

# LANDSCAPE AND VISUAL 10

## CONTENTS

INTRODUCTION .....	1
Background .....	1
Scope of Work .....	1
Legislative Framework / Planning Policy .....	2
Consultations .....	5
Author .....	5
RECEIVING ENVIRONMENT .....	5
Baseline Study Methodology .....	5
Landscape Baseline .....	6
Visual Baseline .....	12
Difficulties Encountered .....	14
IMPACT ASSESSMENT .....	14
Evaluation Methodology .....	14
Landscape and Visual Impacts .....	19
Impacts on Landscape / Planning Designations .....	27
Do-nothing Scenario .....	29
MITIGATION MEASURES .....	29
RESIDUAL IMPACT ASSESSMENT .....	29
REFERENCES .....	30

## TABLES

Table 10-1 Views and Prospects of Special Amenity Value or Special Interest .....	3
Table 10-2 Protected Sites .....	4
Table 10-3 Aesthetic Attributes of Local Landscape, Within and Adjacent to Quarry ..	9
Table 10-4 Visual Receptor Areas (VRA) .....	13
Table 10-5 Susceptibility to Change in Relation to Receptor Type .....	16
Table 10-6 Definition of Levels of Magnitude .....	17
Table 10-7 Principles of Assessing Significance of Landscape and Visual Impacts .	18
Table 10-8 Definition of Significance Criteria for Landscape and Visual Impact .....	18
Table 10-9 Magnitude of Landscape Effects .....	20
Table 10-10 Visual Receptor Sensitivity .....	21
Table 10-11 Magnitude of Visual Effects .....	22
Table 10-12 Significance of Visual Effects (during Waste Recovery Operations) .....	27
Table 10-13 Significance of Visual Effects (At End of Waste Recovery Operations)	27
Table 10-14 Visual Impact on Views and Prospects .....	28

## FIGURES

Figure 10-1 Landscape Designations
Figure 10-2 Zone of Theoretical Visibility (ZTV) Map & Viewpoint Locations
Figure 10-3 Viewpoints A, B and C
Figure 10-4 Viewpoints D, E and F
Figure 10-5 Viewpoints G, H and I
Figure 10-6 Viewpoint A : Sketch Photomontage
Figure 10-7 Viewpoint E : Sketch Photomontage

## APPENDICES

Appendix 10-A Zone of Theoretical Visibility (ZTV) – Methodology
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## INTRODUCTION

### Background

- 10.1 This chapter assesses the landscape and visual impacts arising from the proposed restoration of Calary Quarry at Killough Upper, Kilmacanogue, Co. Wicklow, by backfilling it to former ground level using imported inert soil and stone and establishing a heathland / grassland habitat similar to that which existed prior to quarrying.
- 10.2 Calary Quarry is located approximately 2km southwest of Kilmacanogue on the western slopes of the Great Sugar Loaf mountain. The R755 Regional Road runs along the western boundary of the quarry. The N11 National Primary Road is located just over 2km to the east. The village of Enniskerry is located 4km to the north and Bray town 5km to the northeast. The quarry comprises a large void, which is currently water filled, and some hardstanding areas to the west, close to the site entrance off the R755, where office facilities and site infrastructure were previously located.
- 10.3 This planning application addresses the infilling of the quarry void with imported inert materials, in order to restore the local topography to a similar landform to that which existed prior to extraction works at the site. It is envisaged that the final surface will be restored to grassland and left to naturally evolve into a scrub / heathland habitat, similar to what is present in the surrounding area. Further details on the proposed development are provided in Chapter 2 of this EIS.
- 10.4 Landscape and visual effects are independent but related issues; landscape effects are changes in the landscape, its character and quality, while visual effects relate to the appearance of these changes and the resulting effect on visual amenity. Wherever possible, identified effects are quantified, however the nature of landscape and visual impact assessment requires interpretation by professional judgement. In order to provide a level of consistency to the assessment, the appraisal of sensitivity and the prediction of magnitude and assessment of significance of the residual landscape and visual effects have been based on pre-defined criteria, as described further in following sections of this report.

