



Steel pipe sheet pile foundation (at a temporary cofferdam point)

Artist's conception of the completed Tokyo Port Seaside Bridge (tentative name)  
Length: 760 meters

The Tokyo Port Seaside Bridge (tentative name) is a large bridge measuring 2,933 meters long in its entirety (1,618 meters long in its seaborne section only). It connects the reclaimed land outside the central breakwater and the Wakasu area. When it is fully opened to motor traffic in 2011, the Tokyo Port Seaside Road should generate economic effects worth ¥30,000 million a year by facilitating commodity distribution in and around the Tokyo Port, a gateway for international trade, and by easing traffic congestion in roads serving the Tokyo Bay area. This major bridge is set to become a genuine new symbol of the Tokyo Port, and to serve the port as a "bridge to the future."



## Domestic Civil Engineering Segment

### Foundation Construction of the Tokyo Portside Road / Tokyo

Construction of the foundation for the lower portion of a highway bridge in the south section (Phase II section) of the Tokyo Port Seaside Road was completed in March 2007. The lower foundation constructed by the Company (MP3) is the main pier that supports this composite box truss bridge, one of the largest bridges of its kind in the world (extending 760 meters). The pier is strong enough to sustain the weight of passing vehicles and earthquakes, in addition to the weight of the gigantic bridge itself.

Extremely soft clay covers the bottom of the Tokyo Bay where the pier is located. The clay layer is at least 30 meters thick. In this construction project, we adopted the "steel pipe sheet pile well foundation," a method in which temporary steel pipe sheet pile cofferdams double as the foundation. We were able to demonstrate our commitment to protecting the environment with the adoption of this method, which reduces the volume of soil produced through construction. It also helped us to lower construction expenses. Moreover, we used reinforcement bars with an epoxy coated surface for rust prevention. The pier is a highly durable structure designed to stay in use for 100 years.



### Shin-Itoman Ship Yard Construction / Okinawa

**Construction period:** July 2005 to September 2006

**Client:** Shin-Itoman Ship Yard Co., Ltd.

**Construction summary:**

- Hoist foundation construction (dock): L = 100 m × 2 units
- Rail foundation construction = 6,377 m<sup>2</sup>
- Syncro lift hoist installation 375 t × 18 units
- Syncro lift platform manufacture and installation 25 × 80 m × 1 unit
- Crisscrossing platform truck manufacture: 21 units

In this project, we constructed a new shipyard equipped with a syncro lift system in Itoman City, Okinawa Prefecture. This is the second shipyard of its kind in Japan. It is larger than the first one. Through this construction project, we established a procedure for installing syncro lift facilities, and accumulated shipyard construction know-how that covers such areas as civil engineering structures, power facilities and piping systems. From this point on, shipyards in different locations are expected to reach their renovation period, and capital investment should increase for both new and existing shipyards. In addition to shipyards introducing a syncro lift system, we can expect to boost sales for shipyards in general by offering comprehensive support to clients in our service fields of planning, design and construction.

### Seibu Oceanfront Pump Station Construction / Hiroshima

**Construction period:** March 2003 to March 2007

**Client:** Hiroshima City

**Construction summary:**

- Work on a continuous underground wall: H = 63 m
- Existing pile work: N = 108 (L = 35 m to 41 m)
- Excavation work: V = 55,310 m<sup>3</sup>
- Earth retaining support work: 3,360 t
- Concrete work: V = 23,000 m<sup>3</sup>

This construction project was part of the rainwater drainage improvement work ordered by the Facilities Section under the Facilities Department of the Sewerage Bureau of Hiroshima City. The project was aimed at constructing the new Seibu Oceanfront Pump Station for the purpose of preventing flooding in the Shoko Center district in Nishi-ku, Hiroshima City. Construction of the pump station required a particularly deep cutting operation. For this work, we adopted the "excavated earth recycling continuous underground wall construction method," which reduces surplus earth, an excavation by-product. The method enabled us to reuse excavated earth, which was impossible in the preceding methods, and realized reduction in the volume of the construction by-product. In October 2005, the 3R Promotion Committee honored our achievement.



*Awarded an encouragement prize from the Minister of Health, Labour and Welfare*



### Sanwa Dock Construction / Hiroshima

**Construction period:** December 2005 to May 2007

**Client:** Sanwa Dock Co., Ltd.

**Design and administration:** Penta-Ocean Construction Co., Ltd.

**Construction summary:**

- Steel pile work (φ 1000 to φ 1400), L = 6.0 m to 47.5 m, n = 240
- Main construction work: L = 300 m, W = 22.4 m to 25.0 m
- Complete set of incidental facilities work

This is a project to build a fitting facility at a dock within the yard of Sanwa Dock Co. Ltd., a leading repairer of medium-sized ships. The pier attached to the seabed made the work extremely difficult and dangerous, but we were able to complete it without incident. Mobilizing our marine technologies, we satisfied the client's requests for functions and quality sufficiently in areas ranging from design to construction, and, by so doing, built a solid relationship based on mutual trust.