

Confederation Bridge Foundations

Client: Government of Canada

Contractor: Straits Crossing Joint Venture Group

1994/96

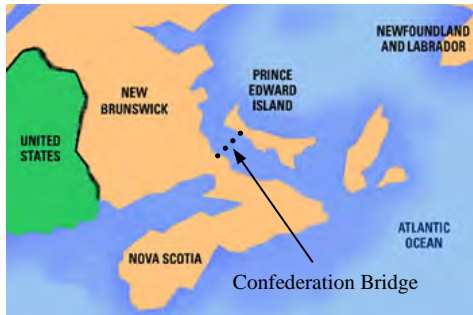


Proserve Ltd.

80 Priory Road,
Kenilworth,
Warwickshire, CV8 1LQ,
England

UK: 01926 512222
Int: 00 44 1926 512222
office@proserveltd.co.uk
www.proserveltd.co.uk

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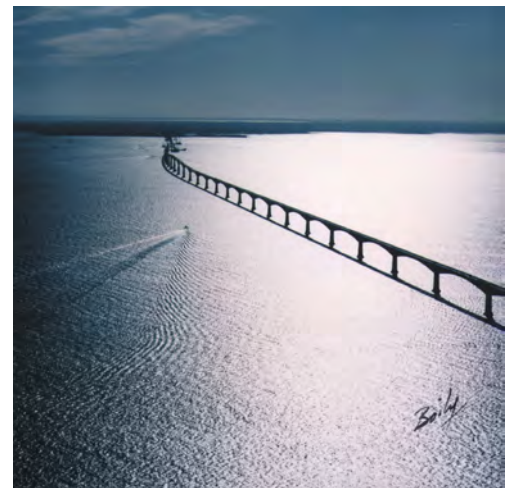
Location Plan

Confederation Bridge is 13km long and links Prince Edward Island to mainland Canada. The bridge was formed from precast elements including 64 pairs of pier bases and shafts plus cantilever and infill beams. All precast elements were lifted into place by floating crane.

Initial 'hard pad' foundations were installed onto a weak mud stone rockhead in water depths up to 33m by an Installation Frame. It carried three precast pads with condensed fabric forms and was levelled by three hydraulic rams. The Installation Frame was fully automated for levelling, grout filling, vent monitoring and removal. Divers were only required to undertake monitoring duties.

The 'hard pads' allowed rapid and accurate placement of the 4,000 ton pier bases by the Svanen floating crane. Sheltered dredge pockets were mass filled with a tremie concrete to form the final foundation.

This large scale, automated and sophisticated construction system was purpose-designed. The foundation system allowed bridge construction to achieve a peak advancement rate of 250m per 4 days.



Aerial View of Confederation Bridge



**Pad Showing Fixed Fabric Form
Ready for Positioning**



Test Rig Showing a Filled Unit



Hard Pad Installation Frame