### Scope of Work

- 10.5 This landscape and visual impact assessment was undertaken in accordance with the **Guidelines for Landscape and Visual Impact Assessment** (Landscape Institute and Institute of Environmental Management and Assessment, Third Edition, 2013; hereafter referred to as GLVIA3) and is structured in the following manner:
- *Introduction* – a brief description of the proposed development and the structure of this report, as well as an account of the relevant planning context (e.g. planning policies, designated landscapes, sites of nature conservation importance etc.);
  - *Receiving Environment* – a description of the landscape and visual baseline;
  - *Impact Assessment* – a description of the aspects of the development which are likely to cause a landscape and/or visual effect, including the methodology for and an assessment of landscape and visual receptor

# LANDSCAPE AND VISUAL 10

sensitivity, as well as the magnitude and significance of the landscape and visual effects;

- *Remedial Measures* – a description of the measures which will be implemented to mitigate any landscape and visual effects of the proposed development; and
- *Residual Impact Assessment* – a summary of the ultimate (post-mitigation) degree of landscape and visual impact.

10.6 The assessment is illustrated by a Landscape Designations Map (including viewpoint locations), a Zone of Theoretical Visibility Map and three Viewpoint Sheets, presented as Figures 10-1, 10-2, 10-3, 10-4 and 10-5 respectively. A description of the proposed development and restoration scheme is provided in Chapter 2 of this EIS (refer also to Figures 2-10 and 2-11).

## Legislative Framework / Planning Policy

10.7 The Wicklow County Development Plan 2010-2016 (WCDP) is the current statutory plan outlining the development objectives / policies of the local planning authority. Those policies within the development plans of relevance to the proposed development and this assessment, are listed below. In addition, the National Parks and Wildlife Service (NPWS) website was consulted to identify any designated nature sites in close proximity to Calary Quarry.

## Construction and Demolition Waste Facilities

10.8 **Section 13.8.5** of the current WCDP addresses construction and demolition waste facilities and states that “*Applications for the development of commercial waste disposal or recycling facilities catering for the disposal or reuse of inert clean soils, clay, sands, gravels and stones shall only be permitted at appropriate locations and shall be subject to the following:*

- *The proposed development shall not be located on lands that have a negative impact on the surrounding landscape or near a designated Natura 2000 site, or which interferes with a protected view or prospect, a public right of way, an existing or planned piece of strategic infrastructure, or an important tourist site;*
- *A development shall not be permitted if it has a detrimental impact on the amenity of adjoining residents, by reason of unacceptable levels of traffic, noise, dust, lighting or other impact resulting from the operation of the facility.*

## Landscape

10.9 **Section 17.9.1** of the current WCDP addresses Landscape Characterisation and includes the following objective (designated LA2) – “*Any application for permission in the Area of Outstanding Natural Beauty (AONB) or CLA zones shall be accompanied by a Visual Impact Assessment, which shall include, inter alia, an evaluation of visibility and prominence of the proposed development in its immediate environs and in the wider landscape, a series of photos or photomontages of the site / development from clearly identified vantage points, an evaluation of impacts on any listed views / prospects and an assessment of vegetation / land cover type in the area (with particular regard to commercial forestry plantations which may be felled thus altering character / visibility).*”

# LANDSCAPE AND VISUAL 10

10.10 The landscape baseline below presents more information on the location of the application site in relation to defined landscape character areas.

## Views and Prospects

10.11 **Section 17.9.2 of the current WCDP addresses views and prospects and outlines** out the following objective (designated VP1) – *“To protect listed views and prospects from development that would either obstruct the views / prospect from the identified vantage point or form an obtrusive or incongruous feature in that view / prospect. Due regard will be paid in assessing development applications to the span and scope of the view / prospect and the location of the development within that view / prospect.”*

10.12 There are several listed views and prospects within a 10km radius of Calary Quarry (identified on Figure 10-1). Those within which the application site is potentially visible are listed in Table 10-1 below (based on information provided in Schedules 17.8 and 17.9 in Volume 2 of the current WCDP).

