

# Domestic civil engineering



## Maintain our top rank in marine civil engineering and improve ranking in land civil engineering

Domestic civil engineering orders for the year ended March 2005 increased by a large 26% over the previous term. The 3-year average amount of orders for "Challenge 21" is ¥151.8 billion, which is approximately on target with the original plan. However, excluding the Haneda expansion project, orders for the year ended March 2005 fall about 16% compared to the previous term, leaving us with a reduction in project volume much lower than expectations.

In addition to our solid efforts, increases in capital investment in the private sector industry excluding power and private railways have provided the momentum to sustain the strong, steady increase in general private sector civil engineering orders for the last two years. The current target is over ¥20.0 billion in orders.

Conventional public sector projects have decreased, but orders in the environmental field, which we have aggressively competed in since the year ended March 2001, have grown steadily to over ¥10 billion. We are also beginning to see solid results in disaster prevention/renovation related projects using our brand technology. We will continue to aggressively pursue the disaster prevention/renovation and environmental related fields, as these fields are expected to boom in the coming years. All of these will help ensure maintaining our top rank in marine civil engineering and improving our ranking in land civil engineering.



### Kansai International Airport Island Reclamation Second Phase - Secondary sand Heaping Part 3

Ten layers of soil were laid to form a strong, even embankment for the airport island. Settlement management became a problem when reclaiming the thick soft clay on the seabed. Centrally managed IT-based systems and GPS-equipped heavy equipment were used to complete this large task quickly and efficiently.

**Construction Period: Sep. 17, 2003 – Oct. 31, 2005**

### Asanabe Dam Construction Project

The local residents have been eagerly waiting for a flood control program for the Asanabe River, a class 1 river that flows through western Tottori Prefecture. We have built a concrete gravity dam to prevent flood damage and control the supply of pooled water from the downstream of the dam. Mantle rock produced from the foundation excavation was used as raw material to make the concrete used for this project, which significantly lowered costs.

**Construction Period: Mar. 13, 2001 – Mar. 20, 2005**



### Goshiki Sakurabashi Bridge and Bridge Beams Earthquake Reinforcement Project

Earthquake reinforcement using Penta Ocean's NDR method was performed on the Goshiki Sakurabashi Bridge on the metropolitan expressway in Adachi Ward in Tokyo. This method is a temporary installation method that allows surveying and reinforcement of underwater structures in rivers and harbors under the same conditions as above-ground projects. A premade hollow steel unit is used to create the dry conditions, allowing restriction-free, high-quality, and low-cost operations.

**Construction Period: Apr. 14, 2004 – Jul. 3, 2006**



### Tohoku Shinkansen Shiriuchi Overpass

The Tohoku Shinkansen running from Morioka to Hachinohe was opened in December of 2002. We are currently building an overpass to extend the line from Hachinohe station to Shin-Aomori station. Once this extension is complete, travel time from Tokyo to Aomori will be cut to 3 hours 20 minutes and is expected to have a positive effect on economy and sightseeing.

**Construction Period: Mar. 27, 2001 – Sep. 26, 2004**