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# A12 D13 North Cliff Quarry

## Site information

**Site name:** North Cliff Quarry

**Site key:** D13

**Grid reference:** [SK 507 992] (centred on)

**Site type:** disused quarries, pits and cuttings

**Local authority:** Doncaster Metropolitan Borough Council, South Yorkshire

**Site dimensions:** 80 m x 70 m

**Site owner:** DMBC

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

**Field surveyor:** Scott Engering **Date:** 7/2/07

## Stratigraphy and rock types

**Time unit:** Permian **Rock unit:** Wetherby Member, Cadeby Formation, Zechstein Group

**Rock type:** Dolostones **Details:** Bryozoan reef, associated with massive granular beds, cross-bedded shelly ooid-limestones and flaggy beds

## Site map

(Figure 61) — D13 North Cliff Quarry

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## Site description

Discontinuous sections through the Wetherby Member of the Cadeby Formation in old quarry faces up to 10 m high that illustrate a wide variety of lithologies. The best and most accessible exposure is in the north-east corner (SK 5064899256) and comprises a 5.5 m section through an unbedded pillow like bryozoan reef, overlying a succession of massive, buff coloured fine grained granular limestone and cross bedded shelly ooid-limestones, up to 400 mm thick, with concentrations of small bivalves. The bivalves are preserved as moulds or casts which gives the shelly beds a very open and porous texture that easily distinguish them from granular beds that lie above and beneath them. Crystal lined vughs are common.

From west to east, there is some thinning of the beds which are flaggy, although these are best seen in the generally poorly exposed south-west quarry face. The reef mass also overlies progressively younger beds from west to east and the lower section is partly brecciated, often with a distinct reddening of the fine grained matrix, providing evidence of the influx of muddy sediments similar to those found in the Permian marls.

Outcrops are exposed sporadically in the quarry but access is difficult and there are overhangs and loose blocks.

From the path at the top of the northern quarry faces there are excellent views of the dip and scarp topography of the Coal Measures strata to the west in Rotherham and Barnsley, the limestone escarpment at Cadeby, High Melton and Hickleton to the north and the topography associated with the confluence of the Don and the Dearne.

The quarry presents considerable management problems. Three burnt out cars were in the quarry at the time of the survey but a local dog walker recounted that 28 cars were recently removed by crane. There is rubbish, sections of metal fencing, beer cans etc everywhere and signs of recent fires in several places. The reef exposure is marred by graffiti. Also the quarry appears to be frequented by trail bikes.

## **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** On street parking on North Cliff Road and residential areas off Doncaster Road. Rating: 7

**Safety of access** Path runs along unfenced quarry top. Moderately steep access into quarry down rough, poorly defined paths. Rating: 6

**Safety of exposure** The limestone reef is accessible. Most quarry exposures are not easily accessible and there are overhangs and loose rock. Rating: 5

**Permission to visit** N/A

**Current condition** Requires extensive clearance of cars, general rubbish and clearance of thick scrub to improve access to best exposures.. Rating: 2

**Current conflicting activities** Dumping of cars and rubbish, vandalism, graffiti and use by trail bikes

**Restricting conditions** General condition of the site makes visits by larger parties difficult.

**Nature of exposure** Old quarry faces with discontinuous sections.

**Multiple exposures/ prospect for trail** Good field trip locality in conjunction with Warmsworth Park, Cedar Road Quarry and Hexthorpe Flatts.

**Notes** Access and safety measures could be considerably improved by extensive clearance and better defined paths

### **Culture, heritage & economic**

#### **Aspect/Description/Rating**

**Historic, archaeological & literary associations** A good source of building stone with probable links to the historic architecture of Conisbrough. Rating: 7

**Aesthetic landscape** Excellent views across Rotherham, Barnsley, the Don and Dearne valleys and the limestone escarpment. Rating: 9

**History of earth sciences** Correlation of reefs in district Rating: 6

**Economic geology** Former building stone quarry. Rating: 6

## Notes

### Education and science

**Surface processes** Limited opportunities to observe differential weathering of reef and bedded limestones. Rating: 4

**Geomorphology** Excellent opportunity to observe regional scarp and dip topography and breach of the limestone escarpment by the River Don. Rating: 8

**Sedimentary** Very good example of reef formation and associated sedimentary facies, bedding structures and lithological variation. Rating: 7

**Fossils** Mainly specialist interests. Restricted fauna of bryozoans, bivalves, brachiopods and foraminifera. Not good for collecting. Rating: 6

