2009 OCEA Award
(Outstanding Civil Engineering Achievement Award)

◆Group Ⅰ

This award is presented in recognition of an achievement relating to innovative planning or design, or individual technologies such as constructing technologies that made an outstanding contribution to the further advancement of civil engineering technology in relation to a specific project.

Effective flood control through integrated and collaborative dam operation at the three Nabari river upstream dams

Yodogawa Integrated Dams Control Office, Ministry of Land, Infrastructure, Transport and Tourism (MLIT)/ Kizugawa Integrated Dam Control and Management Office, Incorporated Administrative Agency, Japan Water Agency (JWA)

Summary

Integrated and collaborative flood control operation at upstream dams prevented inundation in the urban area of Nabari city during the Typhoon No. 18, 2009. Inundation was anticipated to be inevitable under the regular flood control operation. The use of improved rainfall forecast technology and runoff analysis model enabled the effective application of flexible operation protocols in the face of uncertain flows. It resulted in a 1.5 m decrease in river level, and prevented inundation of 1,180 properties.

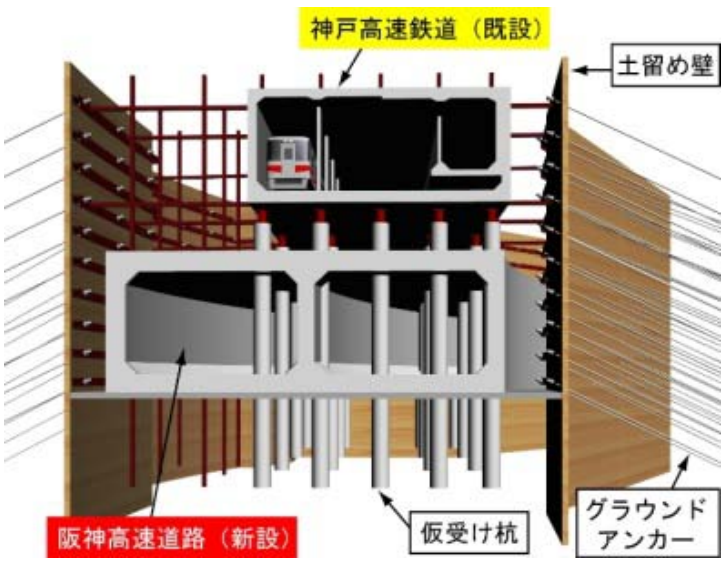
The effort is noteworthy in that it established a new approach to dam flood operation, through which inundation and flood damage were reduced. This is significant given that extreme rainfall events may occur more frequently due to global climate change.

Design and Construction of Large-Scale Underpinning
-Hanshin Expressway Kobe-Yamate Route, Cut and Cover Tunnel Construction in the Kobe Rapid Transit Railway crossing section-

Kobe Rapid Transit Railway Co.,Ltd. / Hanshin Expressway Co.,Ltd.
/ Kajima,Okumura,Sato,Mori,Hanshin JV.

Summary

This is the Japan's largest underpinning for constructing a new underground expressway, directly under the existing subway structure in service. The displacement controlling value of the subway structure was so small that the conventional technology cannot handle the situation. However, the technology development of the "Automatic control system for underpinning" and the "Underpinning construction equipment" overcome the difficulties and enabled the expressway structure to be safely completed The introduction of these newly developed technologies resulted in a drastic improvement in safety of under pinning work, and they are expected to be applied to similar future projects.



Construction techniques for deepwater Immersed tunnel under strong current.
- Construction of the Railway Tunnel Under the Bosporus Straits in Istanbul, Turkey -

TAISEI Corp.

Summary

A railway construction project is now underway in Istanbul, Turkey to connect Asia and Europe by tunnels and stations. The tunnel beneath the Bosporus straits was built using immersed tube techniques under severe environmental conditions such as a strong current and the deepest water depth of 60 meters. To overcome these conditions, innovative construction techniques of the tidal current prediction system by using ICT, Access shaft system that is installed after the first immersion, etc. had been developed and applied. The successful completion of the tunnel has demonstrated that the range of application of immersed tube tunnels can be extended. This contributes to the development of construction technology for underwater tunnels and also to the worldwide recognition of high level of Japanese technology.

Construction engineering and management of line-switching.
-For accomplishment a total of 8 track-switching at the biggest terminal, the Shinjuku station-

East Japan Railway Company Tokyo construction office/ Tokyo National Highway Office, Kanto Regional Development Bureau,MLIT. / Kotsu Transport Construction & Engineering Corp./ OBAYASHI Corp./ TEKKEN Corp./ TAISEI Corp./ Daiwa Odakyu Construction Co.,Ltd/ JR East Consultants Company/ JR East Design Corp.

Summary

The Shinjuku Station is one of the biggest terminals in the world with 7 platforms and 1.5 million passengers a day. For the purpose of mitigating traffic congestions and facilitating traffic transit, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) made a plan to replace and broaden the Shinjuku Overbridge and to construct a 1.5ha artificial ground for a multimodal traffic plaza, and delegated the construction over the railway tracks to East Japan Railway Company (JR East). Under the condition of limited space and time constraint, JR East carried out a total of 8 track-switching to create a space to build the piers of the overbridge and the artificial ground, mobilizing two thousand workers and heavy cranes on rail without suspending the operation of the station.