A27 D51 Hexthorpe Flatts – The Dell

Site information

Site name: Hexthorpe Flatts – The Dell

Site key: D51

Grid reference: [SE 558 020] (accurate)

Site type: quarry, disused

Local authority: Doncaster Metropolitan Borough Council, South Yorkshire

Site dimensions: 250 m x 150 m

Site owner: DMBC

Conservation status: Regionally Important Geological Site **Date:** 16/9/97

Field surveyor: Scott Engering **Date:** 13/2/07

Stratigraphy and rock types

Time unit: Permian **Rock unit:** Brotherton Formation, Zechstein Group

Rock type: Dolostone **Details:** Thin bedded flaggy cross laminated limestones with occasional thicker ooid-limestones

Time unit: Anglian, Middle Pleistocene **Rock type:** Diamicton, sandy

Rock unit: Till **Details:** Red sandy till with angular limestone fragments and subrounded pebbles

Site map

(Figure 127) — D51 Hexthorpe Flatts – The Dell

Site description

Several sections (maximum 6 m) through the Brotherton Formation (previously Upper Magnesian Limestone) showing typical exposures of very fine grained thinly bedded flaggy limestones (typically less than 100 mm) with fine cross laminations and ripples, indicating deposition in shallow, fast flowing water. Interspersed with occasional thicker beds (up to 200 m), comprising massive medium grained ooidal limestone with a porous cellular texture. There is a distinct contrast between the two lithologies, marked by a sharp boundaries, undulating bedding planes and cut and fill structures.

Above the limestone, although a contact is not seen, there are hummocks of ground where reddened sandy till can be occasionally be seen.

The site is well maintained and only requires regular trimming of Ivy etc from exposed rock faces. Several exposures of limestone visible to the north and east sides of The Dell. The western quarry is not landscaped but the quarry faces are generally clean and vegetation free.

Regular clearance of vegetation from the till required but care must be taken to minimise damage to this friable deposit.

RIGS assessment of site value

Ratings: 1–2 very poor; 3–4 poor; 5–6 acceptable/useful; 7–8 quite good; 9–10 very good/excellent; N/A not applicable; D/K don't know

Access and safety

Aspect/Description/Rating

Road access & parking Layby at main entrance on Greenfield Lane has room for 5/6 cars. Limited on street parking. Rating: 7

Safety of access Excellent. A further point of access is available from a footpath along the River Don but this has not been investigated. Rating: 8

Safety of exposure Quarry faces very safe. Numerous water features must be taken into consideration if used by school groups. Rating: 9

Permission to visit Not applicable N/A

Current condition Very good. Only periodic removal of plant growth from rock faces required. Rating: 9

Current conflicting activities None envisaged

Restricting conditions None envisaged

Nature of exposure Low quarry faces with no loose rock or dangerous overhangs

Multiple exposures / prospect for trail

Notes Good field visit site with Warmsworth Park and Cedar Road Quarry

Culture, heritage & economic

Aspect/Description/Rating

Historic, archaeological & literary associations Good example of landscaped public gardens (opened 1902) in redundant quarry space. ‘Dick Turpin’s cave’. Rating: 8

Aesthetic landscape Excellent. Adds another dimension to the wide range of recreational facilities within the park. Rating: 9

History of earth sciences Not applicable. Rating: 0

Economic geology Example of quarrying (probably for lime) recoreded in local book “From Quarry to Park”. Rating: 7

Notes

Education and science

Surface processes Numerous rockery stones demonstrate surface weathering and solution features. Glacial deposition. Rating: 5

Geomorphology The quarry is adjacent to the River Don and the northern bank shows use of levees on flood plain. Rating: 4

Sedimentary Good range of bedding, ripples, cut and fill structures typical of shallow water environment. Accessible deposit of till. Rating: 7

Fossils Not applicable. Rating: 0

Igneous Not applicable. Rating: 0

Metamorphic Not applicable. Rating: 0

Tectonic: structural Not applicable. Rating: 0

Minerals Not applicable. Rating: 0

Stratigraphy Not applicable. Rating: 8

Notes Potentially excellent educational site for field trips and very near to local schools

