



## Curved Bridges

Curved bridges are visually far more effective than those using straight girders. As laminated beams are easily made with a curve they lend themselves to this type of bridge. All curved bridges are often incorrectly called *arched bridges* by the public and often by engineers. An arched bridge is one where the loads are transmitted into the ground horizontally as in the bridge pictured to the right. In reality the forces are so great in an arched bridge that it is unusual to find a site that is suited to their use. The three pin arch mentioned in our guide is not likely to have much application. True arched bridges will normally need massive concrete abutments that make their use very costly. Generally what will be sold is a simply supported girder that happens to be curved.



In our guide we refer to the maximum rise for a bridge being 1 in 8. That does not mean that if the bridge is 8.0 metres long the rise in the centre is 1.0m. The measurement is taken from a tangent at the beginning of the bridge where the rise is steeper. The image shows how this rise is not equal over the length. The introduction of stairs into a public structure like this would now be unthinkable, as everything in Australia has to be designed

around the needs of access by the disabled.

The *Building Code of Australia* refers to a rise of only 1 in 14. When applied radially, this would result in a very small rise in the centre and would be of minimal aesthetic value. The bridge on the right has a radial rise of 1 in 8. While larger curves can easily be accommodated they should not be considered unless the client has been informed of the possible public backlash and there is a written request for a bridge with a rise that is greater than that permitted by standards.



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