

MILLENIUUM BRIDGE

CENTRAL LONDON - ENGLAND

Measurement of the tilt of the bridge during simulated live loads



Millenium Bridge crossing the River Thames

The London Millennium Bridge is a 330m pedestrian bridge, spanning the River Thames between St. Paul's Cathedral and the new Tate Gallery, awarded in 1996 after an international competition to Ove Arup (Engineers), Foster & Partners (Architects) and sculptor Sir Anthony Caro.

At least 150,000 people used the Bridge in the first three days of its opening weekend. On Saturday June 10th 2000, a larger than expected movement of the bridge structure was recorded. In order to further investigate this problem, the bridge was closed on June 12th 2000 and a series of tests were developed.

SolData was approached to measure the tilt of the mid section of the bridge decking in two separate scenarios:

Bridge unloaded,
Bridge loaded with pedestrians (120 people, standing in an area 120m long x 2m wide).

Our Engineers had a time frame of only 20 minutes to establish data readings and take the final 'load applied' results.



Loading test with 120 people

Tilt was measured on 6 different bridge sections, firstly, whilst the structure was unloaded and then after the pedestrians had been placed in the standing zones. The two readings from each cross section would indicate any lateral changes in tilt to the bridge deck.

The results were immediately entered into a spreadsheet on site and the overall tilts were computed in less than 10 minutes. The data was presented to the client in digital format on site and then faxed as an official copy the following day.

CONSULTANT :	OVE ARUP & PARTNERS
PROJECT DURATION:	JUNE 2000
SCOPE OF WORKS:	
<ul style="list-style-type: none">• Manual measurement of tilt with 1m electolevel beam.• Reporting.	