

## CONTENTS

INTRODUCTION .....	1
RECEIVING ENVIRONMENT .....	1
Baseline Study .....	1
Site Context and Surrounding Land Use.....	1
Demography.....	3
Economic Activity and Employment.....	4
Social, Tourist and Community Aspects .....	6
Sensitive Receptors.....	6
IMPACT OF PROPOSED DEVELOPMENT.....	6
Residential Amenity.....	8
Economic Activity .....	9
Labour Market and Employment.....	9
Social, Tourist and Community Aspects .....	9
Interaction with other Environmental Receptors.....	10
MITIGATION MEASURES .....	10

## TABLES

Table 3-1	Recent Population Trends
Table 3-2	Population Targets for Local Authorities in the Greater Dublin Area
Table 3-3	Employment by Industry

## FIGURES

Figure 3-1	Surrounding Land Use
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## INTRODUCTION

- 3.1 This chapter of the Environmental Impact Statement (EIS) addresses the effect on the existing human environment of an inert waste recovery facility at Calary Quarry, Killough Upper, Kilmacanogue, Co. Wicklow. The proposed recovery facility will provide for the restoration of the existing quarry void by backfilling to former ground level using imported soil and stone and re-establishing a heathland / grassland habitat, similar to that which originally existed prior to quarrying. The EIS is to be submitted in support of planning and waste licence applications by Roadstone Ltd. for the proposed recovery facility.
- 3.2 Planning permission was previously granted for a number elements of on-site infrastructure associated with past rock extraction activities, including a site office / canteen, staff welfare facilities (changing room), office / toilets, stores, ESB substation, fuel storage area, settlement tanks, wheelwash, effluent disposal system and site entrance (Wicklow County Council Planning Ref. 06/6189 and An Bord Pleanála Ref. PL.27.224400). Site infrastructure will be re-used, modified and/or upgraded as part of the proposed development
- 3.3 In undertaking this study, regard has been had to the requirements of the EPA publication '*Guidelines on the Information to be Contained in Environmental Impact Statements*' and includes, but is not limited to, consideration of the established economic activities, existing amenities and sensitive receptors in the vicinity of the application site.

## RECEIVING ENVIRONMENT

### Baseline Study

- 3.4 The site lies in the townland of Killough Upper, in the electoral division of Powerscourt and within the administrative area of Wicklow County Council.
- 3.5 The baseline study of Killough Upper in relation to human beings comprised a review of:
- the census information (2006 and 2011) for the townland of Killough Upper, the relevant Small Area, Powerscourt Electoral District (ED), Wicklow and the Mid East Region;
  - predicted population growth for the Greater Dublin Area;
  - the Live Register.
- 3.6 A plan showing surrounding land use and the location of existing dwellings and commercial properties in the vicinity of the application site is provided in Figure 3-1, based on a review of Ordnance Survey maps and aerial photography and an inspection of the area from the local road network.

### Site Context and Surrounding Land Use

- 3.7 The application site is located in the townland of Killough Upper. The site is located approximately 2.3km south-west of the village of Kilmacanogue, 4.4km south of the village of Enniskerry, 6.5km south-west of Bray town centre and 6.5km north-west of Greystone town centre. The site is currently accessed via the R755 Regional Road which links Kilmacanogue to Roundwood. The R755 intersects with the N11 National Primary Road at Kilmacanogue to the north-east and passes through Wicklow Mountains National Park to the south.
- 3.8 The area surrounding the application site area is rural in character and there are relatively few residential dwellings in the immediate vicinity. There are

## HUMAN BEINGS 3

three dwellings located to the south of the site, identified as Kilmac Farm, Bellevue Cottage and Sugar Loaf Farm. There are a further six dwellings and a commercial property (garage) located along a minor road running c. 200m to the west of the R755. There are approximately 25 No. dwellings to the north of the site along the R755 before its junction with the R760 Regional Road to Enniskerry at Rocky Valley. In total, there are an estimated 10 No. dwellings with 500m of the application site boundary, as shown on Figure 3.1.

