ON-LAND CIVIL ENGINEERING

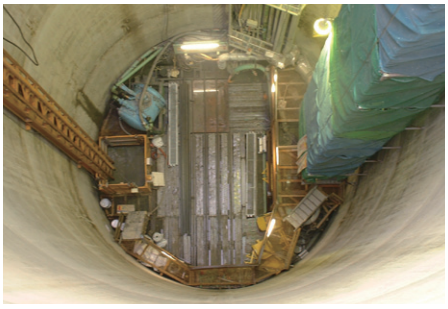
Operations

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 (Saitama)

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 5,300m^3 of soft and clayey shield sludge into a construction material with characteristics.



2nd Magsaysay Bridge and Butuan City Bypass Road (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 (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

Preparation of Site for Grounds at Teikyo University of Science (Yamanashi)

With regard to site preparation for grounds on the Uenohara Campus of Teikyo University of Science, TOA CORPORATION was responsible for planning, preparing, and constructing the grounds.
Putting the dredged soil generated by the large-scale construction and improvement project for the Sagami Reservoir to effective use as soil for the preparation of the grounds for this project, made it possible for the work done on this project to be friendly to the environment.

■ Client
Teikyo University of Science
■ Construction period
April 2004 to March 2016
■ Site of construction
Uenohara City, Yamanashi Prefecture

■ Project outline
This project involved site preparation for grounds at Teikyo University of Science.
The preparation area was 94,000m^2 and the earth volume of the landfill was 770,000m^3.

Post-Disaster Restoration Work on Outer Face of Coastal Breastworks at Kesennuma Port (Miyagi)

Construction of the breastworks (seawall) was carried out as a part of a project for the restoration of the disaster-damaged commercial port quay in Asahicho in Kesennuma, which suffered catastrophic damage from the Great East Japan Earthquake.
Due to the shortened construction period and to avoid being affected by any issues with the supply of concrete, a hybrid structure (steel frame filled with concrete) was used for the structure of the breastworks. The structure was composed of footing blocks (17.4-ton blocks), which served as the foundation, and a wall formed of four rows of blocks (24.4-ton blocks) to withstand the impact of tsunami.

■ Client
Miyagi Prefecture
■ Construction period
March 2014 to March 2016
■ Site of construction
Kesennuma City, Miyagi Prefecture

■ Project outline
This project involved carrying out work on the Kesennuma Port Asahicho District coastal breastworks, which suffered catastrophic damage from the Great East Japan Earthquake. Construction work was carried out over a length of 532.8m, with work on the breastworks undertaken over a length of 532.8m, and work on the cargo handling yard covering an area of 8,814m^2.