**Table 10-1**  
**Views and Prospects of Special Amenity Value or Special Interest**

View / Prospect No.	Origin (of View)	Description / Feature	Distance / Direction from Application Site
<b>View 1</b>	R117 at The Scalp Enniskerry	View of Sugarloaf Mountains and Enniskerry	5.8km N
<b>View 2</b>	L1011 at Curtlestown, Glencree Drive	View of Bray Head, Sugarloaf Mountain and Djouce Mountain	4.5km NW
<b>Prospect 1</b>	L1011, L1015 and L5014, Glencree	Prospect of mountain area around Glencree Drive, Prince William Seat, Glencree River and Sugarloaf Mountain	3.9km NW
<b>Prospect 2</b>	L1013 Glencree Drive South	Prospect of Tonduff mountain and Glencree river valley. View to east of Sugarloaf mountain	3.3km NW
<b>Prospect 3</b>	L1013 and L1017, Balinagee, Glencree Drive	Prospect of Glencree Valley and Sugarloaf	1.9km NW
<b>Prospect 8</b>	L1035 Long Hill, Kilmacanogue	Prospect towards Bray Head, Great Sugarloaf and coast	1.4km W
<b>Prospect 9</b>	L1031 Red Lane and R755 at Calary	Prospect of Great Sugarloaf at Calary	400m S
<b>Prospect 10</b>	R755 at Calary	Prospect of Ballyremon commons and Calary upper	150m S
<b>Prospect 17</b>	R115 Military Road Glencree to Laragh	Prospect of both sides of mountainous terrain	9.2km NW

# LANDSCAPE AND VISUAL 10

## Protected Sites

10.13 There are several Special Areas of Conservation (SAC), Special Protection Areas (SPA) and proposed Natural Heritage Areas (pNHA), as well as a National Park and two Nature Reserves within the study area (refer to Figure 10-1). Those within a 5km radius of the site are listed in Table 10-2 below.

**Table 10-2  
Protected Sites**

Type	Site Code	Name	Distance / Direction from Application Site
SAC	002122	Wicklow Mountains (also a National Park)	3.2km W
SAC	000719	Glen of the Downs (also a Nature Reserve)	2.2km SE
SAC	000725	Knocksink Wood (also a Nature Reserve)	4.4km N
SPA	004040	Wicklow Mountains	2.7km W
pNHA	001769	Great Sugar Loaf	0km E
pNHA	000724	Kilmacanogue Marsh	2km NE
pNHA	001768	Powerscourt Woodland	2km NW
pNHA	001767	Powerscourt Waterfall	2km W
pNHA	001754	Dargle River Valley	3.1km N
pNHA	001755	Glencree Valley	3km NW
pNHA	000719	Glen of the Downs	2.2km SE
pNHA	000725	Knocksink Wood	4.4km N

10.14 **Section 17.3 – Biodiversity** of the current WCDP sets out the following Objectives with regard to the designated sites:

- BD3: *“To maintain the favourable conservation status of existing and future Natura 2000 sites (SACs and SPA’s) and Annex I - Habitats and Annex II - Animal and Plant species in the County.”*
- BD5: *“To maintain the conservation value of all proposed and future Natural Heritage Areas (NHAs) in Wicklow.”*
- BD6: *“The Council recognises the natural heritage and amenity value of the Wicklow Mountains National Park and shall consult at all times with National Park management regarding any developments likely to impact upon the conservation value of the park, or on issues regarding visitor areas.”*

## Protected Structures

10.15 Please refer to Chapter 11 of this EIS (Cultural Heritage) for an assessment of the impact of the proposed development on the visual amenity (if any) at protected structures within the study area.

## Consultations

10.16 Following a review of published development plans and a site inspection, it was considered that there was no requirement for a separate formal consultation to be carried out with regard to landscape and visual impact of the proposed development.

## Author

10.17 This landscape and visual assessment, including site work and accompanying drawings, was undertaken by Anne Merkle, a suitably qualified Landscape Architect with SLR Consulting Ireland.

## RECEIVING ENVIRONMENT

### Baseline Study Methodology

10.18 The landscape and visual baseline study has involved a desktop study, field work, data processing and analysis. The aim of the landscape baseline study *"is to provide an understanding of the landscape in the area that may be affected"* (Section 3.15 of GLVIA 3), including its constituent elements, landscape character and its geographic extent.

10.19 With regard to the visual baseline, GLVIA 3 (Section 3.15) states that it is the aim *"to establish the area in which the development will be visible the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points."*

10.20 Representative and illustrative viewpoints were selected for this assessment on the basis of the following factors / parameters:

- types of receptor: to include settlements, roads, marked footpaths and cycle paths, marked viewpoints, picnic areas and beauty spots and outdoor passive recreational locations;
- different distances from the development;
- different directions from the development with the aim of achieving a distribution from different compass points around the site; and
- different altitudes.