3.9 A review of planning and land use designations published on the website<sup>1</sup> [www.myplan.ie](http://www.myplan.ie) by the Department of Environment, Community and Local Government website indicates that:

- Much of the Great Sugarloaf to the east of the application site is a proposed Natural Heritage Area. This proposed designation does not, however, extend to the application site;
- The nearest Special Protection Area is the Wicklow Mountains National Park to the west.
- The nearest entry in the National Inventory of Architectural Heritage is a post box on R775, to the north of the application site.
- The nearest sites scheduled for protection by the National Monuments Service comprise a cairn on the northern spur of the Great Sugar Loaf and a cairn on the northern slopes of the Great Sugar Loaf;
- There is no potential for flooding to arise at the site. The nearest areas at risk of flooding are a watercourse along the N11 to the east and a watercourse to the west of the application site and the R755.

3.10 The current Wicklow County Development Plan (CDP) 2010-2016 indicates that

- The application site is located in a proposed Natural Heritage Area (Schedule 17.2 and Map 17.02);
- The Great Sugar Loaf is a site of geological and geomorphological interest due to the presence of scree slopes (Schedule 17.7, Map 17.07);
- Consideration will be given to applying a Special Amenity Area Order (SAAO) to the Great Sugarloaf (Map 17.08).
- The application site is located in a designated Area of Outstanding Natural Beauty (Map 17.09);
- There are a number of views of special amenity value or special interest in the site vicinity, specifically those numbered 7, 8, 9 and 35 (on Map 17.10);
- There are a number of prospects of special amenity value or special interest in the site vicinity, specifically those numbered 4, 5, 9,10 and 11 (on Map 17.11);
- The groundwater in the area is indicated to be 'extremely vulnerable' (on Map 17.12).

A proposed draft Special Amenity Area Order for the Great Sugar Loaf was rejected by local councillors in Wicklow County Council in September 2011.

3.11 The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 indicates that the site is located in the City hinterland, at the edge of the Dublin Metropolitan area. Due to the proximity of the site to the N11 National Primary

<sup>1</sup> As of 08/10/2015

Road corridor, it is readily accessible from the Metropolitan Area and other large settlements in the Greater Dublin Area.

## Demography

- 3.12 According to Census 2011, the townland of Killough Upper has a population of 32 people. The application site and the landholding are within Small Area No. 257062003 / 257062004, which had a population of 275; the Electoral Division (ED) of Powerscourt, which had a population of 785 people; and the Local Electoral Area (LEA) of Bray, which had a population of 35,841<sup>2</sup>.
- 3.13 This area surrounding the application site is predominantly rural in character and the demographic trends show a lower rate of population growth than that recorded elsewhere in Wicklow and across the State as a whole. Details of past and predicted demographic trends are provided in Tables 3-1 and 3-2 below:

**Table 3-1  
Recent Population Trends**

Area	2006	2011	Change 2006 - 2011	% Change 2006 - 2011
Killough Upper	-	32	-	-
Small Area of 257062003/257062004	-	275	-	-
Powerscourt ED	773	785	12	1.5%
Bray LEA	35,426	35,841	415	1%
Wicklow County	126,194	136,640	10,446	8.3%
State	4,239,848	4,588,252	348,404	8.2%

**Source:** Census of Population 2006 & 2011, C.S.O.

**Table 3-2  
Population Targets for Local Authorities in the Greater Dublin Area**

Area	2006 Census	2016	2022*	% Change 2006 - 2022
Dublin City	506,211	563,513	606,110	19.7%
Dun Laoghaire Rathdown	194,038	222,800	240,338	23.9%
Fingal	239,992	287,547	309,285	28.9%

<sup>2</sup> <http://census.cso.ie/sapmap/>

Area	2006 Census	2016	2022*	% Change 2006 - 2022
South Dublin	246,935	287,341	308,467	24.9%
Kildare	186,335	234,422	252,640	35.5%
Meath	162,831	195,898	210,260	29.1%
Wicklow	126,194	164,280	176,800	40.1%

\***Source:** Regional Planning Guidelines for the Greater Dublin Area 2010 - 2022

3.14 Current published population targets estimate that the population of Wicklow will rise to approximately 176,800 by 2022. Were it to materialise, this would equate to a 40.1% increase on the population level recorded in 2006 and a 29% increase on the population level recorded in 2011. It is anticipated that much of this population growth would take place in strategic urban centres within the County, in accordance with the strategy and policies set out in the Regional Planning Guidelines. Consequently, assuming reasonable adherence to published plans and policies, it is anticipated that future population growth in the vicinity of the application site will remain relatively low.

