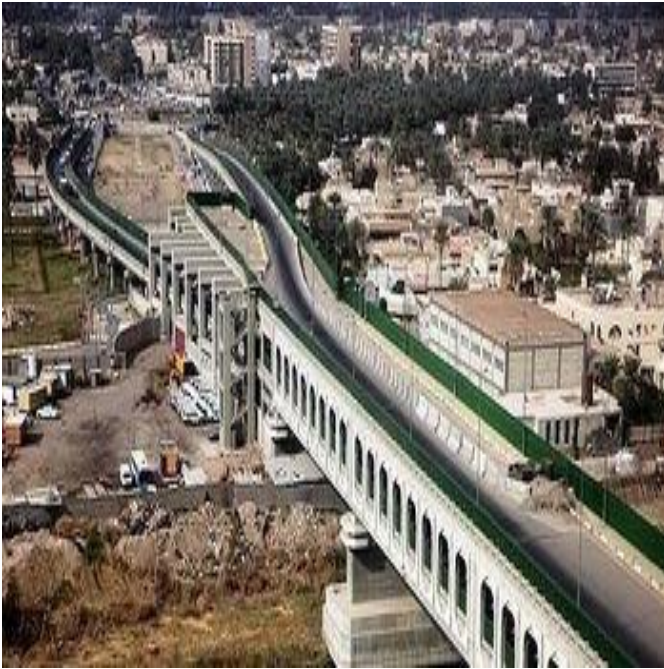


What is Bridge?

The bridge is a way of continuity to link roads across a physical obstacle such as waterways, gaps, barriers and railroads. As well as the interchanging to diminish the congestion delay at busy traffic intersections instead of using optical signals.