10.21 Refer to Figures 10-3, 10-4 and 10-5 for the nine selected viewpoints (designated VP A-I). These viewpoints represent typical views towards Calary Quarry from the surrounding area.

10.22 Photographs were taken in February 2015, using a Canon EOS 1000D digital SLR camera. The nature of the views was of relatively wide panoramas and it was therefore considered beneficial to present the photographs in this way. The panoramic views consist of two to four photographic frames merged together using ArcSoft - Panorama Maker 4 software. It should be noted that photography is a tool to assist in the visualisation process and cannot be expected to replicate the actual view, which would be attained on the ground.

### Study Area

10.23 A study area of approximately 3km surrounding Calary Quarry and extending up to 7km to the north and west and 10km to the northwest was identified following the desk top study, and the preparation of the zone of theoretical

# LANDSCAPE AND VISUAL 10

visibility (ZTV) mapping, refer to Figure 10-2. It should also be noted that the visual envelope, i.e. the area from where the planning application site is actually likely to be visible, is much smaller than the study area (due to the presence of screening vegetation and/or intervening topography).

## Sources of Information

10.24 The desktop study and field work was supported, inter alia, by information obtained from the internet, digital as well as paper (Ordnance Survey) maps at varying scales and the Wicklow County Development Plan 2010-2016.

## Field Monitoring / Inspection

10.25 A detailed site survey was carried out on 4<sup>th</sup> February 2015 in mostly sunny, conditions, with clear visibility. The visibility assessment has concentrated on publicly accessible areas such as the road and public footpath networks, residential and outdoor recreational areas.

## Landscape Baseline

### Existing Landscape Appraisals of the Site and its Surroundings

10.26 Section 17.9.1 of the current WCDP provides a brief Landscape Characterisation, which places the landscapes of Wicklow in a hierarchy of 'Areas of Outstanding Natural Beauty', 'Areas of Special Amenity', 'Rural Areas', 'Corridor Areas' and 'Urban Areas'. The application site is fully located within the designated 'Mountain and Lakeshore Area of Outstanding Natural Beauty' (ML-AONB), which is described as having very high vulnerability.

10.27 The ML-AONB is further described as follows: "*The Mountain and Lakeshore AONB area encompasses those areas which are most vulnerable and sensitive, and which are considered to be of greatest scenic value. This area, due to recent development pressures, tends to be under severe development pressure. It contains*

- *The central mountain area including the Wicklow Mountains National Park;*
- *The Great and Little Sugarloaf Mountains and Bray Head in north-east Wicklow;*
- *The Glencree and Glencullen river valleys in north-east Wicklow;*
- *Poulaphuca Reservoir Area.*

*The central mountain area extends from the Dublin border in the north, to Aughrim in the south and from the Glen of Imaal in the west, to Roundwood in the east. One of the main characteristics of this area is mountainous topography with U-shaped valleys, lakes and glacial topography. The northern hills area relates mainly to the Great and Little Sugarloaf Mountains and to Bray Head. The Glencree and Glencullen valleys abut the Dublin border."*

10.28 The area immediately to the west and south of the Great Sugarloaf, i.e. surrounding Long Hill and the source of the Vartry River is designated as an Area of Special Amenity. Section 17.9.1 of the WCDP states that "*This landscape area encompasses those areas, which, whilst not as vulnerable nor as sensitive as those areas in the AONB area, are still subject to pressure for development, which could result in a serious deterioration in the landscape quality. The sensitivity of these areas is made more pronounced by the fact that they act as an effective "gateway" to the more remote and wild upland*

# LANDSCAPE AND VISUAL 10

*areas and because the more ameliorative nature of the landform ensures that there is greater development pressure.”*

- 10.29 The area surrounding Kilmacanogue and along the N11 is designated as an Access Corridor Area (ACA), which the WCDP states “*covers the main access corridor areas of Wicklow. The boundaries generally follow what is considered to be the areas upon which the greatest influence is exerted by these access routes. These routes, for the most part, run through the more low lying and accessible tracts of land and connect the major towns.*”
- 10.30 The non-urban areas between Greystones and Bray and to the south of Greystones are designated as the Coastal Area of Outstanding Natural Beauty.

