

APPENDIX A

APPENDIX B

KILKENNY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Archersgrove Quarry		
Other names used for site			
IGH THEME:	IGH 8, 15 (Lower Carboniferous, Economic Geology)		
TOWNLAND(S)	Archersgrove		
NEAREST TOWN	Kilkenny		
SIX INCH MAP NUMBER	19		
NATIONAL GRID REFERENCE	251900 154800 = S 519 548		
1:50,000 O.S. SHEET NUMBER	67	1/2 inch Sheet No.	19

Outline Site Description

An original quarry where the Kilkenny Black Marble was excavated.

Geological System/Age and Primary Rock Type

Lower Carboniferous very dark grey limestone of the Butlersgrove Formation.

Main Geological or Geomorphological Interest

Situated on the outskirts of Kilkenny Town, behind a petrol station, are the remaining faces of a disused quarry showing Lower Carboniferous limestone. The exposed faces display widely spaced horizontal bedding and vertical jointing, which made the limestone ideal for dimension stone quarrying in the past. Some fossils can be observed on the visible rock faces, mainly solitary corals and occasional brachiopods.

Site Importance

This disused quarry is thought to be the first location where the Kilkenny Black Marble was quarried in Ireland. The nearby River Nore was used to transport the large rough-hewn blocks from the quarry by means of floats and/or barges. This site is included as a County Geological Site being of historic and geological significance.

