



Headframe over Shaft 2, Thorne Colliery

For the National Coal Board, South Yorkshire

The National Coal Board required as part of the reconstruction of this important mine, the construction of two new headframes over Shafts 1 and 2. These were planned to become downcast service shafts with ground mounted drum winders and adjacent winder house.

The erection of the principal elements of Headframe No 2 took place over the period 12/13 October 1980. It was fully commissioned on 23 December 1980.

The overall height requirement was 52m. The surrounding countryside is flat and includes a housing estate at Moorends hence design of the silhouette was important if the construction was not to dominate the locality adversely.

The aesthetic solution was found in the final simplicity of steel box welded plate construction. It was devised for ease of assembly on site but was required to meet a number of operational constraints. These included:

- minimisation of foundation loads near existing mine shafts
- maintenance of emergency access to and egress from the mine
- retention of existing reinforced concrete headframe/heapsteads for a period long enough to keep the shaft operational thus employing the minimum time for overhead erection work.

Investigation and analysis led inexorably to the selection of steel as the preferred material of construction. The tetrapod weighs close to 400 tonnes. The four raked box section legs employ Grade 50C welded steel plate with internal diaphragms and stiffeners, offering low windage and ease of maintenance.

The legs of the tetrapod were shop fabricated in transportable lengths and site assembled with their cross beams to form A Frames. Internal bolting preserves the clear lines of the structure which was finished in silver micaceous iron oxide paint.

Structural Engineers: Husband & Co
Steelwork Contractor: Fairfield-Mabey Ltd

Judges' Comments

An orthodox and wholly functional mining structure imaginatively designed to be attractive, clean in appearance, easy to maintain, economically fit for its purpose and solving difficult site and erection problems.