## *Outdoor Recreational Facilities within the Study Area*

- 10.31 The Wicklow Way long distance walking route passes within 3km to the west of the application site, as it ascends the north-eastern slopes of Maulin. The route of the Wicklow Way within the study area takes it from Prince William’s Seat, past Knockree, down into the Glencree River valley and up again past Maulin and towards Djouce Mountain. The application site is potentially visible from most sections of the Wicklow Way within the study area above 200m AOD. However, the numerous conifer plantations and other wooded areas along the route, restrict the number of available view significantly.
- 10.32 There are a number of other popular walking routes within the study area. One of which is the ascent to the Great Sugar Loaf, from the local road to the south of the mountain (L1031). Parts of the application site are currently visible from a section of this walk to the west of the highpoint (refer to Viewpoint A on Figure 10-3).
- 10.33 Other walking routes include a number of walks around Powerscourt Waterfall. The application site is not visible from the vast majority of these walks, due to intervening topography and conifer plantations.
- 10.34 Powerscourt House and Gardens is one of the most popular tourist attractions in eastern Ireland. It is located approximately 4km to the northwest of the application site. One of the main attractions is the view of the Great Sugar Loaf from within the garden. The upper section of the existing eastern quarry face at Calary Quarry is visible in some of these views, at some distance to the right of the distinctive peak (refer to Viewpoint I on Figure 10-5).
- 10.35 There are a number of golf courses located within the study area, including Powerscourt Golf Club, adjoining Powerscourt House and Gardens to the north and the Glen of the Downs Golf Club, to the south of the Little Sugar Loaf.

## *Site Specific Landscape Appraisal*

### Natural / Semi-Natural Factors

- 10.36 Figure 10-1 identifies the landform of the surrounding area and also identifies the key landscape features / designations.
- 10.37 The topography of the study area and surrounding landscape varies a great deal, from the shoreline with low cliffs, coastal plain and undulating lowland / wide river basin to the east, to the mountainous region in the west with steep sided valleys and gorges. The area around the application site forms an



# LANDSCAPE AND VISUAL 10

extension of the mountainous area, with a series of hills including the Great and Little Sugar Loaf extending eastwards towards the coast at Bray Head.

- 10.38 The shoreline consists of sand and shingle beaches backed by generally low cliffs. The coastal zone forms a belt beyond the shoreline averaging 2km wide, with an elevation of 10mAOD to 50mAOD. The undulating lowland and inhabited river valleys beyond this range from 50mAOD to 250mAOD.
- 10.39 The major watercourse found within the study area is the Glencree River which flows towards the application site from the northwest via a steep sided valley. This valley feature forms a visual corridor which allows long distance views of the application site. The Dargle River rises at the Powerscourt Waterfall which is approximately 3km to the west of the application site and flows thereafter through a steep sided valley which opens up to the north, to the confluence between the Dargle and the Glencree River. The Vartry River rises immediately to the south of the application site at Ballyremon Commons and flows in a southerly direction toward the Vartry Reservoir.
- 10.40 The application site lies on the western slope of the Great Sugar Loaf Mountain. The Great Sugar Loaf is a distinctive pinnacle of rock which rises to 501mAOD with its sister peak, the Little Sugar Loaf located to the north east, rising to 342mAOD. These two distinctive topographical features are separated from the Wicklow Mountains by the valley features associated with the River Vartry and River Dargle, discussed previously. The Wicklow Mountains, which extend over the western half of the study area, are formed by a series of adjoining hills and mountains with peaks ranging from approximately 570mAOD to 725mAOD (at Djouce Mountain).
- 10.41 Semi-natural vegetation is generally restricted to valley, hill and mountain sides, and predominantly comprises conifer plantation. Within the local area, the Great and Little Sugar Loafs are almost devoid of any vegetation as the thin soils sustain little plant life; it is only the lower reaches surrounding the application site which support areas of gorse and heathland / grassland mosaic.
- 10.42 The existing quarry forms an elongated extraction area which is separated from the R755 regional road by a steep bund of retained rock, with only a narrow opening from which access can be gained from the adjacent road. The vegetated external face of the bund appears as a continuation of the mountain side on the approach to the quarry.