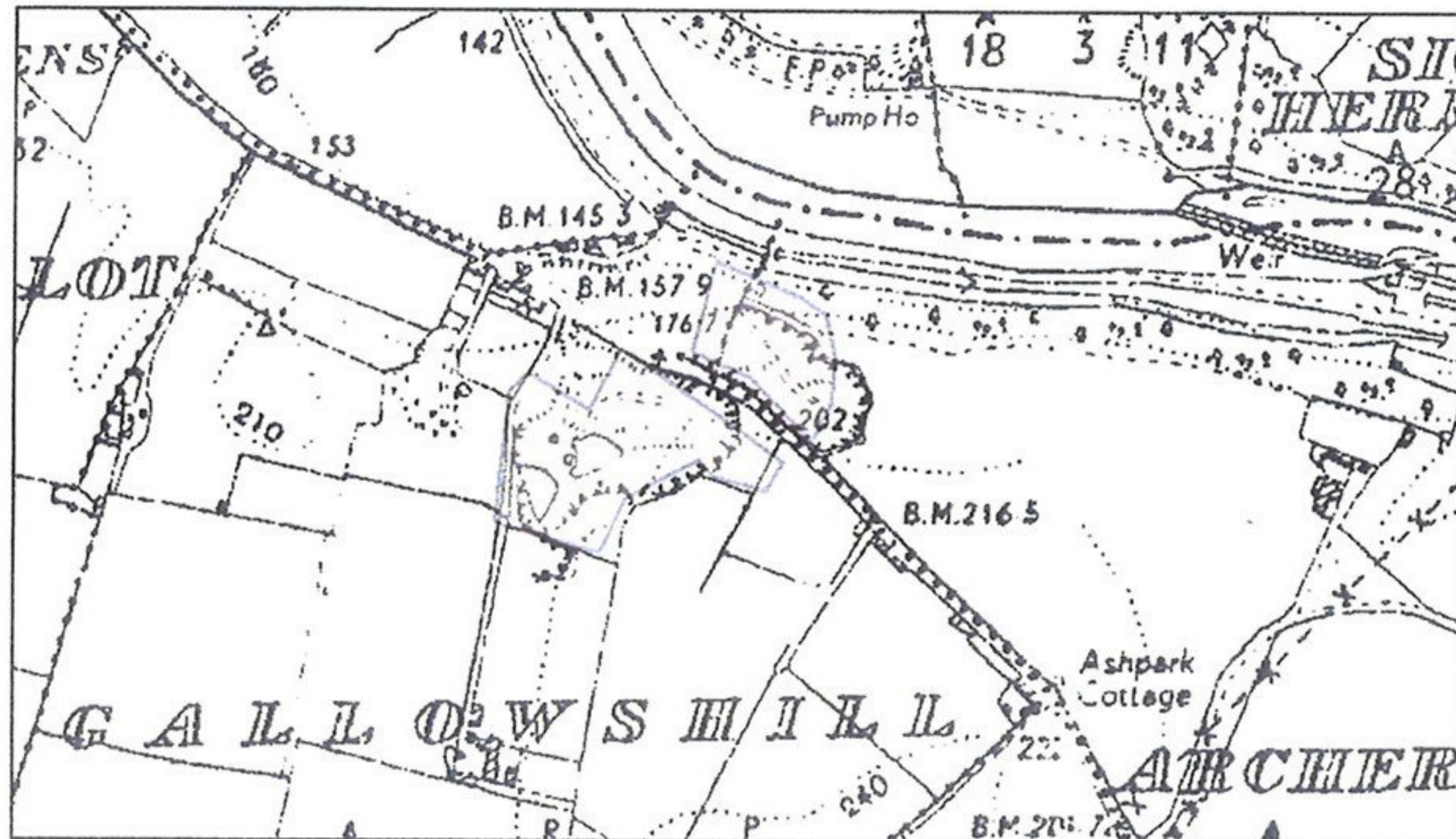
Management/promotion issues

This site can be divided into 2 areas: to the west of the R700 behind a petrol station; and to the east of the R700 in a large depression between the road and the River Nore. The former is easily accessed and can be observed from the road. This part of the quarry has almost completely been backfilled with the exception of a number of exposed faces, all overgrown with vegetation, and localised littering in some areas. A small amount of maintenance would dramatically change the aesthetic nature of this site. The second half of the site is accessed through a locked gate along the River Nore walkway. It displays an easily observed large vertical quarry face. This is potentially a hazardous area due to rock fall and the presence of old quarry machinery strewn over the site. These two areas are on private property and are unsuitable for general promotion without appropriate arrangements agreed with the landowner(s).



Left: Heavily overgrown section of quarry face observed by the roadside (west side of R700)
Right: Abandoned quarry machinery and vegetation occupy the quarry floor (east side of R700)