## Economic Activity and Employment

3.15 A breakdown of the industries and sectors in which those at work are employed is provided in Table 3-3 below. The data presented indicates that employment trends are broadly similar at a local, county and national level. The data for Powerscourt ED reflects, however, the rural nature of the area; higher proportions of the population are engaged in agricultural, forestry and fishing and building and construction, and a lower proportion are engaged in manufacturing than at a county, regional or national level.

3.16 Data provided in Census 2011, indicates that 19.3% of the population of Wicklow and 19% of the population of the State was unemployed at the time of the Census. This is likely to have fallen in line with national trends in recent years.

3.17 There were 32,772 persons in the Mid-East Region on the Live Register<sup>3</sup> in September 2015. This is less than the 36,315 persons recorded in September 2014, the 40,108 persons recorded in September 2013, and the 40,940 persons recorded in December 2012. By contrast, there were 11,991 persons unemployed in the region in September 2006. The figures from September 2015 are 273% of the equivalent figures from September 2006.

<sup>3</sup> <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=LRM04&PLanguage=0>

# HUMAN BEINGS 3

**Table 3-3  
Employment by Industry**

	Powerscourt ED		Wicklow		Mid East Region <sup>4</sup>		State	
Agriculture, forestry, fishing	20	6%	1,174	3.7%	8,929	4.2%	91,526	1.9%
Building and construction	28	8.5%	911	2.9%	12,058	5.6%	92,371	5.1%
Manufacturing	22	6.7%	4,334	13.9%	25,059	11.8%	209,903	11.6%
Commerce and trade	84	26%	8,928	28.7%	57,355	26.9%	456,289	25.2%
Transport and communication	24	7.3%	1,489	4.7%	18,332	8.6%	146,520	8.1%
Public administration	15	4.5%	1,505	4.8%	14,525	6.8%	113,860	6.3%
Professional services	75	23%	7,375	23.6%	47,086	22%	425,389	23.5%
Other	49	15%	4,875	15.6%	29,492	13.8%	276,432	15.3%
<b>Total</b>	<b>327</b>		<b>31,131</b>		<b>212,836</b>		<b>1,807,360</b>	

**Source:** Census of Population 2011, C.S.O.

- 3.18 The [www.myplan.ie](http://www.myplan.ie) website indicates that there are two commercial properties / enterprises and three farm buildings / enterprises in the vicinity of the application site. One of the mapped commercial enterprises (the former quarry) is located at Calary Quarry itself.
- 3.19 The wider rural area around the application site generally supports agricultural enterprises or small rural based enterprises, interspersed with occasional isolated residential properties or small residential clusters, principally along the local road network.
- 3.20 The nearest concentration of commercial / retail buildings is in Kilmacanogue village and in the southern environs of Bray. It would appear that there are few employment opportunities or centres located in the immediate environs of the application site and that most employment opportunities are provided at the nearby settlements of Kilmacanogue, Bray and Enniskerry.
- 3.21 The commercial / retail businesses located in Kilmacanogue village include two petrol retail stations, a business park, a restaurant, a small shop, a post office and a pub.

