day to form the 1.4 metre deep, 23 metre diameter base slab of the pump station.

Project Manager Mike Sheffield explains: “The base slab is designed to accommodate both the structural requirements of the pump station shaft and to assist in ensuring the pump station has enough weight to counteract the uplift from groundwater. With over 2,000 tonnes of steel and concrete forming the base slab, any issues with uplift from groundwater pressure are certainly taken care of.”

The external appearance of the pump station was developed by architectural designers and was approved through the Auckland City Council Urban Design Forum.



The permanent shaft, pictured in the forefront, will have a 1.4 metre deep base slab of concrete

The exterior will be timber clad and the roof will be made from lichen-coloured coloursteel. The surrounding area will be landscaped to help the site blend in to surrounding vegetation. It is scheduled to be completed late next year.

Work begins at the bottom of Logan Terrace and Victoria Avenue



Environmental Planner Jenny Vince and Environmental Acoustic Consultant Michael Riley of J.P. Styles Ltd ensure the construction noise on the trestle way is within resource consent limits

Watercare’s contractors have started excavating the shafts at the bottom of Logan Terrace and Victoria Avenue, having completed the access way from Shore Road and established reclamations at each end.

The shafts will collect branch sewers from Parnell, Remuera, Meadowbank and Newmarket and connect to the new Orakei Domain pump station, pumped to the eastern interceptor, and then gravity fed to the Mangere Wastewater Treatment Plant for processing. The shafts will be covered with a concrete lid when the tunnelling is complete and the surrounding area will be landscaped.

A section of the Hobson Bay walkway, near the bottom of Victoria Avenue, is temporarily closed. After the work is complete the walkway will extend over the reclamation.

Feedback

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