## Cultural and Social Factors

- 10.43 Farming varies across the study area, with fertile, intensive farming on lowland areas and less intensive stock rearing on the higher, more mountainous slopes.
- 10.44 Within the Area of Special Amenity (e.g. Long Hill), field boundaries tend to be large and irregular in shape, being divided by dense hedgerows incorporating trees and scrub, with bands of woodland plantation and large blocks of gorse / heathland on the steeper slopes. Within the Access Corridor Area and towards the coast, field boundaries are typically lower in height and are more intensively managed.

# LANDSCAPE AND VISUAL 10

- 10.45 Upland areas within the Wicklow Mountains are more open, with expansive areas of heathland and gorse, with some large blocks of conifer plantation which are concentrated around incised valley features which cut between the hills and mountains.
- 10.46 The N11 National Primary Road runs north to south parallel to the coast and forms the main transport / communication link through the study area (Access Corridor Area). The other main roads include the R755 Regional Road which wraps around the northern side of the Great Sugar Loaf before passing the application site and then travelling south towards the Vartry reservoir. To the north of the application site, the R117 and R760 Regional Roads form inland connections between Bray, Enniskerry, Kilmacanoge and the south-western side of Dublin. The R115 Military Road passes through the Wicklow Mountains in a north-south direction and enters the study area at the head of the Glenree River Valley, approximately 10km to the north-west of the application site. With the exception of short sections of the R755, R760, R117 and the R115, the ZTV indicates that it is unlikely that there will be inter-visibility between the site and the majority of the major roads.
- 10.47 The two main settlements found within the surrounding landscape are the coastal towns of Bray and Greystones. Outside of these towns the settlement is more widespread across the lowland areas and along the river valleys, in the form of small villages such as Enniskerry and Kilmacanogue, and many other well spaced small clusters of dwellings and one-off housing. Further upland, residential houses and small groups of dwellings tend to be more sporadic, and of these, most are isolated and located along local roads on the low / middle hillsides.
- 10.48 Particular cultural significance is signified by the designation of particular landscape features, such as the Wicklow Mountains National Park, Wicklow Way and Views / Prospects of Special Amenity. Specific viewpoints have been included in this assessment to represent them (refer to Viewpoints C-I on Figures 10-3, 10-4 and 10-5).

## Aesthetic and Perceptual Aspects

- 10.49 The aesthetic qualities of the local area are summarised in Table 10-3 below, divided into the main categories identified within the GLVIA3 guidance.

**Table 10-3**  
**Aesthetic Attributes of Local Landscape, Within and Adjacent to Quarry**

<b>Aesthetic Factors</b>	<b>Description</b>
Enclosure	The level of enclosure within the study area varies a great deal; while it is generally open, changing to exposed on the largely unvegetated hill and mountain tops, there are specific areas within the steep sided valleys and gorges to the edge of the Wicklow Mountains which are enclosed by both landform and woodland. Enclosure opens up in the wider Glenree River valley, which allows long distant views in the direction of the application site. The quarry void itself is well contained and enclosed by the surrounding quarry rim, however due to the elevation of the application area and surrounding low growing vegetation, the rim itself is more exposed.