<sup>4</sup> Excludes County Dublin

## Social, Tourist and Community Aspects

- 3.22 As previously noted, Killough Upper and the area around the application site is predominantly rural in character. There are no schools, shops or other facilities or services located within the townland.
- 3.23 The nearest school to the proposed waste recovery facility is the junior / primary school located in Kilmacanogue village (St. Mochanog's National School). Other social infrastructure in the village includes the local church and graveyard, Kilmacanogue GAA club (at Pairc Fitzsimon) and soccer club. A wider range of educational, retail and recreational facilities are provided further afield in Bray, approximately 7.5km to 8km away by road.
- 3.24 There are a number of tourist attractions in the area surrounding the application site, principal amongst them being Powerscourt House and Gardens, Powerscourt Waterfall and the village of Enniskerry. The application site is located some considerable distance (>4km) from most of these attractions and is well screened from them by intervening topography, vegetation and/or development.
- 3.25 The Great Sugar Loaf is an isolated conical shaped hill of erosion resistant metamorphic rock (quartzite) which extends up to 501m above sea level and is located immediately east and upslope of the application site. Given its distinctive conical shape, its isolation from other hills and its steep slopes, it forms a locally prominent landscape feature and is of some local historical and cultural significance. The established walking paths around the Great Sugar Loaf and the Wicklow Way are notable public amenities in the local area.

## Sensitive Receptors

- 3.26 The most critical sensitive receptors in the vicinity of the proposed recovery facility comprise 3 No. private residential properties located immediately to the south of it. These properties are identified as Bellevue Cottage and two residential farms, Kilmac Farm and Sugar Loaf Farm.
- 3.27 A further 7 No residential properties are located west of and downslope of the proposed facility. In total, there are 10 No. properties within 500m of the recovery facility, all of which are identified on Figure 3-1. The former quarry is the only purely commercial enterprise located in the area.
- 3.28 The application site at Killough Upper is located within a designated scenic area identified in the current County Development Plan. For that reason, the surrounding natural landscape is also deemed a sensitive receptor.

## IMPACT OF PROPOSED DEVELOPMENT

- 3.29 The proposed inert soil recovery facility at Calary Quarry, Killough Upper, Kilmacanogue, Co. Wicklow provides for :
- Use of approximately 3,280,000 tonnes of imported inert natural materials, principally excess soil, stones and/or broken rock to restore a large existing quarry void by backfilling to its former ground level;
  - Installation of temporary site infrastructure and services including, site office, staff welfare facilities, weighbridge (with dedicated office), wheelwash, settlement ponds, pumphouse, hardstand areas, fuel and water storage tanks, waste inspection and quarantine facility and storage sheds;

## HUMAN BEINGS 3

- Separation of any construction and demolition waste (principally concrete, metal, timber, PVC pipes and plastic) inadvertently imported to site prior to removal off-site to authorised waste disposal or recovery facilities;
  - Temporary stockpiling of topsoil pending re-use as cover material for final restoration of the site;
  - Restoration of the backfilled void (including placement of cover soils and seeding) and return of the infilled site to its original heathland / grassland habitat;
  - Environmental monitoring of noise, dust, surface water and groundwater for the duration of the site restoration works and for a period thereafter.
- 3.30 Ultimately, all development affects the environment and human beings to some degree. Direct effects arising from this development include effects on water and air quality, noise, and changes to landscape character. Indirect effects include effects on flora and fauna.
- 3.31 It is anticipated that the effects of the proposed waste recovery activities would be less than those generated by, or experienced during, the recent operation of the application site as a quarry, particularly in respect of noise and vibration where impacts will be lower in the absence of quarry related activities, such as drilling, blasting, rock crushing and screening etc. Potential negative impact on human beings and the amenity of the surrounding area arising from the proposed development relate mainly to potential nuisance from noise, dust, traffic, and visual effects. All such impacts would however be temporary in nature, arising for the duration of the recovery operations, but effectively ceasing on completion of the backfilling and restoration works at the quarry.
- 3.32 Moreover, in the longer term, the proposed development would generate benefits for the area by restoring the site to the heathland / grassland habitat which originally existed prior to quarrying and merging into the surrounding landscape.
- 3.33 The proposed recovery activities at the application site have the potential to generate a number of direct and indirect effects on the relevant socio-economic baseline characteristics of the surrounding area. Having regard to the location and nature of the proposed development, it is considered that the potential socio-economic effects are as set out in Table 3-6 below.

**Table 3-1  
Summary of Potential Socio-Economic Effects**

Potential Impacts	Potential Receptors
Local Population	Residential Amenity (visual amenity, noise, air quality)
Economic Activity and Employment	Agriculture, Local Shops and Services
Labour Market and Employment	Local Labour Market
Social, Tourist and Community Aspects	Walkways around Great Sugar Loaf and visitor attractions at Powerscourt House and Gardens, Powerscourt Falls and Enniskerry Village

These potential effects are considered in more detail in the following sections.



