

Overseas Projects



Deep Tunnel Sewerage System for Singapore

In December 2003, the initial phase of construction of a very deep sewer tunnel was completed. The project was commissioned by the Public Utilities Board of Singapore and at 7,717 meters is the world's longest tunnel constructed using a single-sealed earth pressure type boring machine.

The project was designed to alleviate the growing strain on the present system caused by rapid growth in urban population, and provide this island country with a comprehensive 80-kilometer sewer system that will be maintenance free for 100 years. When completed, the system will collect refuse in two large treatment facilities located at the east and west ends of the island city and large enough to accommodate the city for a century of growth.

The section of the tunnel complete during the term extending 7,717 meters between Bedok and Paya Lebar in the southeastern area of Singapore. The tunnel has an inside diameter of 6 meters and is located at a depth of 35 to 45 meters. The ground under Singapore is inconsistent and this made boring the tunnel across the 7.7 km-long distance very challenging. All work had to be completed without any disturbance to the ground surface. Penta-Ocean is also engaged in secondary, corrosion-proofing work on the tunnel with completion expected this year.

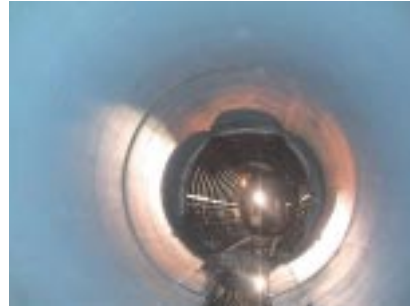
The Company also won the contract to build the Harbour Front Mall, in Singapore. Scheduled for completion in 2005, the facility will be a large-scale commercial and entertainment center. This project will rival the landmark Esplanada Theatres complex, a spectacular performing arts center located at the edge of Singapore Harbor, completed recently by Penta-Ocean.

Several buildings are under construction in Hong Kong, including the 25-story Lockhart Road Office Building, the 8-story Chai Wan Elementary School, and St. Andrew's Catholic Church and an attached kindergarten. All of these projects are scheduled for completion during the current term. Overseas ODA-funded construction projects completed during the term included the secondary Apia Harbor extension work for the Samoan Ministry of Transport, which was completed in October 2003, and a medical supply center for the Ministry of Health of the Republic of Fiji. These projects are part of Japan's ODA program to assist in the improvement in infrastructure of developing nations.

Projects currently underway in the region include the Hai Phong Port Rehabilitation Project, in Vietnam, and the Subic Bay Development Project, in the Philippines.



Shield machine



Completed 7.7km sewer tunnel, Singapore



KCRC Tsuen Wan station, Hong Kong