

PAVILION OF ITALIAN INDUSTRY AT EXPO OSAKA 1970

1969-70 Osaka, Japan

From 15 March to 13 September 1970, the Universal Exposition was held in Osaka, Japan, on a 330-hectare site. With 76 nations taking part, Osaka was the Expo with the most visitors in all: 64.2 million. Italian participation was divided into two pavilions: the national one – designed by Gilberto and Masino Valle and Sergio Brusa Pasqué – and the Italian industry pavilion, designed by Renzo Piano.

The two pavilions occupied the same lot, connected by a footpath. The Italian industry pavilion hosted a series of stands in which the main Italian industries exhibited the most technologically advanced products. The architects were therefore asked to provide an extremely flexible space free from pillars. The pavilion, with a square plan measuring 38 meters per side, a single height and an internal height of 6 meters, was a lightweight box of reinforced polyester, raised one meter off the ground and tensed by a mesh of steel cables. Inside, the 1200-square meter exhibition area had a single central pillar.

The structure consisted of 17 steel pillars – 3 on each side of the pavilion, 4 at the corners and one in the middle – embedded in reinforced concrete foundation beams. The pillars rose 10 meters high and were set 1 meter above grade – the height the pavilion was raised off the ground – and 6 meters – the net height of the interior. To them were welded two horizontal steel sections, which projected 2 meters from the structural cage. A dense network of spiral steel tie-rods connected the pillars to one another, and tensed the side and back panels of reinforced polyester, which were thus braced

Around the perimeter walls there was a main exit and three security exits. Daylight was secured by the translucency of the reinforced polyester membranes, while a series of spotlights provided night lighting. To avoid piercing the elastic roofing membranes with the ducts, cold air was drawn into the pavilion with diffusers positioned at a height of 4 meters and returned at ground level around the perimeter through continuous ducting. The refrigeration and ventilation unit was hidden under the floor level.

The components, all produced in Genoa, in the workshop of the Ermanno Piano company at Erzelli, were shipped to Japan by sea. In Osaka the pavilion was assembled in 40 days by a team of 15 Japanese workers, under the direction of Italian builders.