Geodiversity value

A good introduction to magnesian limestone in situ and various man made features using. Rating: 7

stone. Landscape/rockery stone for ornamemtal garden features

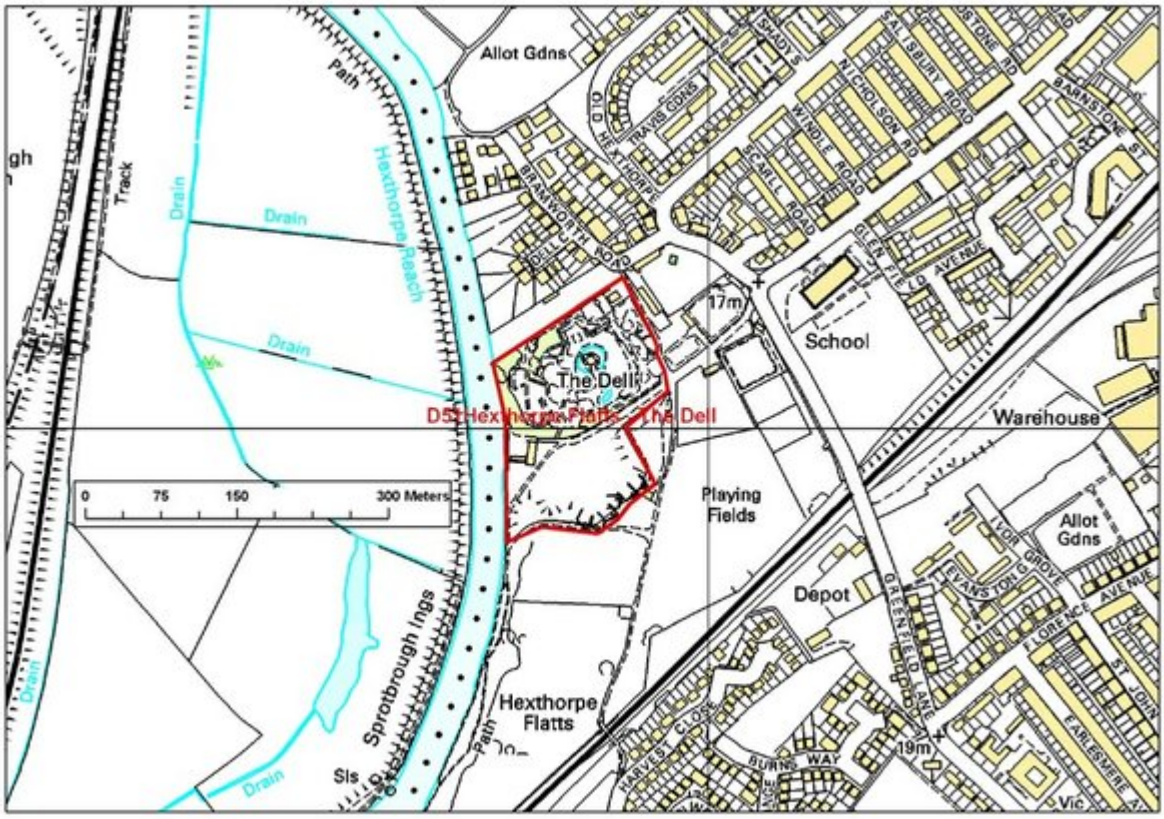
Site photographs D51 Hexthorpe Flatts

(Figure 128) General views looking north of rocky landscaping in The Dell, the water feature and quarry faces in the background. [SE 55900 02100].

(Figure 129) Thin bedded limestones with a thicker ooidal bed, typical of the limestones of the Brotherton Formation. [SE 55930 02050].

(Figure 130) Detail of fine grained flaggy limestones and a bed of massive ooid-limestone within the Brotherton Formation. [SE 55930 02050].

(Figure 131) Exposure of Pleistocene till. [SE 50800 02000].



(Figure 127) D51 Hexthorpe Flatts — The Dell. This map is based upon Ordnance Survey topographic material with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number: 100017897 [2007].

(Figure 128) General views looking north of rocky landscaping in The Dell, the water feature and quarry faces in the background. [SE 55900 02100].

(Figure 129) Thin bedded limestones with a thicker ooidal bed, typical of the limestones of the Brotherton Formation. [SE 55930 02050].

(Figure 130) Detail of fine grained flaggy limestones and a bed of massive ooid-limestone within the Brotherton Formation. [SE 55930 02050].

(Figure 131) Exposure of Pleistocene till. [SE 50800 02000].