

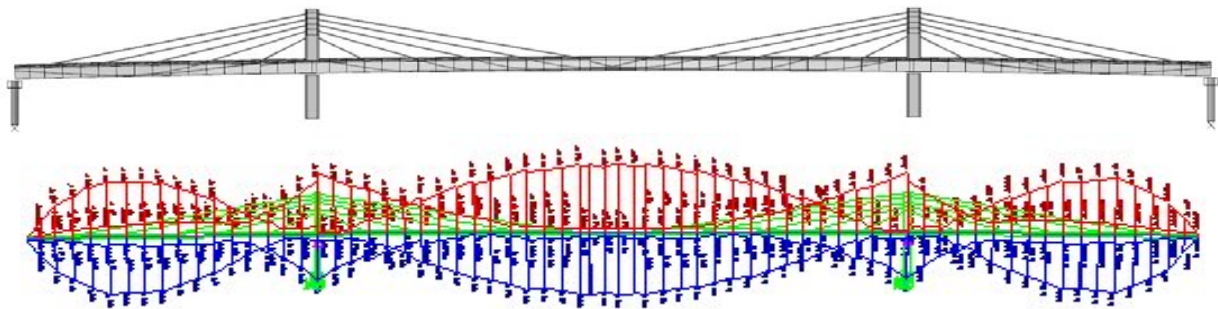
Smuuli Bridge

Location	Estonia
Client	Merko, 3Bau
Date	12/2005 – 02/2006
Services	Structural analysis, pre-stressing design, optimisation of cable-stressing sequence, design checks according to Eurocode.

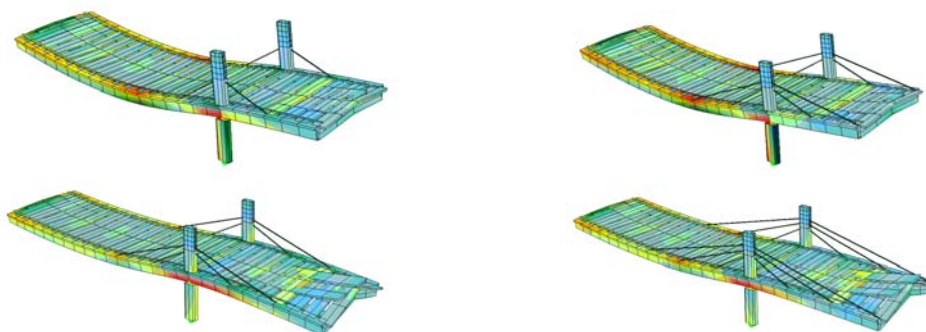


Description

This bridge is a three-span extradosed bridge (42+85+42m) made from post-tensioned concrete. Upon completion the Smuuli Bridge will be the first cable-stayed bridge in Estonia. The approach viaduct consists of three spans on each side which are constructed from pre-cast beams with a cast in-situ deck. Each pier is supported by pile foundations. The bridge crosses an active railway line calling for cantilevering as the construction method of choice. The approach viaducts were constructed first and counterbalance the two free cantilevers of the extradosed section of the bridge. The optimisation of the cable-stressing sequence was one of the more interesting issues during this work since the cross-section of the main girder is rather slender. Modelling tasks for this bridge also included the longitudinal and transversal PT, time-dependent effects and a detailed definition of the construction sequence.



System view, moments due to traffic loading, associated stresses top and bottom.



Construction stage simulation

