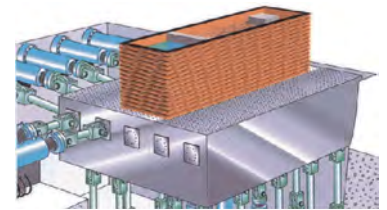
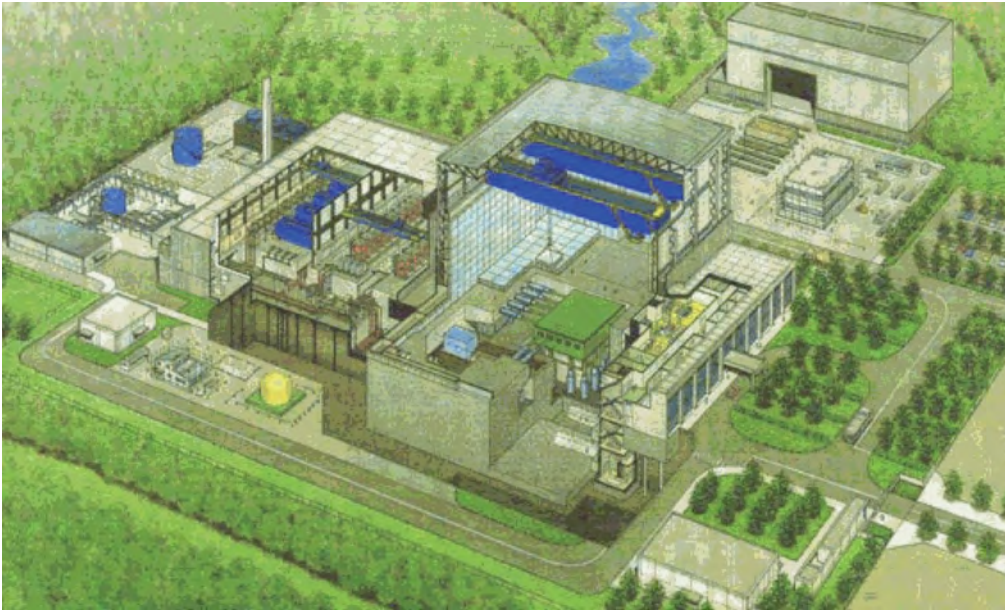
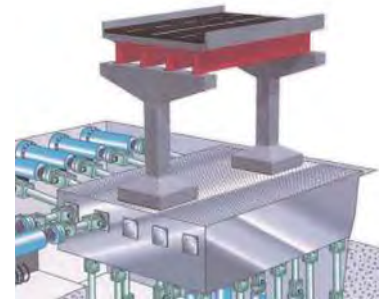


3-D Full-Scale Earthquake Testing Facility (E-Defense)



Liquefaction test with a ground model



Seismic damage on a bridge

Ordering party : National Research Institute for Earth Science and Disaster Prevention

Location : Miki City, Hyogo

Project Summary :

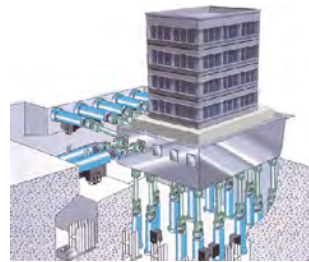
-Area : 6ha of 308ha for test facilities

-Main facility

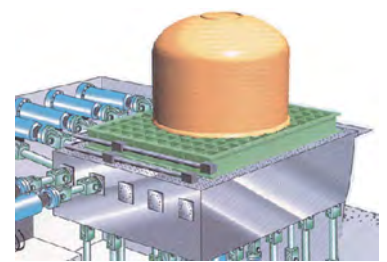
-Experiment Building, Preparation Building, Hydraulic Unit Building, Operation Building, Outside Equipment Area, Various outside utility facilities

Construction Period : Foundation work : Jan. 2000 to Oct., 2001

Construction work : July 2001 to March 2005



Four-story reinforced - concrete building



Safety testing on an explosive storage tank

In this project, we provided execution design service for the world' s largest 3-D full-scale earthquake testing facility, which was ordered by National Research Institute for Earth Science and Disaster Prevention to build in Miki-City, Hyogo Prefecture.

In light of the lessons learned from the Great Hanshin earthquake, this facility was designed to serve as Hyogo' s general disaster prevention center and located at the disaster prevention zone in the Miki Disaster Prevention Memorial Park. This research institute aims to offer a safe and high-quality construction of social infrastructure by studying seismic performances of the social capitals – social infrastructures including electric power, water service, and gas.

The following items can be tested on the State-of-the-art shaking table of 3D full-scale earthquake testing device :

Specification

-On-board capacity (1200 tons) that allows seismic test for large structures

-Exciting force that can reproduce displacement (horizontal 100cm, vertical 50cm), speed (horizontal 200kine, vertical 70kine), acceleration (horizontal 0.9G, vertical 1.5G) at the time of occurrence of disruptive earthquake.

-Excitation control that a destructive test can be effectively conducted

-Measuring and analysis capacity for dynamic behavior of large structures