The Akashi Kaikyo bridge

Types of bridges

- Beam bridges
- Cantilever bridges
- Arch bridges
- Truss bridges
- Suspension bridges
- Cable-stayed bridges

Suspension bridge

- Consists of two main cables suspended from towers.
- Using large concrete blocks as anchors for the cables.
- Roadway is suspended by smaller vertical cables.

Akashi Kaikyo Bridge (AKB)

- The longest, tallest and most expensive bridge in the world.
- It links city of Kobe with Awaji-shima island.
- Four times longer that Brookly bridge.
- Bridge with the longest main span in the world.

Problems engineers had to solve

- Rain
- Distance
- Weather
- Strong currents
- Frequent earthquakes
- Deep water

Technology they used

- Roadways is supported with a truss. (also helps against wind).
- Twenty mass dumpers in each tower.
- In addition, bridge can handle 180 mph winds and earthquakes with a magnitude up to 8.5 on the Richter scale.

Summary

- Project started in 1988., finished in 1998.
- Cost: 4.3 billion USD
- Lenght: 3911 m
- Height: 282.8 m
- Longest span: 1991 m
- Materials used: steel and reinforced concrete
- The longest, tallest, most expensive bridge in the world.

New words

- Gale wind- bura
- Strong current- snažna morska struja
- To support with a truss- poduprijeti rešetkom
- Complex network of triangular braces- složena mreža trokutastih spona
- Rigid- tvrd
- Tuned mass damper- amortizer
- To swap in the opposite direction- ljuljati u suprotnom smjeru
- Scale model- probni model
- Center span- središnji luk
- Susceptible to the influence of wind- podložan utjecaju vjetra
- Load acting transversely to the axis- opterećenje koje djeluje poprečno na os
- Bending strenght- otpornost na savijanje
- Column diameter promjer stupa
- Reinforced concrete- armirani (pojačani) beton
- Three-dimensional post an lintel network/grid- trodimenzionalna rešetka
- Topple under wind- srušiti se pod utjecajem vjetra
- To impose (horizontal) forces- djelovati horizontalnim silama
- Lateral stability – bočna stabilnost