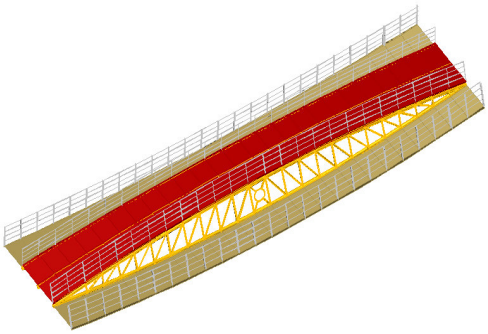
Garyllis River Footbridge –
Harmonising Engineering and Architectural Features

An elegant low cost Pedestrian and Bicycle Bridge has been designed for the crossing of Garyllis River in Kato Polemidia. The design has been developed through the interaction of architects and civil engineers in such a way that functional, aesthetical and engineering requirements are met from the inception stage.



3-D Computer image of Garyllis River Footbridge

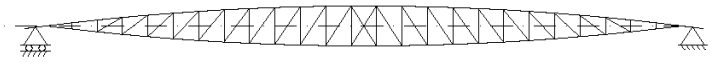
Photograph During Construction

The main concept of the design is the creation of a pleasant and secure crossing for both pedestrians and cyclists, revealing the fundamental principles of structural engineering.

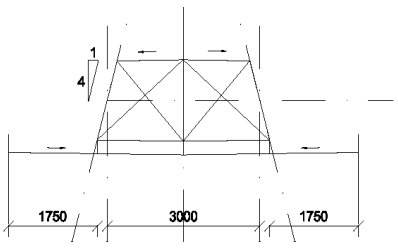
Three identical trusses provide the basic span crossing. The top and bottom geometrical shape of each truss is parabolic, that of the bending moment diagram of a simply supported beam.

The slabs spanning the beams connecting the joints on the curved top members of the trusses form the pedestrian crossing whilst the beams extending as cantilevers on either side of the curved bottom members of the trusses provide the support of the two cycle paths. Pedestrians walk gently upwards when entering the bridge, whilst cyclists move downwards.

The two end trusses are inclined down-outwards (1:4) in the transverse direction, forming in plan a gently curved cycle path and a narrowing and then widening central foot path.



Truss Shape – Bending Moment Diagram



Cross Section – Cantilevers: Cycle Lanes

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