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Temporary Bridge Replacement in Cairngorms National Park

Stock of modular parts allows rapid re-connection of major rural route

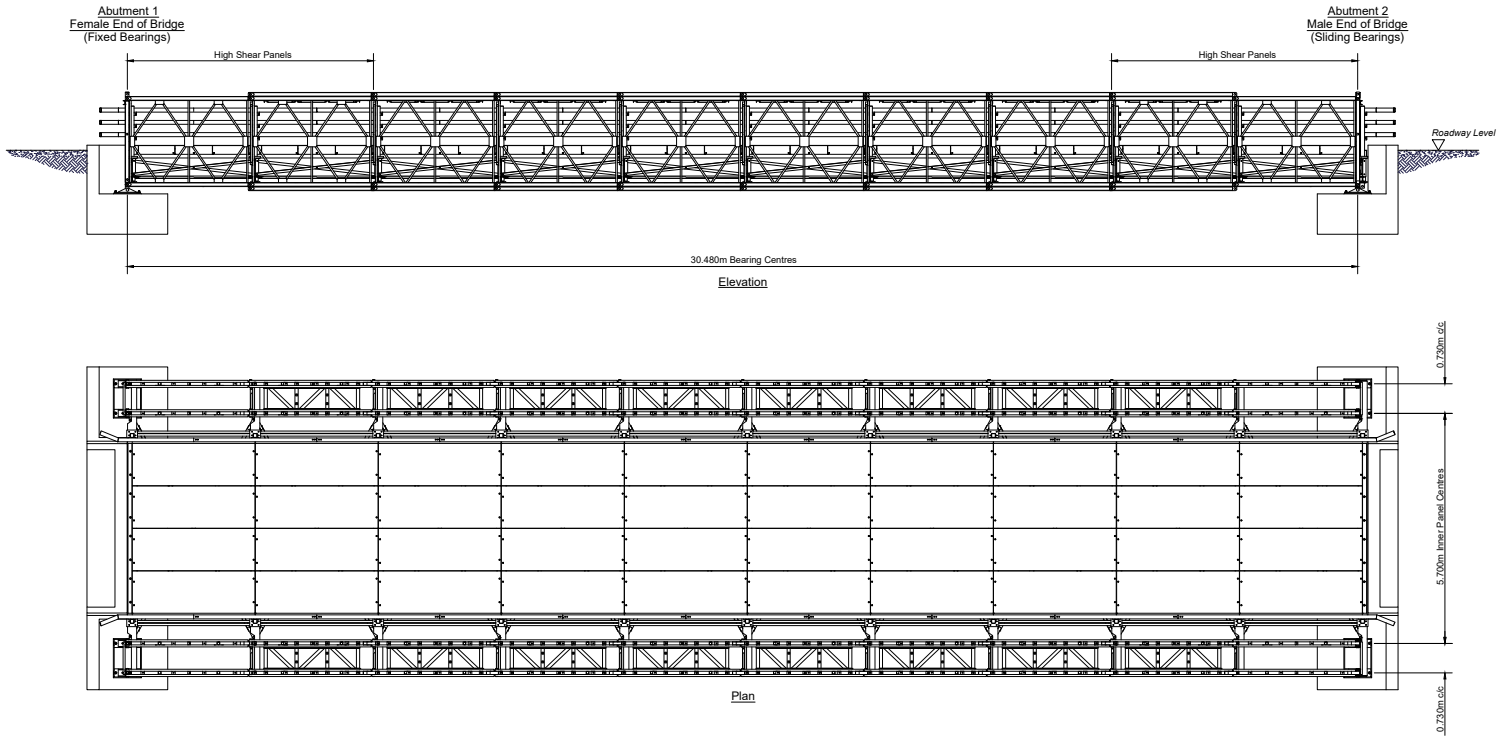
Situated in the heart of Cairngorms National Park, the town of Braemar is a popular destination for walkers and climbers due to its mountainous landscapes and woodland scenery. The River Dee flows through the village and is home to protected salmon and grouse land, which serve the famous Balmoral Estate.

On the A93, the major road which connects Braemar to the North and East of Aberdeenshire, and to Tayside in the South, the condition of an existing concrete bridge resulted in the need for its permanent replacement. However, to keep the route active in the interim, there was a need to install a temporary structure over the river. With the site situated in close proximity to a ski resort, speed of installation was also a priority due to the extreme levels of snowfall in the winter.

Aberdeenshire Council holds stock of Mabey Compact 200® (C200®) bridges, easily configurable for various lengths and applications. Measuring 30.48 metres in length and 4.2 metres in width, the modular C200 was the ideal temporary option during the design and construction of a like-for-like concrete replacement. The installation process had to be as minimally invasive to the protected environmental surroundings as possible, and accommodate the steep landscape. A cantilever launch method was therefore chosen for the project.

The quick erection of a temporary bridge has enabled the route to remain active until traffic switches to its permanent replacement. When the temporary structure is dismantled, Aberdeenshire Council will take the modular bridge parts back into storage, with their existing fleet of C200 bridges, to be reused on further projects as required.

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Specifications

Bridge length:

30.48m

Roadway width:

4.2m

Parapets:

Proprietary P1 parapets

Deck surface:

Anti-skid epoxy aggregate

Bridge erection method:

Full cantilever launch

Design load:

Eurocode Load Model 1

Mabey C200® bridge finish:

- All major components galvanized to BS EN ISO 14713 and BS EN ISO 1461
- All bolts are spun galvanized to BS EN 1461
- All pins are electro-plated in accordance with BS EN ISO 2081

Mabey C200® bridge specification:

(A) Panel components to BS EN 10025 Grade S450J0 and Grade S355J2

(B) Transoms to BS EN 10025 Grade S460M or Grade S355J2

(C) Deck components to BS EN 10025 Grade S355JR and BS EN 10149 Grade S460MC

(D) Ancillaries to BS EN 10025 Grade S275JR minimum

(E) Panel pins to BS970 Grade 709M40 or 708M40

(F) Bolts to BS 3692, BS14399, DIN 912, DIN 267, DIN 931, BS1083, EN8, EN3, EN15 and ISO898

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