## Residential Amenity

### *Dust and Noise Control*

- 3.34 Detailed assessments of the potential effects of the proposed development on air quality and the noise environment are detailed in Chapters 8 and 9 of this EIS. The potential for the proposed development to generate dust and noise impacting local residential property has been assessed in detail by conducting baseline monitoring and then modelling potential impacts using accepted methodologies. A number of mitigation measures are also recommended to ameliorate any potential adverse effects, principally through good housekeeping and the adoption of best operational practices.
- 3.35 Existing perimeter screening berms and the separation distance between dust and noise sources and sensitive receptors both provide significant attenuation of any dust and noise emissions likely to be generated by waste recovery operations. These were demonstrated to be effective when the application site was previously worked as a quarry.
- 3.36 The assessments presented in Chapters 8 and 9 of this EIS indicate that existing and/or proposed mitigation measures to ameliorate potential adverse effects, will minimise potential dust and noise impacts experienced at nearest sensitive receptors and ensure that no significant adverse residual dust and noise impacts arise from the proposed development.
- 3.37 In the unlikely event that residual effects should occur, any such effects would be insignificant, intermittent, temporary and short-term and would cease upon cessation of the proposed recovery activities.

### *Traffic*

- 3.38 The application site is well located in terms of access to the strategic national and regional road networks. All HGV traffic travelling to and from the proposed recovery facility will be routed over roads which are considered suitable (with some minor modification and improvement) to accommodate frequent HGV movements.
- 3.39 All HGV traffic to and from the proposed facility will follow a designated access route between Junction 8 (Kilmacanogue) on the N11 National Primary Road. This route is the same as that used up until recently by HGV traffic which travelled to and from the N11 when the application site operated as a quarry. No HGV traffic will be routed over sub-standard local roads around the proposed facility.
- 3.40 The Traffic Assessment presented in Chapter 13 of the EIS concludes that the proposed development proposals would not have a significant adverse effect on the safety or capacity of the local road network surrounding the application site.
- 3.41 It is considered that the traffic movements generated by the proposed development will not result in any significant adverse residual effects on the residential amenity of properties along the designated access road and, in any event, will not be any greater than those which arose previously when the quarry was fully operational at the peak of the construction boom around 2006 and 2007.

## Economic Activity

- 3.42 The purpose of the proposed development is to restore the existing quarry void and reduce the visual impact of the former quarry workings and to provide additional recovery capacity for inert soil and stone waste generated by construction and development activity in the wider region.
- 3.43 As outlined in Chapter 1 of this EIS (Paras. 1.86 to 1.89), there is a demonstrable need to provide a large, well-managed and regulated inert soil and stone recovery facility in this part of North Wicklow, largely to replace a similar facility operated by the Applicant at Fassaroe, near Bray, which is now almost completely infilled.
- 3.44 The proposed development will provide an authorised, well-managed, sustainable and cost-effective recovery option for Contractors who have to manage and recover inert soil and stone waste. It is likely to be of not just to the local economy in North Wicklow, but also to the wider regional economy within the Dublin and Mid-East Region.
- 3.45 The proposed development also allows the Applicant to re-use and/or modify some pre-existing infrastructure at the former quarry site, thereby reducing market entry costs, potential environmental impacts and consumption of resources which would otherwise arise were the facility to be established at a greenfield location.

## Labour Market and Employment

- 3.46 It is considered that the proposed development of a waste recovery facility at Killough Upper will not result in any significant effects on local employment or the local economy. When operational, the proposed development is likely to provide employment for no more than two employees (on a full-time equivalent (FTE)) basis, depending on the rate of waste intake. It will however also indirectly support existing or new employment for hauliers and service providers working within the construction and development sector.
- 3.47 The operational stage of the proposed development has a limited lifespan and as result, any impacts on employment and economic development would not continue, at least at this particular location, over the longer term.