Archersgrove Quarry



**Kilkenny City and Environs
Development Plan 2008-2014**

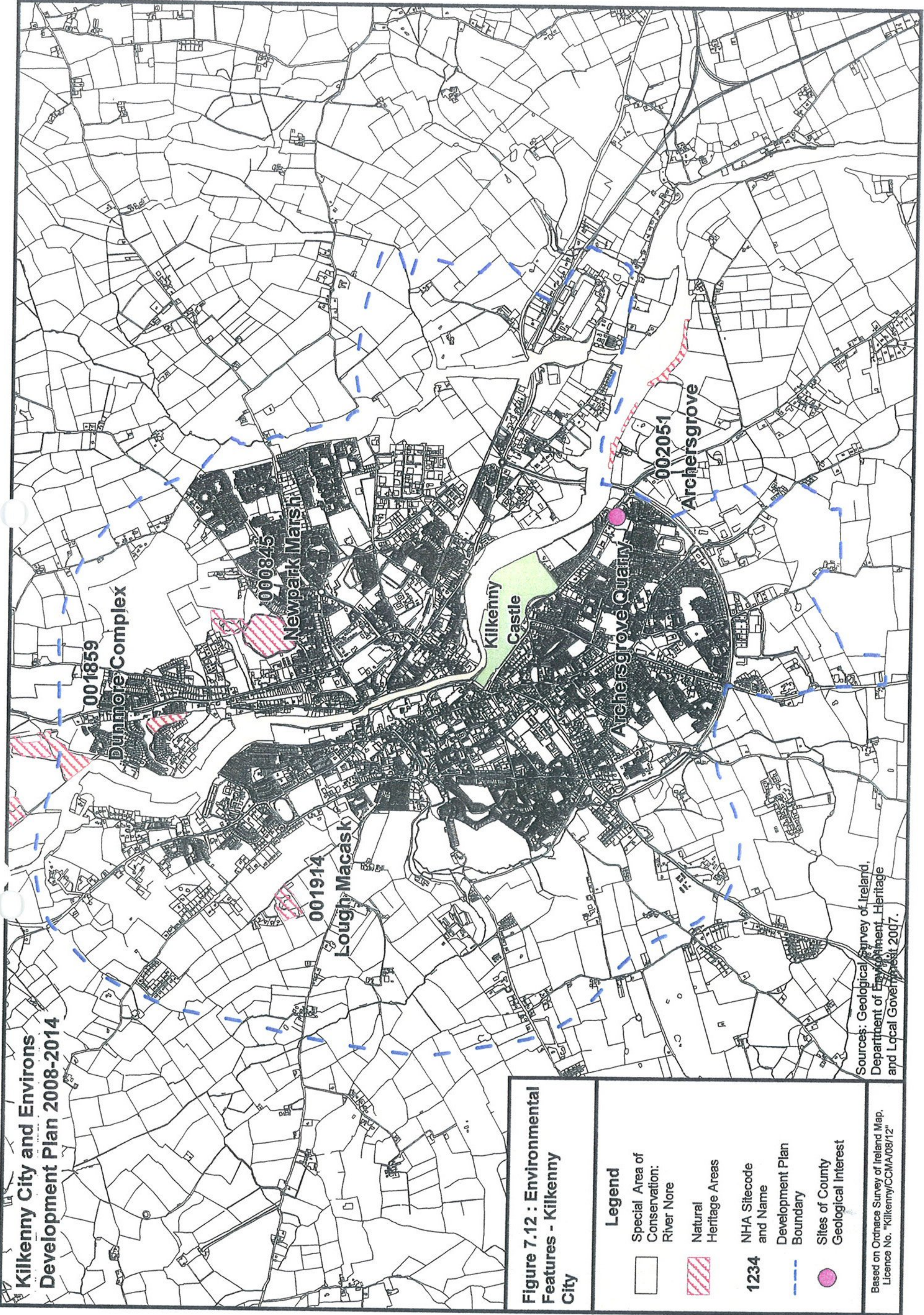






Figure 7.12 : Environmental Features - Kilkenny City

Legend	
	Special Area of Conservation: River Nore
	Natural Heritage Areas
1234	NHA Sitecode and Name
	Development Plan Boundary
	Sites of County Geological Interest

Based on Ordnance Survey of Ireland Map, Licence No. "Kilkenny/CCMA/08/12"

Sources: Geological Survey of Ireland, Department of Environment, Heritage and Local Government 2007.



APPENDIX C



Pat Halley

From: Sarah Gatley [Sarah.Gatley@gsi.ie]
Sent: 19 August 2013 18:58
To: phalley@pathalley-architects.com
Subject: Re: Archersgrove Quarry, Bennettsbridge Road, Kilkenny
Re: Archersgrove Quarry, Bennettsbridge Road, Kilkenny

Dear Mr Halley,

Thank you for your email of 18th July 2013, referring to the proposed re-zoning submission by your client for the above site. As you rightly mention, in previous correspondence that I had with Brian Connor in 2009, the GSI stated that it would welcome any proposed work on the site that would expose the original quarry walls, thereby preserving and promoting the geological heritage interest of this disused quarry.

The site is included on the GSI's database of geological heritage sites for its Carboniferous stratigraphy and economic geology significance, and may be recommended to National Parks & Wildlife Service for designation as a geological NHA. It has been documented in the geological heritage audit of sites in Kilkenny in 2007, as an objective of their Heritage Plan (report attached). This disused quarry shows exposed faces of Lower Carboniferous limestone with widely spaced horizontal bedding and vertical jointing, which made it ideal for dimension stone quarrying in the past. Some fossils can be observed on the visible rock faces, mainly solitary corals and occasional brachiopods. The quarry is thought to be the first location in Ireland where Kilkenny Black Marble was quarried. The nearby River Nore was used to transport the large rough-hewn blocks from the quarry by means of floats and/or barges.

For your information, the Geological Survey of Ireland (GSI) is in partnership with NPWS (the National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht), to identify and select important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). This is addressed by the IGH Programme (Irish Geological Heritage & Planning) of GSI, under 16 different geological themes, under which the minimum number of scientifically significant sites that best represent the theme are rigorously selected (by a panel of theme experts).

