

Introduction to Integrated Design

Bridges lecture

Linking London: The Millenium Bridge

- MILLENNIUM BRIDGE FACTFILE:

Designed by: Architect Sir Norman Foster with sculptor Sir Anthony Caro and engineers Arup

Opened: 10th June 2000 | Closed: 12th June 2000

Reopened: 27th February 2002

Length: 330m / Width: 4m / Height above river at high tide: 10.8m / Handrail height: 1.2m

Piers: Concrete and steel / Cables: 120mm locked coil / Decking: Aluminium / Handrail: Bead blast stainless steel

Basic Bridge Types

- Girder. Span 30'-600'.
- Arch. Span 120'-450'.
- Truss. Span 120'-1500'.
- Cable stayed. Span 330'-1400'.
- Rigid frame. Span varies.
- Suspension. Span 210'-3000'+.

Bridges Within Context

- Spider web
- Natural stone bridge
- Log bridge
- Stairs and paths on hillsides
- Wooden bridges for walking
- Rope bridges
- Suspension bridges - Capilano Suspension Bridge: George Grant Mackay, the Scottish civil engineer who built the original suspension bridge in 1889.
- Canal bridge: A channel-bridge over the River Elbe joins the former East and West Germany, as part of the unification project. It is located in the city of Magdeburg, near Berlin.
- Roman bridges.
- Iron bridges.
- Bridge of Truth, Germany.
- Rialto Bridge, Venice. Antonio da Ponte.
- Santa Monica Pier.
- Cable stayed bridges.
- Golden Gate Bridge, Strauss and Ellis, San Francisco.
- Blackfriars Railway Bridge, London.

- Amsterdam: bridges over canals.
- Ponte Vecchio, Florence, 1345.
- Wooden truss and arch bridges.
- Covered bridges.
- Kapellbrücke: A 204 m (670 ft) long bridge crossing the Reuss River in the city of Lucerne in Switzerland. The covered bridge, constructed in 1333, was designed to help protect the city of Lucerne from attacks.
- Dancing bridge: Royal Ballet School and the Opera House. Wilkinson Eyre.
- Mur Island, Vito Acconci.
- Zubizuri (White Bridge), Santiago Calatrava, Bilbao Spain.
- Logan International Airport Elevated Walkways.

Assignment Background

A Pedestrian Bridge over Memorial Drive

- site and precedent