

## Daido Steel Co., Ltd. / Extension of the Shibukawa plant for the introduction of the forging press machine of 7,000 tons



Photo courtesy of Daido Steel Co., Ltd.

**Ordering party** : Daido Steel Co., Ltd.

**Location** : Shibukawa-shi, Gunma Prefecture

**Project summary** : Forging press machine of 7,000 tons

- Soil survey / Location survey
- Application for shifting of the river  
( Public facility for specific purposes )
- Design of the channel
  - Survey and analysis of ground vibration
  - Design of vibration isolation trench
- Seismic safety evaluation for the existing buildings
- Design and supervision for the buildings and base for the forcing press machine

**Services** : Design for the building ( Extension )

- Building of the steel-frame construction ( 2 F ) : Gross floor area: 2,600m<sup>2</sup>
- Base for the forcing press machine / Underground hydraulic pump room
- Building frame concrete : About 4,600m<sup>3</sup>
- Vibration isolation trench
- Length of gas cushion type : About 70m

**Time of services** : Operation start March, 2008

### [Facility for manufacturing high-value added products]

Daido Co., Ltd. produces the high-level steel forged parts for aircrafts and generators at the Shibukawa plant, but they decided to extend the existing plant toward the lot line for the introduction of the forcing press machine with a doubled welding pressure. The market need was met through qualitative and quantitative expansion of the unworkable and high-level open die forgings.

### [Services provided by Nikken Sekkei Civil Engineering]

Before the plant extension was conducted toward the lot line to install this new machine, we conducted an investigation and analysis of the ground vibration to foresee the affects on the adjoining houses. As our investigation and analysis revealed that building the trench barriers along the lot line is effective to avoid vibration propagation, we adopted a gas-cushion type trench barrier and designed the base appropriate for the press machine.

We also provided application and design services for the shifting of drainage conduits in the river. Our variety of services, including seismic safety evaluation of the existing buildings conducted before the extension of building, made a significant contribution through our multidiscipline engineering.