County Geological Sites (CGS), as adopted under the National Heritage Plan, include numerous other sites that may still be of national importance but which were not selected as the very best examples for NHA designation. All geological heritage sites identified by GSI are categorised as CGS pending any further NHA designation by NPWS. CGS are now routinely being included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system.

We note that the proposed rezoning plans include provision for a pedestrian walkway around the quarry face in conjunction with a green corridor. The exposure of the quarry face and public access would present an ideal opportunity to provide an information panel at the site (and maybe a small polished area of the quarry face to demonstrate the quality of the Kilkenny Black dimension stone) to explain its geological and historical mining importance. The GSI could advise on the content of any such panel. There may also be an opportunity to link up the site with any existing nearby tourist trail, such as along the River Nore, to place it fully in its geological and historical context. I am sure that the Heritage Officer, Dearbhala Ledge, could further advise on this.

Whatever type of proposed development, there would be no foreseen impact on the integrity of the quarry walls, which it is assumed will have been assessed and secured regarding their stability of slope. It is also assumed that the proposed pedestrian pathway will be of a sufficient width and distance to allow reasonable viewing of the quarry faces, and to enable access by bona fide geologists to examine the faces (dependant on obtaining any necessary permissions).

The GSI looks forward to working with you and your client, and welcomes this as an opportunity to demonstrate that geological heritage can co-exist with development. If you need any additional information, please do not hesitate to contact me.

Kind regards
Sarah

Dr Sarah Gatley
Senior Geologist, Head Geological Heritage & Planning Programme
Geological Survey of Ireland
Beggars Bush
Haddington Road
Dublin 4
Tel(Dir) +353-1/01 6782837

20/08/2013

APPENDIX D

Proposed re-zoning of part of Archersgrove Quarry
in Gallows Hill, Kilkenny

Ecology

Report prepared for Patrick Halley & Associates

August 2013

1. INTRODUCTION

This report seeks to describe and evaluate the ecology of the western portion of Archersgrove Quarry, known locally as the Black Quarry, in the context of a possible re-zoning of the site.

The necessity for management of such a site is also discussed as well as the likely outcomes of future decisions.

The site description is based on fieldwork in July/August 2013 but the site has been known in a cursory way for many years.

2. DESCRIPTION OF AREA

The Black Quarry is excavated in limestone and was the first source of the black, fossil-rich 'marble' produced in Kilkenny. It has been filled in over the years, most recently with the building of the Melville Heights estate in the 1980/90's. At this time substantial amounts of fill were pushed over the south-eastern rim and spread on the quarry floor. This material became vegetated gradually with grasses and other herbs. It was bare of trees and bushes until about 2000 but these have developed markedly in the last 10 years, resulting in a section of woodland in the south-western corner and scrub over much of the eastern side. Tree seedlings now occur throughout and are only kept in check by winter grazing (by horses).

2.1 Vegetation

The primary cover on the surface of the fill is limestone grassland which develops from initial colonisation by cinquefoil *Potentilla reptans*, white clover *Trifolium repens* and glaucous sedge *Carex flacca*. Where the earthmoving machinery gave rise to the most compaction, rushes *Juncus inflexus* and *J. articulatus* form a noticeable component (i.e. east of the service station) though there are now seedling ash and a few Turkey oaks throughout this area.

As soil development begins under the influence of vegetation many additional plants appear, both grasses and broad-leaved species. The grasses include quaking grass *Briza media*, sweet vernal grass *Anthoxanthum odoratum*, bent grasses *Agrostis capillaris* and *A. stolonifera*, meadowgrass *Poa pratensis*, *P. trivialis* and false oat *Arrhenatherum elatius*. There is also some scutch *Elytrigia repens* where topsoil or other nutrient-rich material has been dumped. The herbs consist of

