



Harpe – the first extradosed bridge in Norway

Data and facts

Company	Joint Venture Harpe Bru ANS: PORR Norge Infrastructure and JV Partner - Implenia Construction GmbH
Type	Bridge construction
Runtime	03.2014 - 12.2016
Principal	AF Gruppen for Statens Vegvesen Region Øst

[Project report online](#)

Harpe – the first extradosed bridge in Norway

A balanced cantilever method was used to construct the load-bearing structures. The so-called cantilever forming travellers were used simultaneously on two piers. This allowed for speedy construction of the load-bearing structure. The first concreting was performed in August 2015 and completed in February 2016.

28 segments and locking sections, the so-called keystones were to be constructed out of two bridge piers. An additional technical challenge, when compared with the traditional balanced cantilever method, was the installation of external pre-stressing cables on 24 segments and complicated geometry of the load-bearing structure, that requires well-conceived solutions in promoting equipment.

Basic structures data:

1. Harpe bru – the main bridge structure, 330m long, designed as the so-called “extradosed” bridge. The main bridge span length of 100m. Pylon height of 16,0m. Setting: direct/indirect on core and bored foundation piles Ø711
2. Solhaug bru – Three-span 26+28+26m reinforced concrete bridge with pre-compressed reinforced concrete 1.20m thick slabs. Setting directly on a rock.
3. Vinstersletta bru – five-span 23+25+30+25+23 reinforced concrete bridge with pre-compressed reinforced concrete 1.20m thick slab. Direct setting.

Quantity:

Reinforcement to 2700

Ordinary concrete m³ 9850

Lean concrete m³ 3355

Pre-stressing mMN 41300

Railings m 2184

Impressions



Image notes

1 Harpe Bridge

2 Harpe Bridge

The Harpe bru structure is the first extradosed type bridge in Norway. This bridge combines elements of a beam and a cable-stayed bridge. Extradosed bridges are characterised by relatively low pylons and cables inclined towards the slab at a small angle.

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Harpe Bridge

The construction was very demanding and entailed numerous challenges, such as for instance using (uncommon) type of lean concrete to construct load-bearing structures, or complying with restrictive environmental requirements.

5

Harpe Bridge

At the very beginning PNC it came out with an initiative and proposed change of technology in which the structure should be constructed, which aimed at reducing the impact of all these factors on the works to a minimum, and hence to deliver the structure on time.

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Harpe Bridge

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Do you have questions about the project or would you like to learn more? Feel free to contact us for further information.

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