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VÄSTER PEDESTRIAN AND CYCLE BRIDGE: CONNECTING THE TOWN CENTRE WITH A NEW DEVELOPED AREA

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This pedestrian and cycle bridge spans the river in Eskilstuna connecting the historic, industrial area of Munktelstaden with the town centre, forming part of a rehabilitation of the area. The bridge was completed in 2016 on behalf of the City of Eskilstuna and has become an essential link between the centre of the town and the upcoming Munktelstaden-area while increasing the aesthetical value of the neighborhood.

The final design was chosen from three alternatives presented by the design team to the municipality; the Landmark, the Industrial and the Transparent. All three options proposed were steel, and all designs had to provide a 4.5m free deck width, maintain an unobstructed navigation channel of 5.0m wide by 3.35m high and a maximum slope of 5%. The Landmark proposal was an asymmetric cable stayed bridge with an A-shaped, inclined steel pylon. The Industrial proposal was a variable height optimized truss, where the trusses were inclined outwards.

The design finally chosen by the client was the Transparent. This bridge has two supports within the river that allows for a very slender deck. There is a central, low arch spanning 32m and an overall length of 65m. The arches are formed from two inclined box sections which are slightly curved on plan towards the supports. The railing is made up of a series of thin, steel plates connected via a stainless-steel handrail. The overall effect of transparency thus allows for a largely unobstructed view along the river. Due to the slender deck section a detailed dynamic analysis was carried out to check for possible pedestrian-induced vibrations.

Due to its slender, harmonic and logical design, both in terms of architecture and engineering, the bridge has become a modern, but humble, addition to the river and the town, and an effective link.



Fig. 1. Väster pedestrian and cycle bridge