# LANDSCAPE AND VISUAL 10

Aesthetic Factors	Description
Balance	The study area is generally well balanced, with the land initially rising gently from the coast towards the steeper slopes of the Wicklow Mountains. The Great and Little Sugar Loaf counter this balance forming distinctive and more isolated pinnacles between the Wicklow Mountains and the low lying coastal area. The extensive coniferous woodland within the Glenree Valley introduces a discordant element to the landscape.
Pattern	General patterns are defined by an irregular mix of agricultural enclosure, woodland, heathland and gorse which dissipate towards the rocky less vegetated hill / mountain tops. The roads are more regular, predominantly running north-south, with lesser connecting roads being east-west. This pattern is lost to the north of the site around Enniskerry, where the topography has forced routes to take a more meandering course.
Diversity	The high level of settlement and irregular parts of the landscape pattern has created quite a diverse rural landscape. The mixture of house building styles and materials adds to the diversity in the more settled east, while the irregular planting and felling of forestry adds a diversity to the west.
Scale	The scale of the landscape is generally large with elevated views from the hills and mountains and generally unrestricted views across open agricultural land. This is also true for the locality of the site, although there are some exceptions, such as within the base of more narrow valleys and gorges and within the settlements.
Form and Line	The landscape form is generally concave, with undulating agricultural land which steepens towards the hills and mountains. While the roads and field boundaries are generally straight, the overall appearance is curved due to the underlying topography.
Colour	The area is typified by agricultural greens associated with the grazing land which is broken up by blocks of bright yellow gorse (when in flower) and darker greens of the conifer plantation. At a higher altitude, the largely un-vegetated mountain / hill tops take on the muted greys of the exposed rock and scree. The immediate vicinity of the application site is a contrast between the bright yellow block of gorse and the muted greys and greens of exposed rock and stressed grassland
Movement	The principal sources of movement in the landscape are associated with the N11, which is a busy national route. The R755 which passes the application site is a quieter road in comparison, but is still a well trafficked route. The minor roads are relatively unused other than by local traffic, but become busier nearer towns and tourist / leisure destinations such as Enniskerry and Powerscourt.

# LANDSCAPE AND VISUAL 10

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## Landscape Dynamics and Potential for Landscape Enhancement

- 10.50 The landscape is continually changing and evolving, mainly in response to the demands placed upon it, but sometimes due to a lack of management. An examination of the likely changes to the landscape as a whole is important in setting the context of potential changes caused by the development.
- 10.51 Changes in farming practices are likely to have the greatest effect on the landscape in the future. The trend towards more environmentally focussed grant systems for farming may help to preserve the existing landscape character better than previous systems focussed on output levels.
- 10.52 It is likely that through policies on forestry, improvements can be made to the large areas of coniferous woodland, and to gradually re-introduce larger areas of native woodland species. This is already taking place on the east facing slopes of the Wicklow Mountains along the Wicklow Way.
- 10.53 The establishment of coastal management zones is likely to help preserve the existing character of the coastal areas nearby. Careful consideration is required with regard to future coastal development, which should present significant opportunity for improvement of facilities.
- 10.54 More comprehensive consideration of residential development particularly within the AONB and Area of Special Amenity with regards building style, placement and grouping is also likely to have positive effects for the coherence and quality of this rural landscape.

## Landscape Character, Classification and Evaluation

- 10.55 The landscape appraisal identifies a relatively well defined series of landscape zones running parallel with the coast. These zones are reflected in the Wicklow Landscape Categorisation. This categorisation has assisted in defining the key characteristics of the landscape within the study area and when combined with the Landscape Appraisal presented in this report, enables an assessment of potential impact to be carried out.

## Conclusions on the Landscape Appraisal of the Existing Site

- 10.56 The local landscape is defined by a strong landform pattern running parallel with the coast which is broken by the distinctive rocky pinnacle formed by the Great Sugar Loaf, and to a lesser extent, the Little Sugar Loaf. An irregular agricultural pattern exists to the landscape with widespread dwellings which are both individual and clusters which cover most of the low lying parts of the study area, and the larger more defined settlements of Bray and Greystones located along the coast.
- 10.57 Open and distant views are possible from elevated positions on the hills and mountains such as the views looking to the east from the Wicklow Way, and those from the head of the Glenree River valley which runs south-eastwards in the direction of the application site. Views from within the main transport corridor of the N11 are generally quite restricted, particularly when it passes between the Great and Little Sugar Loaf and the steep sided cutting at the Glen of the Downs.

## Visual Baseline

### General Visibility

- 10.58 The visibility of the application site was initially assessed by a desktop study of OSI Discovery Maps (1:50,000) and available aerial photography. This was followed by 3D computer modelling and calculation of a number of zones of theoretical visibility (ZTV), using LSS (McCarthy Taylor) software, in accordance with the methodology set out in Appendix 10-A.
- 10.59 It should be noted that the ZTV mapping is based on a bare terrain; that is, the computer model does not include built structures or vegetation. As a result, the extent of visibility which is illustrated, is regarded as a worst case scenario, and would be greatly reduced if buildings and vegetation were included in the model. In SLR's experience views from within areas with a visibility of up to 0.4 degrees tend to be screened by hedgerows and other vegetation (if present). These areas are coloured in shades of grey on the ZTV mapping, in order to differentiate them from other, potentially more visible, areas.
- 10.60 Figure 10-2 shows the ZTV for the existing site contours, i.e. the existing quarry void. This mapping indicates that the proposed development will potentially be most visible from an area approximately 2km to the west of the site. The site is further potentially visible within a 10km radius to the north-west and west and up to 7km to the south-west. Large parts of the areas of potential visibility fall within the grey shaded areas, and are therefore less likely to display actual visibility, due to intervening vegetation. However, due to the openness of more elevated parts of the study area, views from within some of these grey shaded areas are still likely, although generally at a great distance.

