DUBLIN CITY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE Other names used for site	Phoenix Park
IGH THEME	IGH7 Quaternary, IGH14 Fluvial and Lacustrine
	Geomorphology, IGH16 Hydrogeology
TOWNLAND(S)	Chapelizod, St. James, Castleknock
NEAREST TOWN/VILLAGE	Dublin
SIX INCH MAP NUMBER	18
ITM CO-ORDINATES	711450E 735735N ('The Phoenix', in centre of park)
1:50,000 O.S. SHEET NUMBER	50 GSI BEDROCK 1:100,000 SHEET NO. 16

Outline Site Description

This site forms an extensive, 707 hectare natural landscape within the confines of the City of Dublin.

Geological System/Age and Primary Rock Type

The park itself is situated on Lower Carboniferous limestone bedrock, which can only be seen in outcrops nowadays at the edge of the Quarry Lake at the north end of the Park. The topography of the park itself is Quaternary in age, having been deposited at the base of a southeastward-moving ice sheet during the last Ice Age.

Main Geological or Geomorphological Interest

The surface form of the Phoenix Park has resulted directly from the last Ice Age and the geological history of the River Liffey, in that the northern portion of the Park shows a cragand-tail landscape form, with much of its central portion being comprised of low, almost indistinguishable glacial flutes. The Knockmaroon Gate area shows some good examples of deglacial sand and gravel hillocks, and the geometry of the deglacial drainage system and its meltwater channels helps explain much of the Parks hydrology.

This geometry also helps explain the position of many of the ponds in the Park (Glen Pond, Fish Pond, the Zoological Gardens Pond and the pond in the Peoples Park), which are all dammed meltwater channels. Other ponds have occurred because historical bedrock outcrops were quarried extensively (the Machine Pond, Quarry Lake), and Citadel Pond seems to be the only depression dug out specifically to form a pond feature.

The terraces along the River Liffey in the Park's southernmost extreme have given rise to shallow, alkaline soils promoting rare plants. The solid geology of the Park is also linked to its architectural history, as local materials were used to build many of the residences and, in particular, it is likely that much of the material in the boundary wall came from the Quarry Lake. Much of the park is underlain by an extensive drainage network several hundred years old, and formed from clay pipes; thus reflecting the low permeability of the glacial till there.

Site Importance – County Geological Site; recommended for Geological NHA

The complexity of the site in terms of its glacial form, as well as the historical manipulation of the deglacial landscape in the damming of the meltwater channels, and the fine terraces at the southern end, mean that the site worthy of a recommendation for Geological NHA status.

Management/promotion issues

The Commissioners of Public Works are responsible for policy, management and funding of the Phoenix Park. An educational signage/leaflet programme could include information on aspects such as the fact that the Quarry Lake and the Machine Pond are disused quarries, and the significance of the Liffey Terrace at the southern extreme of the Park, the glacial flutes near the Papal Cross, the Furry Glen and other meltwater channels, and the overall network of man-modified pond structures within the Park.



The gentle undulations in the area of the Fifteen Acres are subtle glacial flutes, smeared and etched by the base of the ice flowing over the Park area during the last glaciation.



The upper reaches of the Furry Glen, just south of the Ordnance Survey Offices. See the misfit stream in the base of the channel.



The sloping ground of Bishops Wood shows the flank of the meltwater channel clearly. An alluvial flat (floodplain) hosts park benches within the Peoples Garden.



Left: The outwash terrace at the southern extreme of the Park forms part of the bank of the huge Liffey River that would have existed 14,000-15,000 years ago, during deglaciation. Right: The area south of the Quarry Lake being inundated with water, as the sluice gate along the lakes southern shore has just been opened to lower water levels.





The distribution of deglacial meltwater channels within the Phoenix Park.