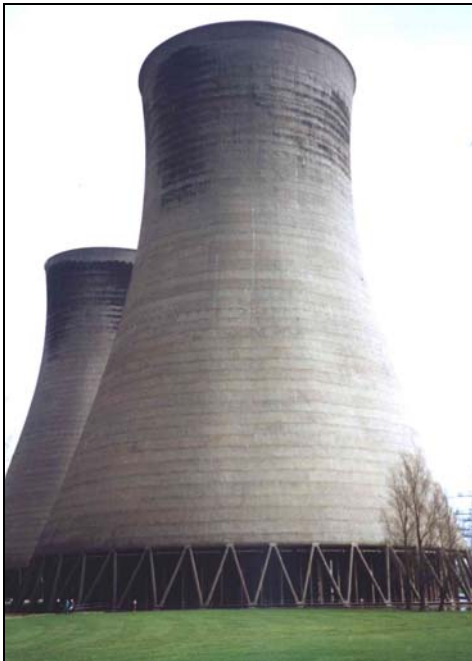


West Burton Power Station, Nottinghamshire



Cooling Towers at West Burton



FRP Composite strengthening was applied inside the tower from cradles

World First in Cooling Tower Strengthening

West Burton Power Station in Nottinghamshire east of Retford, had been monitoring cooling tower C1 which was showing signs of distress due to wind loadings.

The 104m high cooling tower had been strengthened by application of a mantle shell and foundation strengthening in 1975

An innovative solution to the continuing problem of the tower was required and scheme development centred on a reinforced concrete ring beam solution which had successfully been used in South Africa.

To improve the spread of loads in the original shell and mantle it was decided to use Fibre Reinforced Polymer (FRP) composites on the inner face at the levels of the outer ring beams. The aramid system Mbrace® which uses the DuPont Kevlar® material was selected.

Access to the tower was by suspended cradles. The 8 km of FRP strips were bonded to the concrete surface in a wet lay up process and then a polyurethane protection was applied.

Client:	TXU Europe Power
Consulting Engineer:	Babtie Group
Main Contractor:	Bierrum limited
Specialist Contractor:	Balvac
Project Value:	£365,000
Programme:	July – September 2000



Strengthening bands within the cooling tower

An extensive programme of trials, testing and training was to be carried out at ground level prior to work commencing, to ensure that a high quality application process was developed for this world-first application of FRP in a cooling tower strengthening.