

Completion of the Tokyo International Airport New Runway B

Currently linked with 45 other airports in Japan, Tokyo International Airport (Haneda Airport) plays important social and economic roles serving 54 million passengers annually. The airport is equipped with facilities that make it a center for flight tests and aeronautical meteorology in connection with runway construction and maintenance, as well as aircraft maintenance and overnight aircraft base. Construction on New Runway B, the airport's new crosswind runway, began in April 1997 and was completed in March 2000, when the runway was also put into service.

Situated 380 meters offshore from the old runway B in order to resolve noise problems, New Runway B, 2,500 meters long and 60 meters wide, is the first in Japan to employ soil improvement for improved earthquake-proofing and recycled materials on a large scale. TOA made a major contribution to the construction of this airport runway with our sand compaction pile technology for the improvement of soft ground.





Construction of Osaka Port Wharf

This is a jetty type of wharf which is 350 meters long and, including the apron, 40 meters wide. The front of the wharf has a depth of 15.3 meters to allow large container ships to come alongside. The wharf consists of steel pipe piles foundation driven into the front of caisson revetments and jetty superstructure.

We conducted extensive studies of concrete cold joints and methods to control cracking after pouring concrete over a large area as construction methods for the superstructure of the wharf and achieved greater results than expected in quality assurance and safety control. Learning from the destruction hit on port facilities in the Great Hanshin Earthquake, we designed the wharf to be available for use in

emergencies, giving it a 15 meter depth and providing it with functions for an earthquake-proof berth. As a sole contractor for this project, TOA was able to make extensive use of our marine engineering technologies and experience.

The Yumeshima and Maishima linking bridge 878 meters long and 410 meters long, respectively, for floating portion, will be completed by the end of fiscal year 2000. It will attract attention as the world's first type of floating bridge.

When large-sized vessel is navigating, the floating portion of this bridge revolves with a pivot placed adjacent to Maishima. Upon its completion, it will be the world's largest moving bridge. TOA, which is engaged in this project, completed the construction of bridge foot portions adjacent to Yumeshima.



Reconstruction of Nagaragawa Ojima Watergates

The Ojima watergates were constructed in 1961 together with repair work on the revetments enclosing Ise Bay after the typhoon of 1959 and have subsided 1.5 meters due to the subsidence of ground settlement across a wide area resulting from the sudden pumping of large amounts of ground water for industrial use in recent years.

In a first phase of construction, from February 1996 to March 1998, TOA removed the subsided sluice gates and completed the foundations for a new set. In the second phase, completed March 2000, we completed construction of the new sluice gates, removed the temporary structures and completed the

high-tide embankments. The completion of this project with its extensive earthquake-proofing and subsidence-proofing measures improved the ground in this "zero meters" region with CDM methods and steel pipe piles to prevent the liquefaction of its sand bed.



Joshinetsu Expressway Kanaya Project

The Joshinetsu Expressway branches off from the Kanetsu Expressway to run 203 kilometers to the Hokuriku Expressway. The Kanaya Project, awarded by the Japan Highway Public Corporation, was completed over a period of 37 months, but the full length of the expressway has been opened to traffic over a period of 20 years.

The site in question is an area presenting numerous difficulties, but we exploited our experience in land civil engineering to (1) counter landslides with landslide-inhibiting piles and anchor works, (2) build a road that makes extensive advantage of an area rich in natural greenery, and (3) reduce construction costs by rationalizing work methods and optimizing resources allocation wherever possible.



Nagakubo Industrial Site Land Formation

TOA is aggressively seeking orders in land civil engineering as well. One project completed during the period under review is the Nagakubo industrial site land formation project, a relatively large-scale project taking 23 months to complete and covering a development area of 4373 hectares. This development of mountain forest lands in land formation for an industrial site will not only vitalize the region but is also expected to feature the participation of numerous companies with the improvement of its infrastructure.





AQUA CITY ODAIBA

TOA participated in every stage, from planning to completion, of AQUA CITY ODAIBA, the largest commercial facility in Japan, completed on April 1, 2000. The AQUA CITY ODAIBA site is a landfill whose bearing layer is 30 meters below ground level. The foundation pile work generated a considerable volume of surplus soil and mud.

We completed this difficult foundation construction successfully by driving ferruginous piles. Although the project took some ten years to complete due to delays and plan revisions after the start, we have built it on the basis of a fundamental concept of exploiting the superb surrounding environment of this coastal urban sub-center and providing a space of high quality. We designed to provide sea visible points effectively in a stretch of some 270 meters so that visitors can make a natural tour of the facility and enjoy the beauty of the seascape, while recognizing their location in the building. The structures house 70 restaurants, 80 retail and service shops, 13 multiplex cinemas and five attractions.



Reconstruction of the Soma Junior High School Gymnasium

TOA enjoys a fine reputation for our extensive construction work on commercial buildings, hotels, apartment complexes, educational facilities and athletic, cultural and leisure facilities. We are also active in reconstruction projects to provide existing structures with functional improvements and increase the quality of their spaces. This requires not only superior technical capability and experience in design and execution, but also a high degree of creativity suited to the 21st century. This reconstruction project shows the technical capability, experience and creativity of TOA CORPORATION to full advantage.



The Project of Construction of Fisheries Technology Center in Larache

Our marine civil engineering projects, including harbor facilities and offshore structures, and land civil engineering projects and construction of a wide range of buildings have been well received in Southeast Asia, the Middle East and other parts of the world. This reputation led to our winning an order from the Moroccan Ministry of Public Works in May 1998 in the construction project for a fisheries technology center. The center is a training facility to improve Moroccan fishery technology and encompasses 14 structures, including an administrative building, an educational building, a practical training building and dormitories. The center has 5,272 m² of floor space in a building area of 3,755 m² on a site area of 22,900 m².