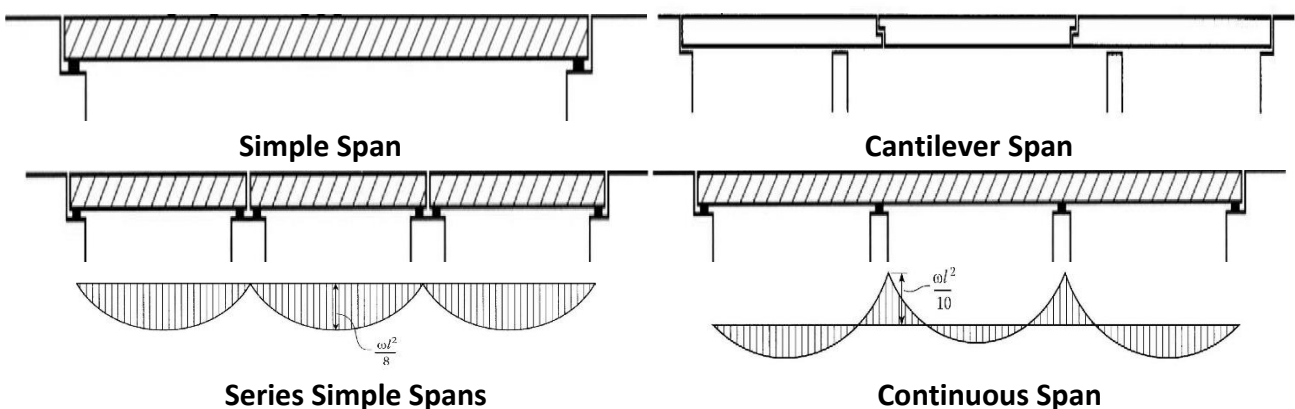


Known Iraqi Bridges

Types of Bridges

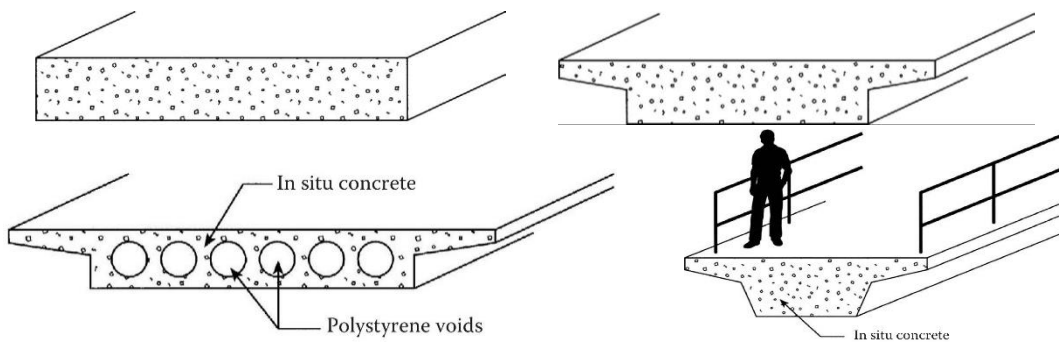
Bridges can be classified according to its own properties into:

- Purpose of construction (road, railway, pedestrian, pipelines...)
- Materials of construction (wood, stone, brick, reinforced concrete, steel)
- Chance of use (temporarily, permanent, military)
- Length of span (short [6 - 15] m, medium [16 - 50] m, long [51 - 150] m, extra-long [> 150] m)
- Method of supporting (simple, cantilever, continuous)
- Structural design of superstructure (slab, beam, arch, truss, cable-stayed, suspension)





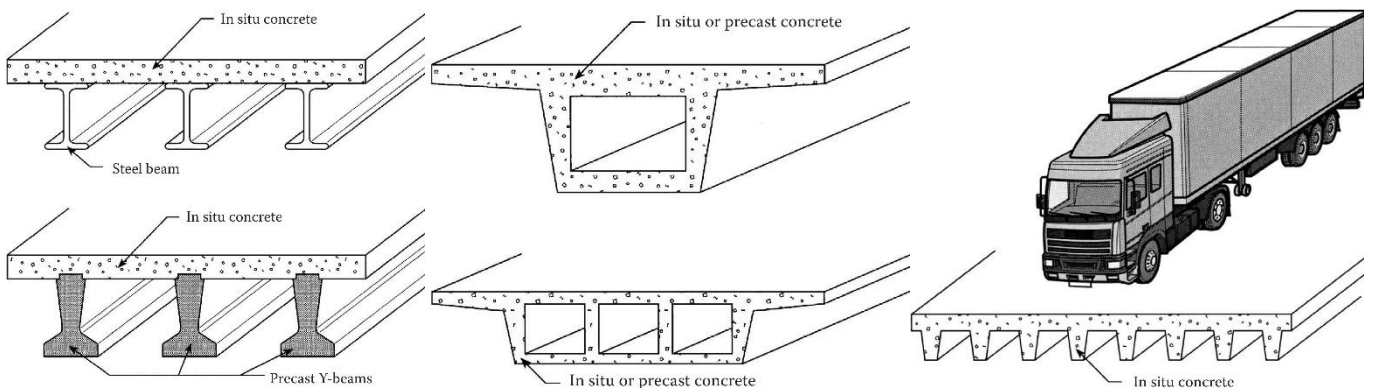
(Elevation)



(Section)
 Slab Bridge



(Elevation)



