

## **Flannery bridge: the contribution of early prestressing to international collaboration in structural engineering**

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Upon completion in 1954, Flannery bridge's 180' span was proclaimed the longest for a prestressed bridge in Britain or Ireland. Its design resulted from collaboration between Nicholas O'Dwyer, Consulting Engineers, Dublin, and the British Reinforcement Company (BRC) of Stafford. It replaced a bridge built in the 1880s over a tidal estuary in Connemara, one of several along that indented coastline whose construction was organised by the local parish priest, Fr. Flannery, with, reportedly, direct support from the Chief Secretary for Ireland, Arthur Balfour. The selection of the shallow prestressed portal frame for the 1954 bridge arose literally by accident; tragedy had been narrowly averted during construction of the preferred – cheaper - three-span option, when the coffer-dam constructed for a river pier burst during a tidal surge during the workmen's tea break.

The resulting - elegantly proportioned - structure gave witness to the rapid proliferation of knowledge relating to prestressing in the period of rebuilding, amidst economic austerity and material shortage, following WWII. The first of Eugène Freyssinet's acclaimed bridges over the Marne – the 180' span at Luzancy - had been completed only shortly before, in 1946. The impetus for international collaboration in structural engineering had seen the inauguration in 1952 of the Fédération Internationale de la Précontrainte (FIP) in Cambridge, and the establishment in 1953 of the Comité Européen du Béton (CEB) in Paris. The appointment in 1954 of Philip Gooding, Director-General of the C&CA, as Secretary General of FIP cemented British engagement with these developments.

The paper will explore the genesis of the 1954 Flannery bridge in its European context, and draw on interviews with several of the *dramatis personae* involved in its ideation, design and construction.