

## MANOR HOUSE ROAD

CLIENT:	W. WESTERMAN
SECTOR:	INDUSTRIAL
LOCATION:	NOTTINGHAM
VALUE:	£1m
DATE:	2007



**Our client approached us with their proposal to construct two medium size steel frame industrial units on a brown field site. We were engaged to advise on a suitable economic foundation solution whilst co-ordinating the structural solution overall.**

A flood risk report had been carried out which confirmed the site was c.1.1m below the flood plain. The Environment Agency insisted that the finished floor slab must be above the flood plain in order for planning permission to be granted. Also, the site investigation confirmed filled ground was present to a depth of c.1.8m – 2.4m. The combination of these two factors made traditional foundations uneconomic.

The obvious solution was to adopt piled foundations for the external walls and columns whilst importing engineered backfill under the new slab level. This would require substantial retaining walls at various locations around the site to retain the engineered fill.

However, given that the external walls and frame columns already needed to be piled and in light of the poor ground conditions, we concluded that the entire slab should be piled. While piling the slab, imported material from below would not need to be engineering fill and the requirements for retaining walls would be greatly reduced.

A 225mm thick flat slab was cast insitu spanning between the piles at c.3.5m centres. Initially we designed the slab for an imposed load of 5kN/m<sup>2</sup> plus a further 2.5kN/m<sup>2</sup> for a possible mezzanine in the future. At a later date and whilst the scheme was still on site, we were asked to increase the capacity of the slab to 15kN/m<sup>2</sup> which we were able to do by providing additional reinforcement over the piled positions.

**A value engineering approach to a complex site resulted in significant savings for our client in time and costs.**