(Section)
 Beam Bridge



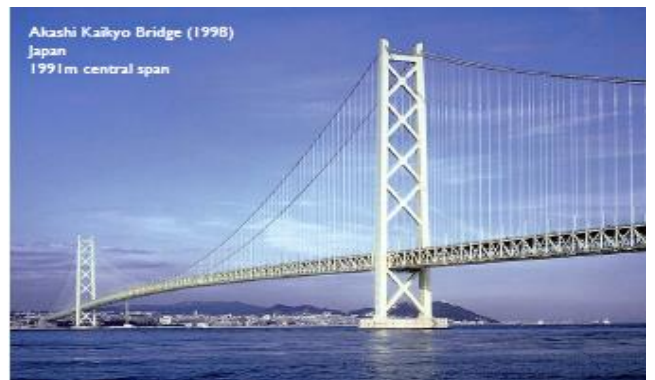
Arch Bridge



Truss Bridge



Cable Stayed Bridge



Suspension Bridge

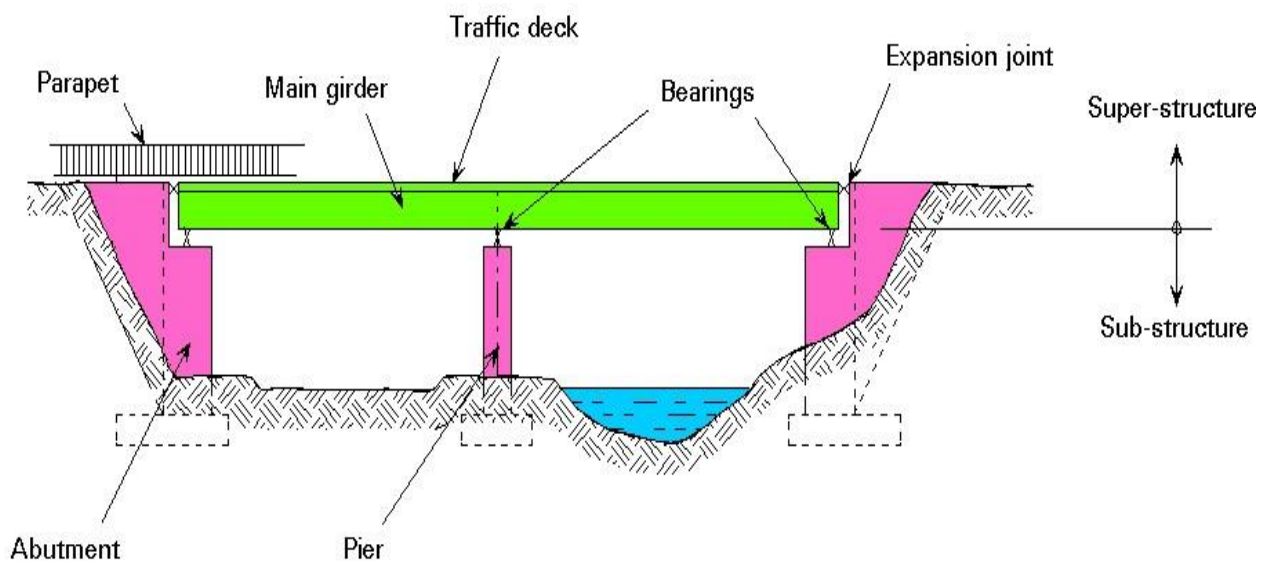
Typical Span Length for Various Types of Bridges

Type of Bridge	Material of Construction	Range of Span (m)
Slab	Concrete	6 - 12
Beam	Concrete	12 - 300
	Steel	30 - 300
Arch	Concrete	90 - 420
	Steel	240 - 550
Truss	Steel	90 - 550
Cable Stayed	Steel	90 - 1100
Suspension	Steel	300 - 2000

Components of Beam Bridges

Especially, for beam bridge type, the following components can be appeared:

- **Superstructure:** the upper visible part of the bridge and contains the roadway (carriageway) to transfer the moving loads above the obstacle. It consists of:
 - Slab (Deck)
 - Main Beams (Girders)
 - Transverse Beams (Diaphragms).
- **Substructure:** supporting system to transfer the external loads as well the own weight of the superstructure into the soil. It consists of:
 - Abutments
 - Columns (Piers)
 - Foundation (Piles, Spread Footings).
- **Bearings:** it is a damping system at contact areas between superstructure and substructure.
- **Expansion Joints:** it is a controlling system to eliminate thermal strains effects from the deck.



Typical Components of Beam Bridges