Lotus corniculatus
Trifolium pratense
Potentilla anserina

birdsfoot trefoil
red clover
silverweed

<i>Taraxacum agg</i>	dandelion
<i>Lathyrus pratensis</i>	meadow vetchling
<i>Odontites vernus</i>	red bartsia
<i>Centaurea nigra</i>	knapweed
<i>Anacamptis pyramidalis</i>	pyramidal orchid
<i>Vicia cracca</i>	tufted vetch
<i>Equisetum arvense</i>	field horsetail
<i>Hypericum tetrapterum</i>	square-stemmed St John's wort
<i>Leontodon hispidus</i>	rough hawkbit
<i>Epilobium parviflorum</i>	hoary willowherb
<i>Galium verum</i>	lady's bedstraw
<i>Dactylorhiza fuchsii</i>	spotted orchid
<i>Crepis biennis</i>	rough hawksbeard

The richest vegetation occurs on the slope of material below Melville Heights where these species are joined by

<i>Linum catharticum</i>	fairy flax
<i>Tussilago farfara</i>	coltsfoot
<i>Ononis repens</i>	rest harrow
<i>Origanum vulgare</i>	marjoram
<i>Listera ovata</i>	twayblade
<i>Daucus carota</i>	wild carrot
<i>Hypochaeris radicata</i>	catsear
<i>Prunella vulgaris</i>	self-heal
<i>Hypericum maculatum</i>	hedge St John's wort
<i>Hypericum perforatum</i>	perforate St John's wort
<i>Knautia arvensis</i>	field scabious

As mentioned above the colonisation of the quarry by woody plants is proceeding rapidly. Some of the species come from gardens and are obviously spreading from Melville Heights, e.g. the three Cotoneasters, *C.cf hylmoei*, *C.horizontalis* and *C.'microphyllus'* which form an open scrub on the slope below the houses, and butterfly bush *Buddleja davidii* and firethorn *Pyracantha coccinea* which are more widely dispersed. The native grey willow *Salix cinerea*, ash *Fraxinus excelsior*, alder *Alnus glutinosa*, silver birch *Betula pendula* and crab apple *Malus domestica* grow primarily on the quarry floor.

Willows are at their most dense at the south-western end and here produce a species-poor habitat (because of shade) containing only hedge woundwort *Stachys sylvatica*, nettle *Urtica dioica*, herb robert *Geranium robertianum*, cow parsley *Anthriscus sylvestris* and rough-stalked meadowgrass *Poa trivialis*. Where there are still clearings between the trees they encourage a tall growth of grasses and herbs, probably not grazed. Fleabane *Pulicaria dysenterica* grows in this damper situation.

Scrub occurs in places on the south-eastern side with brambles *Rubus fruticosus* and rosebay *Chamerion angustifolium* forming most of it.

2.2 Fauna

The insect fauna is characteristic of flower-rich grassland with three bumble bee species as well as colonies of the yellow ant. The typical butterflies are meadow brown, speckled wood and small white butterflies. No common blues were seen – a species that is often present in such a habitat.

2.3 Evaluation

The Black Quarry and roadside banks to the east are recognised as an area of species-rich grassland containing orchids (e.g. Smith et al 2010) and are included as ‘green infrastructure’ in that report. They support the characteristic community of unmanaged limestone land in Kilkenny which is found on eskers and other glacial deposits, as well as on valley sides, railway and roadside banks and around quarries. In the local context there is such terrain in the Nore valley (e.g. Bleach Road), on the railway cuttings close to town and in the quarries at Gallowshill, Baun (Glendine) and on the adjoining Ring Road, Springhill (Woodie’s) and Dunmore.

Within the site the area of most interest is the slope of material along the south-eastern edge and the quarry floor amongst the younger trees. The open area with rushes has less inherent value, as does the closed woodland cover at the back.

3. MANAGEMENT

3.1 Ecology

The Black Quarry well illustrates the fact that grassland is an unstable habitat. It survives only because it is mown or grazed, preventing the growth of woody plants. There is no doubt that the site will lose much of its current interest if it does not get management soon. The advance of tree growth in the last 5-10 years is very noticeable and would cover the entire site given another 10 years. The presence of a horse during the winter months has been insufficient to prevent this successional process completely though it has slowed it in places. It is the reason for the minute size of tree seedlings on parts of the quarry floor.

