The Millennium Bridge is a steel suspension pedestrian footbridge located in London spanning 320m over the River Thames, from the city to the North, to the Entrance of the Tate Modern art gallery on Bankside. The bridge was opened in June 2000 to represent the merge of art and architecture along with the practicality of engineering a shallow decked footbridge.

**Structural Design**

2 Intermediate Y-shaped structures support 4 suspension cables each side of the bridge. These cables run along the sides of the 4 metre wide asphalt decking with steel traverse arm clamping the cables at 8.0m centres, hanging from the clamps are open 'U' shaped supporting the decking itself. The unique arrangement of these materials limit the rise of the structure over the deck to 2.3m, thus limiting the interference of the panoramic views for the pedestrians.

**What About The Loads?**

The Dead Loads and Imposed loads applied to this structure comprise of the self weight of the structure, pedestrians crossing the bridge and the wind loads applied.

- **Cables anchored into reinforced concrete foundation**
- **4 No. 120mm diameter coiled cables**
- **4 No. friction clamps at each traverse steel member location**
- **traverse arm with integrated clamps at 8.0m centres.**
- **15.0m tall Y-shaped reinforced concrete piers using C60 concrete and 75mm diameter rebars!**
- **the piers are founded on piled foundation constructed using a caisson method of engineering**
- **4.0m wide aluminium deck with lateral bracing**

**Interesting Fact!**

When the Bridge opened on 10th June 2000, over 100,000 people proceeded to use the footbridge. As pedestrians crossed the bridge, their footsteps became synchronized with the flex of the steel resulting in an unexpected phenomenon to the suprise of the engineers, the bridge was immediately closed, pending an explanation!!

**A Wobbly Bridge?**

The Millennium Bridge did not 'fail' however, 91 dampers were introduced to alleviate the phenomenon, the bridge was re-opened in 2002.

SEE FOR YOURSELF!!

https://youtu.be/y2FaOJxWqLE