

ON-LAND CIVIL ENGINEERING

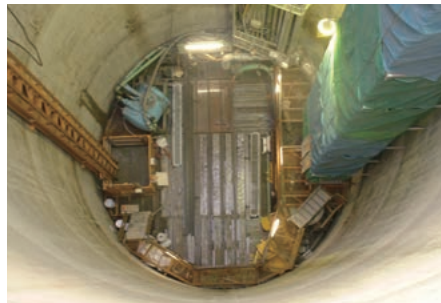
Operations

With a century-long history as a highly-reputed, reliable contractor in marine construction and engineering, TOA also has accumulated experience and expertise in on-land civil engineering through the completion of various projects. Among the projects are roads, bridges, railways, tunnels, water dams, river dikes and water gates, water supply and drainage systems, sewage collection and treatment facilities, land development, and environmental mitigation and rehabilitation programs. In each and every project, TOA has devoted all of its capabilities to faithfully execute its duties and responsibilities as a contractor, enhancing TOA's reputation as one of the most trustworthy contractors in Japan.

Shibakawa Aqua-duct Shield Tunnel

The Shibakawa River suffered from deteriorating water quality due to increases in domestic sewage from the growing population in its basin. As the channel slope of the Shibakawa River was too gentle for its natural flow to cope with the pollutants in the sewage.

TOA was awarded a contract to construct a shield tunnel having a total length of 2,330m and an inner diameter of 1,650mm to connect the two rivers. One of the key requirements of the contract was to recycle the shield sludge in order to minimize the adverse impact on the environment caused by the construction by-products. TOA's technical team properly responded to the requirement by developing plant to process 5,300m³ of soft and clayey shield sludge into a construction material with characteristics.



2nd Magsaysay Bridge and Butuan City Bypass Road in Mindanao, Republic of the Philippines

In the Republic of the Philippines, the road network bears 90% of the passenger traffic and 50% of the cargo transportation, but many roads in various areas are unpaved or too narrow to keep up with the growing volume of traffic. Funded by an aid-loan from Japan's ODA program, the Government planned a bypass road in Butuan City to improve traffic conditions and bolster the economy in the northeastern region of Mindanao Island. In this connection, the Philippines awarded a contract to a joint venture of TOA and Nippon Steel Corporation to build the 2nd Magsaysay Bridge, a steel cable-stayed bridge with a total length of 882m, a two-lane bypass road with a total length of 8.1km, and two link roads with a length of 1.33km and 2.9km respectively to connect the bypass road with the existing main road.



Rehabilitation of Sewage Drainage System in Chiyoda Ward, Tokyo

The sewerage network in downtown Tokyo, was constructed nearly one century ago. The Tokyo Metropolitan Government started a project to rehabilitate the sewage drainage network through reconstruction and refurbishment. TOA was awarded a contract to reconstruct the drainage system for surface runoff in Chiyoda ward. Against the construction site of narrow streets with heavy traffic and a dense concentration of buildings, TOA's highly-qualified engineers dealt with various difficulties and utilized the shield tunnel method to complete the drainage system, which measured 2,058m in length with an inner diameter of 2,200mm, on schedule without any accidents.



Newly Completed Project

Emergency Restoration Works of Seisho Bypass Toll Road, Kanagawa Prefecture

A typhoon washed away the shoreline retaining walls of the Seisho Bypass, a four-lane toll road running along the coastline of Sagami Bay in Kanagawa Prefecture. As its closure caused severe congestion on the local roads, Central Nippon Expressway Co., Ltd., gave TOA an order to restore the damaged structures and reopen the road. TOA devoted all of its expertise and capabilities in marine engineering to provisionally reinforce the damaged structures, and tentatively reopened the bypass road after only 20 days. This was appreciated so much by the road administrator and the local communities.



Tokyo International Airport Runway C Ground Stabilization Work (Tokyo)

At Tokyo International Airport, the largest airport in Japan, the number of take-offs and landings of aircraft has exceeded 380,000 per year. Of the four runways that are in service, work was undertaken to stabilize the ground under Runway C, which runs south to north, to prevent liquefaction. This work was carried out at night after all flight operations had ended, with up to 100 construction vehicles and 200 workers deployed safely and efficiently in a line that stretched for up to one kilometer at peak periods. It was necessary to conduct careful inspections after work was completed for the day to ensure no rocks or other debris had been left on the runway.



■ Client

Kanto Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism

■ Construction period

April 2013 to March 2014

■ Site of construction

Ota-ward, Tokyo

■ Project outline

Stabilization of ground, creation of solid ground, transportation of produced soil, chemical grouting, appurtenant work, temporary works

Denpasar Sewerage Development Project, Phase 2 (Indonesia)

Following Phase 1 of the Denpasar Sewerage Development Project, TOA carried out work to build a sewerage treatment facility and sewerage pipe network in the Denpasar district and outlying sightseeing districts of Bali Island in the Republic of Indonesia. The sewerage system in these districts was undeveloped, resulting in sewerage flowing directly into rivers, drainage ditches, etc. The Denpasar Sewerage Development Project was started to protect the ocean, which is a valuable tourism asset, from such pollution.



■ Client

Urban Planning Agency, Ministry of Public Works of the Republic of Indonesia

■ Construction period

October 2009 to July 2013

■ Site of construction

Bali Island, the Republic of Indonesia

■ Project outline

Construction of sewerage network (approx.2.6km). Providing emergency power generators to pumping stations. Providing additional pumping facilities, aerators, and emergency power generators inside sewerage treatment plant. Construction of sludge drying bed and storage facility