**Igneous** Not applicable. Rating: 0

**Metamorphic** Not applicable. Rating: 0

**Tectonic: structural** Not applicable. Rating: 0

**Minerals** Not applicable. Rating: 0

**Stratigraphy** Reefs provide opportunity to correlate with other similar exposures in the district. Rating: 5

### Geodiversity value

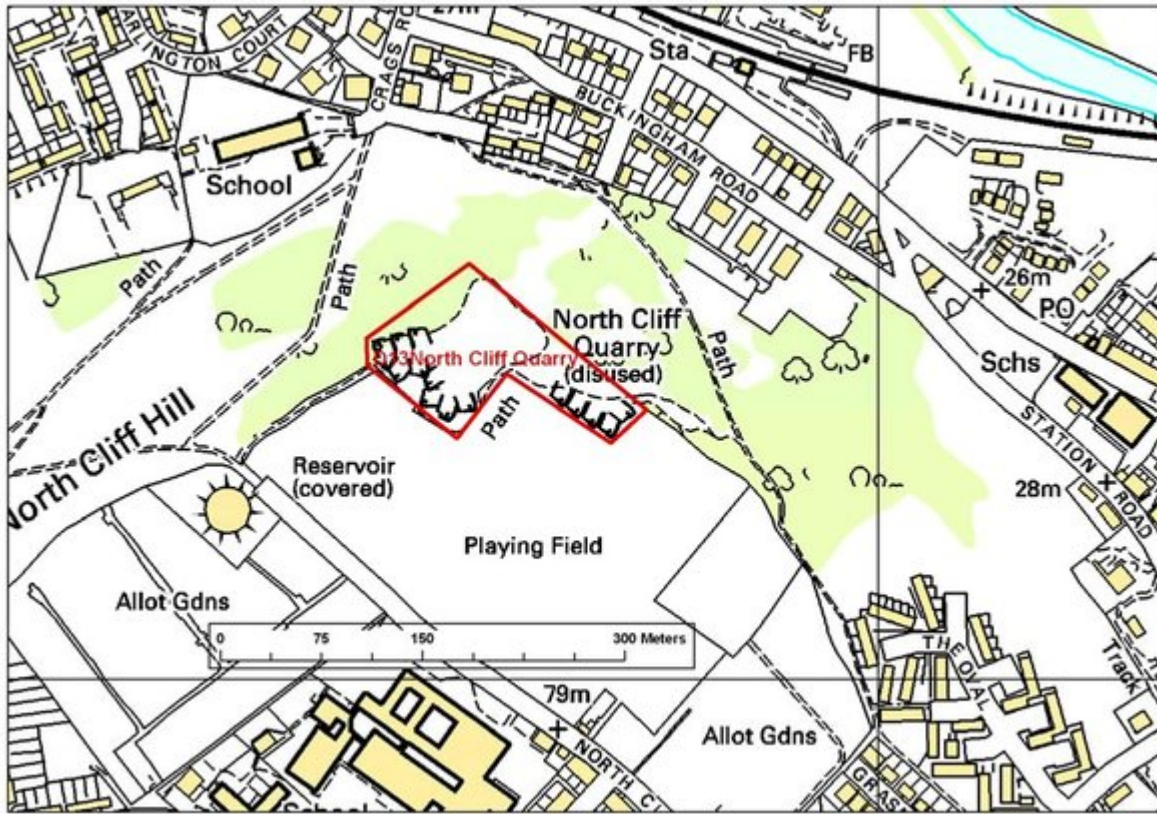
A very good site with variable lithology, excellent landscape value and proximity to several very notable historic buildings. Rating: 9

### Site photographs D13 North Cliff Quarry

(Figure 62) View of Carboniferous scarp and dip topography across the Don Valley to the west. [SK 50500 99180].

(Figure 63) General view across the quarry towards Conisbrough Viaduct to the east. [SK 50620 99250].

(Figure 64) Section through Bryozoan reef overlying well bedded shelly limestones in the Wetherby Member. [SK 50648 99256].



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(Figure 62) View of Carboniferous scarp and dip topography across the Don Valley to the west. [SK 50500 99180].





(Figure 63) General view across the quarry towards Conisbrough Viaduct to the east. [SK 50620 99250].



(Figure 64) Section through Bryozoan reef overlying well bedded shelly limestones in the Wetherby Member. [SK 50648 99256].