## Social, Tourist and Community Aspects

- 3.48 The application site is not visible from Kilmacanogue, where much of the existing local social and community infrastructure is located. The separation distance of over 2.5km is quite considerable, sufficient to ensure that any potential noise or air emissions at the recovery facility do not impact adversely on existing social infrastructure in the village.
- 3.49 The proposed development will take place within the existing quarry boundary where the effects of the proposed recovery / restoration activities (whether dust, noise and/or visual) are screened by existing perimeter screening berms, by topography, by intervening distance and/or vegetation (hedgerows).
- 3.50 The proposed recovery facility will have little or no impact on existing amenity enjoyed at many of the social, tourist and community facilities identified in the surrounding local area, largely because it is too distant from them and/or screened from view.

- 3.51 Tourists visiting Powerscourt Gardens enjoy a scenic distant view toward the Great Sugar Loaf, in which the existing quarry is only barely perceptible. An assessment of the likely visual impact of the proposed recovery on visitors to the gardens concluded that it will be slight during the waste recovery activities, reducing to negligible on completion of the works.
- 3.52 At the present time hill walkers, and to a lesser extent road users driving along scenic routes, also enjoy views into and around the Great Sugar Loaf, in which the existing quarry is again only barely perceptible. An assessment of the likely visual impact of the proposed recovery on amenity hillwalkers and road users concluded that it will be slight during the inert soil waste recovery activities, reducing to negligible on completion of the works.
- 3.53 A detailed assessment of the visual impact of the proposed development on surrounding properties, local amenities and designated views and prospects is presented in Chapter 10 of this EIS.
- 3.54 Over the medium to long-term, the restoration of the quarry by backfilling to its former ground level and the re-establishment of a heathland / grassland habitat, similar to that which originally existed prior to quarrying, is likely to have a positive and beneficial effect on the landscape and visual amenity of the local area.
- 3.55 The quarry backfilling works will be temporary and will continue over the medium to long-term future, depending on the level of construction and development activity across the wider region in the years ahead. Over this time, the visual impact will be no worse than that which currently exists or which previously existed when the quarry was fully operational.

### **Interaction with other Environmental Receptors**

- 3.56 As mentioned above, environmental effects ultimately affect human beings to some degree. These impacts are discussed in detail in the referenced chapters of this Environmental Impact Statement.

### **MITIGATION MEASURES**

- 3.57 The following chapters of this EIS provide an assessment of the potential effects of the proposed recovery facility and outline a number of mitigation measures to ensure that the potential effects identified are eliminated and/or minimised.
- Chapter 6 – Hydrology and Hydrogeology
  - Chapter 8 – Air Quality
  - Chapter 9 -- Noise
  - Chapter 10 - Landscape
  - Chapter 12 - Material Assets
  - Chapter 14 - Traffic
- 3.58 In addition, to the proposed mitigation measures, it is anticipated that the proposed development would be controlled by conditions attached to any planning permission granted by Wicklow County Council and by conditions attached to any waste licence which may be issued by the Environmental Protection Agency.

