Site Name **Sandy, The Pinnacle Recreation Ground**

BEDFORDSHIRE LOCAL GEOLOGICAL SITE DESIGNATION FORM		
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SITE LOCATION, ACCESS, OWNERSHIP, STATUS & SUITABILITY		
(1) **Name of site:** Sandy, The Pinnacle Recreation Ground, Bedfordshire		
(2) **National grid reference:** TL 178 492		
(3) **Unitary authority:** Central Bedfordshire		
(4) **Site access and local amenities** Access to the south end of the site is via the public bridleway off the Sandy to Potton road, immediately opposite the railway station entrance, or there is a public footpath (the Greensand Ridge Walk) leading from houses on the west side of the railway line and entering the site via a footbridge at the north end. At the south end there is room for parking a few cars in the side road at the electricity substation. More parking is found in the housing area to the west and entry via the footbridge over the railway is a better option. There are plenty of facilities in Sandy.		
(5) **Site ownership:** Pym Estate leased to Sandy Town Council.		
(6) **Mineral rights ownership:** N/A		
(7) **Is permission needed to access the site?**	a. No ✓	b. Yes
(8) **Site status:** Active Disused Historical Managed ✓ Restored New Other		
(9) **Suitable for visits by:** a. General public ✓	b. Small parties ✓	c. Large parties ✓
d. Primary school ✓	e. National Curriculum ✓	f. AS/A-Level ✓
g. Adult ✓	h. Undergraduate teaching	i. Research
(10) **Site suitable for frequent visits by parties?**	a. No	b. Yes ✓
(11) **Should collecting and hammering be encouraged at the site?**	a. No ✓	b. Yes

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SITE DESCRIPTION		
(12) **Exposure type:**	a. Inland natural outcrop ✓	b. Road cutting
c. Railway cutting	d. Active quarry/pit	e. Disused quarry/pit
f. Old mine workings	g. Mine dump	h. Active mine
(13) **Dimensions of area of interest:** Approximately 300 x 200 metres of grassland		
(14) **Main interest(s):** a. Structural	b. Geomorphological ✓	c. Mineralogical
d. Palaeontological	e. Petrological	f. Stratigraphical
(15) **Summary description and reason for designation** This site forms an interesting and accessible geomorphological site and fine viewpoint. The bedrock here consists of friable Lower Cretaceous Woburn Sands and it is locally eroded by pedestrians and cyclists. At a larger scale the River Ivel has completely breached the sandstones and formed a broad valley to the west of the hilltop that is floored by the Oxford Clay and mantled with superficial deposits. Further west the low-lying clay vale shows areas of low hills caused by resistant glacial deposits.		
(16) **What threats exist for the site?** None, apart from the localized effects of erosion which may threaten the stability of some footpaths.		
(17) **What additional work is required to enhance the site?** An interpretation board or labeled panorama could be provided for the site, but this might be vandalized.		
(18) **Published/unpublished references to the site and wider area** Allen, J. R. L. 1981. Lower Cretaceous tides revealed by cross-bedding with mud-drapes. *Nature,* **289**, 579-581. Eyers, J. 1991. The influence of tectonics on early Cretaceous sedimentation in Bedfordshire, England. *Journal of the Geological Society of London,* **49**, 405-414. Friend, P. 2008. *Southern Britain.* HarperCollins Publishers. 414 pages. Gao, C. *et al*. 1998. Middle Devensian deposits of the Ivel valley at Sandy, Bedfordshire, England. *Proceedings of the Geologists' Association,* **109**, 127-137. Moorlock, B.S.P. *et al.* 2003. *Geology of the Biggleswade district – a brief explanation of the geological map Sheet 204 Biggleswade (England and Wales).* B&B Press Ltd, Rotherham. Shephard-Thorn, E. R. *et al.* 1986. An outline study of the Lower Greensand of parts of south-east England. *Technical Report of the British Geological Survey,* WF/MN/86/1. *The Lower Greensand – for geologists.* B&LGG information leaflet. www.bedsrigs.org.uk *Ice Age sand and gravel – the basics*. B&LGG information leaflet. www.bedsrigs.org.uk *Lower Greensand – the Pinnacle Recreation Ground.* B&LGG information leaflet. www.bedsrigs.org.uk		

SCIENTIFIC SIGNIFICANCE		
(19) **Does the site exhibit features of local/regional importance?**	a. No ✓	b. Yes
(20) **Is the site already a designated SSSI?**	a. No ✓	b. Yes
(21) **Collector interest:** a. Rare species	b. Common species	c. Local significance
d. Regional significance	e. National significance	
(22) **List of confirmed fossils, minerals, etc:** N/A		

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HISTORICAL/AESTHETIC VALUE		
(23) **Does the site have important historical associations?**	a. No	b. Yes ✓ (There is an Iron Age fort nearby)
(24) **Does the site form a key part of an attractive or evocative landscape?**	a. No	b. Yes ✓

(25) **Full description of site and its significance**

About 450,000 years ago, during a particularly cold climatic phase (Anglian) in the late Quaternary, a thick ice sheet covered most of southern Britain, bringing with it a thick layer of glacial till. As the ice sheet and associated meltwater rivers advanced and retreated over Bedfordshire they would have progressively cut down into the bedrock and formed broad channels that then became infilled with glacial till and glaciofluvial deposits.

Subsequently, when the climate warmed and the ice sheet shrank back to occupy only parts of Wales, northern England and Scotland, torrential streams would have flowed across the area in broad, braided channel complexes that gradually eroded away and redistributed the older glacial deposits. This cycle of fluvial erosion would have been repeated several times in response to changes in climate and base level, each time cutting down into the existing floodplain and creating a series of flat river terraces.

The combined effect of these erosive cycles has been to breach the Woburn Sands at Sandy, creating a steep eastern valley side to the River Ivel. The Woburn Sands re-emerge on the other side of the valley around Old Warden. Low hills in the region of Moggerhanger, Blunham and Tempsford result from relatively resistant patches of glacial till that are preserved on the interfluves of the Ivel and Great Ouse.

The significance of this site lies in its potential to integrate the geomorphological development of the area from Ice Ages times through to the present. Furthermore, there is scope to establish links between the underlying geology (Woburn Sands), soil development (dry, sandy soil) and flora (acid grassland and trees).

RECORDER'S DETAILS	
(26) **Name:** Dr Jill Eyers	(27) **Organisation:** Consultant geologist working on behalf of B&LGG
(28) **Date of designation:** August 2005	

CURRENT SITE CONDITION
(29) Site condition at March 2009 is GOOD; assessed by Martin Whiteley.

NOTES
(30) Form revised and updated by Dr Martin Whiteley, B&LGG Local Geological Site Manager, November 2009. For further details contact Anne Williams: annew36@hotmail.com