3.2 Future scenarios

- The most likely scenario is the ‘do-nothing’ option. This will mean that the quarry will be completely covered by tree growth in 10 years time and that the flower-rich grassland will have disappeared except along the paths on the south-eastern slope. [This will also happen to the road banks outside where tree seedlings are beginning to make themselves obvious].
- The site could be grazed in winter by 3-4 horses for one or several years which would remove small woody plants and brambles and de-bark many of the larger

trees, resulting in their death. This would set back the plant succession to the grassland phase but would require fencing and an amenable owner. A lighter level of winter grazing would be continued thereafter.

- The site could be acquired (voluntarily) and put into public ownership. The habitat could then be managed by a public or voluntary body. In the current economic climate this would seem unlikely to happen in the next few years and would also require an on-going budget for management.
- Part, or the whole site could be re-zoned and conditions put on a planning consent for management of the area. The optimum type of development would involve the whole site and allow for paths and information signs on the geology and flora, creating a link with Melville Heights and Marble Crest to the south. The footprint of a physical development should be similar in size to the Service Station and also aligned along the road. The excavation of the cliff face to show more of the rock beds would be of some geological interest but the actual Kilkenny marble is too deep to make exposing it a realistic option. It is currently being quarried at Gowran (Butlersgrove).

4. CONCLUSION

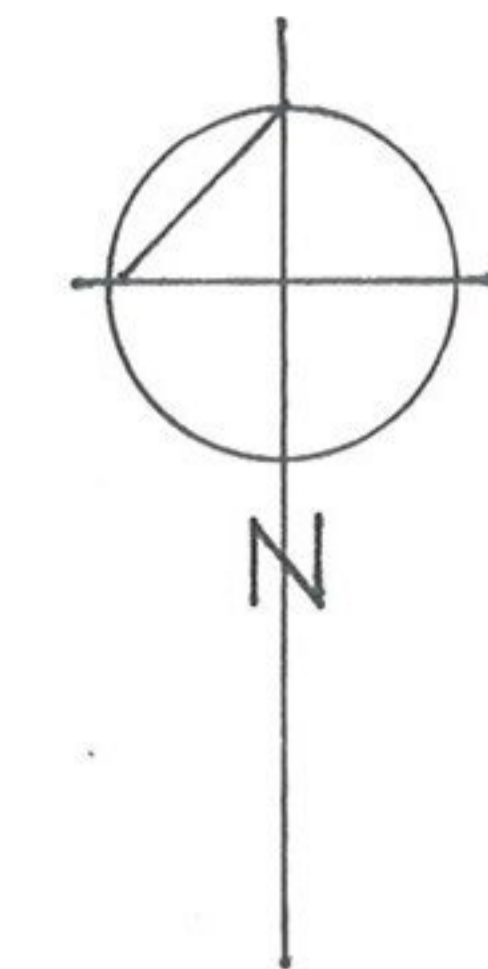
Management of the habitat is essential in order to retain the ecological interest of the Black Quarry.

The only realistic option in the current situation seems to be to allow a comprehensive development of the site with a relatively small footprint so as not to compromise the heritage value.

Reference

Smith, G.F., Delaney, E., O'Hora, K. & O'Donoghue, P. 2010. *Habitat survey and mapping of Kilkenny City: Habitat Survey report*. Prepared for the Councils of the City and County of Kilkenny. Atkins, Dublin.

APPENDIX E



ALLOT 77 LV
BENNETTSBRIDGE
ROAD

FILLING
STATION
ZONED GENERAL BUSINESS

ACCESS POINT

BENNETTSBRIDGE
ROAD

PROPOSED AREA FOR REZONING

POSSIBLE
PEDESTRIAN
ACCESS ROUTES

PROPOSED
GREEN CORRIDOR

EXPOSE QUARRY
FACE FOR
FULL EXTENT
OF QUARRY

SITE BOUNDARY
IN RED

MARBLECREST
ESTATE

MELVILLE ESTATE

p h a

architects

Patrick Halley & Associates

Burchall House, Parnell Street, Waterford.

Tel - 051-879911 - 051-870185 Fax - 051-871672