

## RIVER GARDENS, BELPER

Main Client:

Engineers: **Tony Gee and Partners**

Contractor: **Ivor King (C.E.C.) Ltd**

### Requirements

The old 190m wooden riverbank retaining wall was to be replaced with a sheet pile wall with a life expectancy of 120 years. The original solution called for 7.5m long cantilevered sheetpiles; however restrictions only allowed for 6m piles which then needed to be tied back. As the design allowed for no permanent surcharge near the wall the horizontal load requirement was 20kN. The ground conditions to a depth of 6m were soft loose silty sand with denser gravels below.



### Solution

Although the required load, plus an adequate F.O.S., would normally have indicated the use of a Duckbill® MR-2 anchor, onsite testing by Anchor Systems (Europe) Ltd showed that the larger MR-1 anchor was more appropriate in the soil conditions.

The final solution was the use of 166 stainless steel MR-1 anchors, driven to 9m at an angle of 40° and using a 12mm stainless steel tie bar with a stainless steel load plate. The load plate was separated from the sheet piles with the use of a nylon separating gasket to prevent bi-metallic corrosion.