

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

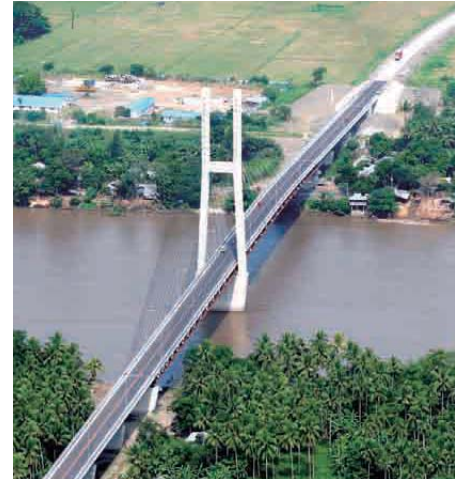
The Shibakawa River suffered from deteriorating water quality due to increases in domestic sewage from the growing population in its basin. As the channel slope of the Shibakawa River was too gentle for its natural flow to cope with the pollutants in the sewage.

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.



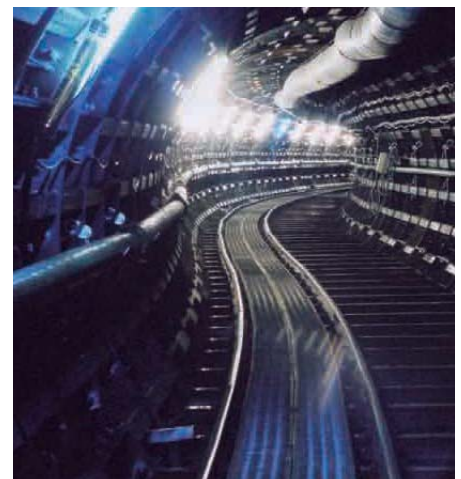
2nd Magsaysay Bridge and Butuan City Bypass Road in Mindanao, Republic of the Philippines

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

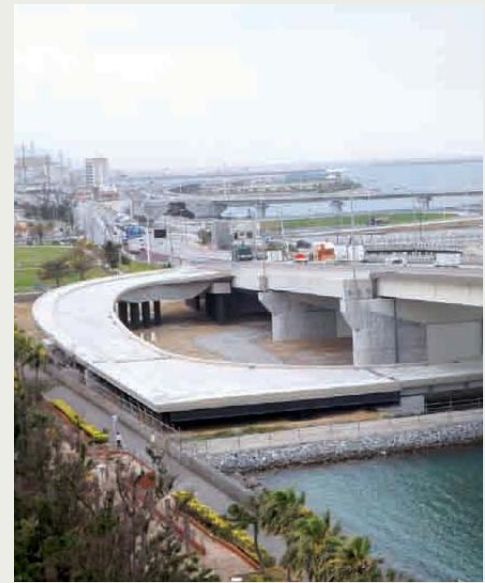
Emergency Restoration Works of Seisho Bypass Toll Road, Kanagawa Prefecture

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.



Work on Road Top at Naha Port in Tomari Wharf area, Okinawa Prefecture

Construction work was carried out on the bridge superstructure of a 181-meter section of the Naha Port Road (Wakasa Route No. 2 Bridge), which connects to the Tomari Bridge and will become the access road to the International Passenger Ship Terminal. The opening of Wakasa Route No. 2 Bridge is expected to greatly improve accessibility to the Passenger Ship Terminal, as well as alleviate traffic congestion in the vicinity of the port.



■ Construction period
February 2012 to March 2013

■ Project outline
Construction of hollow-core slab bridge (two spans); accessory work for constructing bridge; paving work; work on steel bridge superstructure; work on multiple connecting aspects in bridge construction

Ho Chi Minh City Water Environment Improvement Project Package A – Dredging and Work to Reinforce Embankment in Socialist Republic of Vietnam

The embankment reinforcement work for this project consisted of dredging an approximately two-kilometer stretch of a river that runs through the center of Ho Chi Minh City, Vietnam, as well as carrying out reinforcement work on the river embankment that included planting vegetation and putting in lighting fixtures. This project was carried out as a part of a yen loan project provided for the purpose of improving the water environment of a river running through the central area of Ho Chi Minh City.

■ Client
People's Committee of Ho Chi Minh City
■ Construction period
September 2011 to October 2012



■ Project outline
Dredging of the river : Vol.:402,233 m³
Reinforcement of river embankment : Length : 1,509 m (including landscaping)