

House of Letters and Arts, Athens/Greece

Onassis foundation flagship project
MAURER Sliding Isolating Pendulum (SIP)



Figures and Facts

Location:	109, Syggrou Ave., Athens, Greece
Owner:	Alexander S. Onassis Foundation
Contractor:	Tensor Construction Company SA
Design:	Architecture Studio (France)
Utilisation:	Interpretive centre for Athens with opera (1,000 seats), open-air theatre, conference rooms, library, exhibition space etc.
Opening:	End of 2007
Cons. engineers:	Harry Bougadellis AETER
Seismic isolation:	Seismomonosis SA
Dimensions:	65x30x27 m (lxwxh)
Total Building area:	18,000 m ²
Investment costs:	75 million Euros

Involvement of Maurer Soehne

Supply and installation of 48 **MAURER Sliding isolation Pendulums**, with a load bearing capacity of up to 25,000 kN and a movement capacity of ± 255 mm.

Mode of operation:

- Shifting the buildings natural frequency from 1 sec to 3 sec by horizontal isolation of the building from its foundations
- Dissipating of seismic energy entering the structure
- Re-centering of the building after the seismic event



Involvement of Maurer Söhne

The concept of seismic isolation is to separate a structure from the shaking ground during a seismic event. That way, the destructive energy is prevented from entering and damaging the construction. Different approaches were developed from the early 20th century until today – starting point was the provision of a layer of sand between a building and the ground.

The Sliding Isolating Pendulum provides the following additional effects:

- The special sliding material MSM[®] guarantees a defined friction behaviour during varying velocities and stresses. That way, the energy dissipation capacity can be clearly defined. The sliding material is very durable and does not require any replacement after a seismic event.
- The spherical shaped sliding surfaces always restore the structure to its original position during and after the earthquake.

The capacity and functionality of the SIP devices were extensively tested at the seismic test lab of the University of California (San Diego) – the 3D-record of the El-Centro-earthquake was accommodated without any problems.

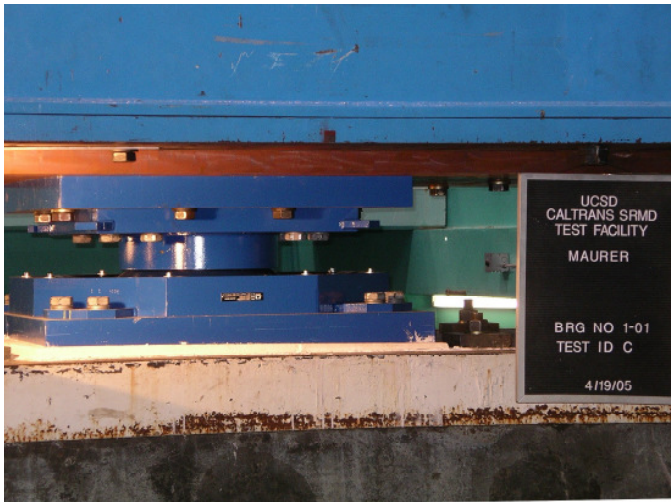


Fig. 1: Full-scale test in San Diego



Fig. 2: Computer graphics of the new building



Fig. 3: SIP-installation on site

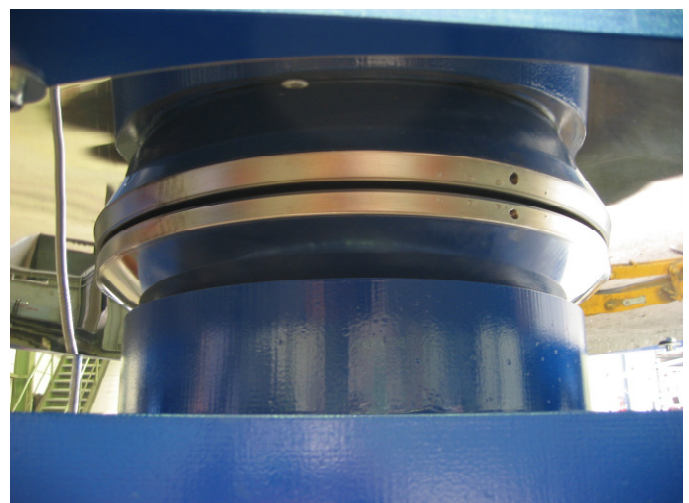


Fig. 4: SIP assembly in the workshop