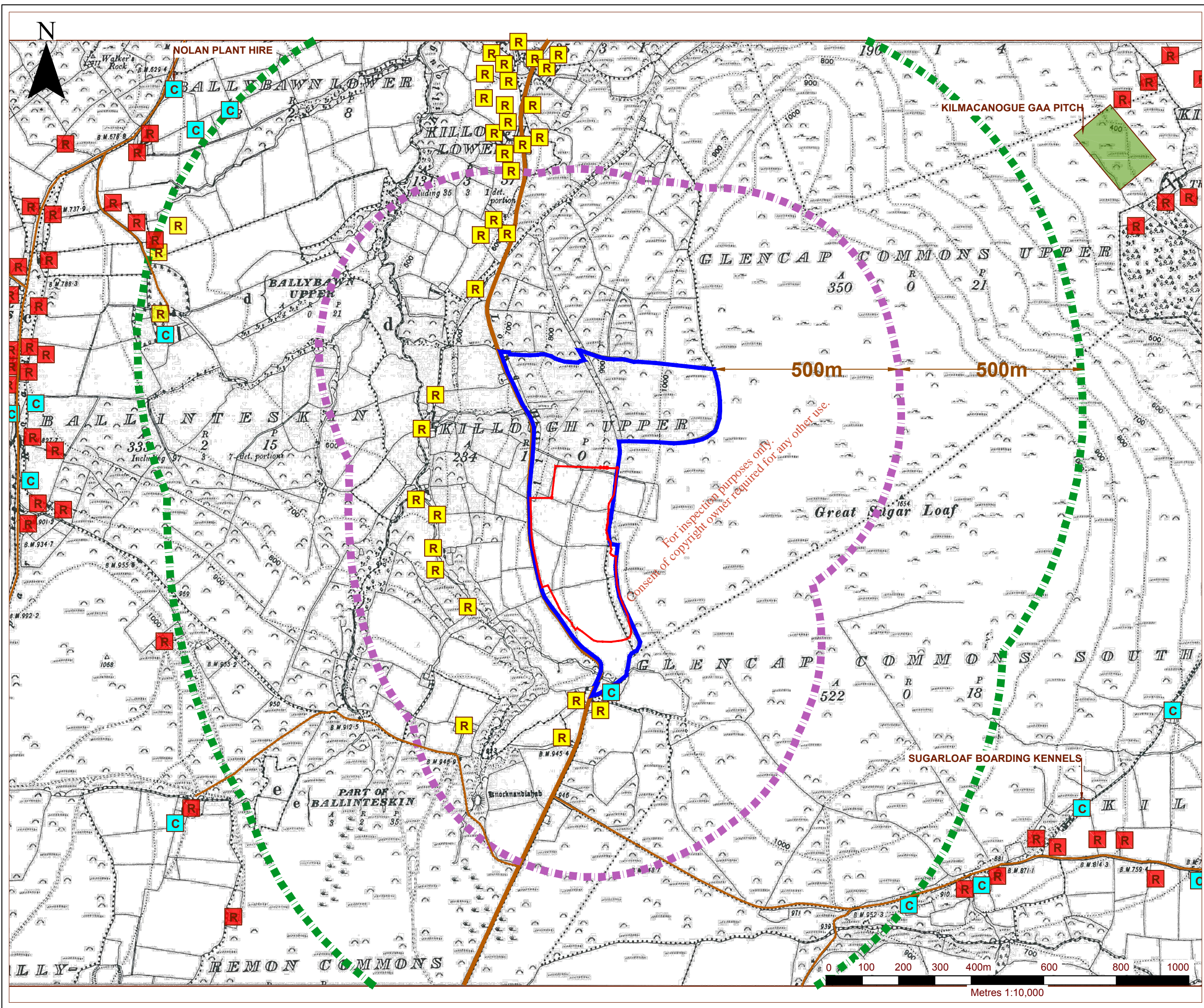
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## FIGURES

Figure 3-1  
Surrounding Land Use

00180.00:109.R1.FIG\_3-1.Residential Locations.dwg



**NOTES**

1. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND
2. EXTRACT FROM ORDNANCE SURVEY IRELAND 6 INCH DIGITAL MAPPING MAP NO. WW007

**LEGEND**

	ROADSTONE LIMITED LAND INTEREST (c.25.4 Hectares)
	PLANNING APPLICATION AREA (c.9.1 Hectares)
	1km BUFFER FROM LAND INTEREST BOUNDARY
	500m BUFFER FROM LAND INTEREST BOUNDARY
	RESIDENTIAL PROPERTIES WITHIN 1km OF THE APPLICATION SITE
	RESIDENTIAL PROPERTIES OUTSIDE 1km OF THE APPLICATION SITE
	COMMERCIAL PROPERTIES / FARM YARDS ETC.
	LOCAL ROAD NETWORK

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**ROADSTONE LIMITED ENVIRONMENTAL IMPACT STATEMENT**  
**INERT SOIL WASTE RECOVERY FACILITY**  
 CALARY QUARRY,  
 KILMACANOGUE, CO. WICKLOW  
**RESIDENTIAL LOCATIONS**

**FIGURE 3-1**

Scale 1:10,000 @ A3 Date MAY 2016