### Site Survey

- 10.61 The site survey revealed that many of the potential views indicated by the ZTV are screened by roadside and intervening vegetation, in particular in those areas below the 200m contour (refer to Viewpoint G on Figure 10-5). At these lower levels pasture land with associated hedgerows prevails. At elevations above the 200m contour roadside hedgerows and conifer plantations still block many views, however long distance panoramic views are available at regular intervals. Many of these are available along and across the Glencree valley.
- 10.62 The application site is most openly visible from the local road to the north-west of Long Hill, due to the elevation of this road, the relatively close distance to the site and the viewing direction, i.e. directly opposite the eastern quarry face (refer to Viewpoints D and E on Figure 10-4).
- 10.63 Similar views, although at slightly more oblique angles and at greater distance can be gained from the area around Curtlestown and sections of the Wicklow Way on the southern slopes of Prince William's Seat and the northern / eastern slopes of Maulin and Djouce Mountain, as well as from the head of the Glencree Valley (refer to Viewpoints F and H on Figures 10-4 and 10-5).
- 10.64 Profile views of the eastern quarry face are available from a number of locations within the Powerscourt Estate and around Killegar, north of Enniskerry (refer to Viewpoint I on Figure 10-5). There are also some views of the inside western rim of the existing quarry from the public footpaths on the western slopes of the Great Sugar Loaf. The tall quarry faces and the quarry floor are however screened by topography in these views (refer to Viewpoint A on Figure 10-3).

# LANDSCAPE AND VISUAL 10

## Visual Receptors

10.65 The receptors with existing and/or potential views of the planning application area consist of road users, hill walkers and residents of private properties in a number of locations within the study area. Some of these experience similar views of the site and they were therefore grouped into two Visual Receptor Areas (VRAs). The location and extent of each of the VRAs is indicated on Figure 10-2 and described in Table 10-4 below. The table further lists the types of receptors present in each VRA and describes the nature of views / visual amenity within the areas. Any viewpoints representing a typical view from within one of VRAs are listed (refer to Figures 10-3, 10-4 and 10-5).

**Table 10-4**  
**Visual Receptor Areas (VRA)**

VRA No.	Location/ Extent	Types of Receptors	Nature of Views/Visual Amenity
1	Footpaths on the western slopes of the Great Sugar Loaf.	Hill walkers.	Highly scenic vast panoramic views of the Wicklow Mountains. The western rim of the existing quarry void is visible at a fairly close distance in the foreground of the view, surrounded by scrub and agricultural land. The majority of the existing extraction void and quarry faces are screened by topography.  Very high visual amenity.  Viewpoint A represents typical view.
2	Approx. 300m along the R755, north and south of the application site entrance.	Road users.	Close distance views towards application site entrance. Small section of existing northern quarry face visible; majority of quarry void screened. Note: focus of views along R755 on opposite site of road towards Long Hill and Powerscourt.  High visual amenity of views away from application site; decreased amenity along road corridor and towards site entrance.  Viewpoint B represents typical view.
3	Approx. 1.4km along local road to northwest of Long Hill and local residents.	Local road users and residents of approx. 15 private properties.	Close to medium distance panoramic views towards Great Sugar Loaf. Existing eastern quarry face visible at the foot of the mountain (note: roadside/intervening vegetation screens views from some locations within the area).  High visual amenity.  Viewpoints D and E represent typical views.
4	Powerscourt Estate (parts of gardens and access road)	Visitors to Powerscourt Estate.	Medium distance views towards Great Sugar Loaf, usually framed by trees in the foreground. Existing eastern quarry face visible in profile at the foot of the mountain (note: intervening vegetation screens views from some locations within the area).  High visual amenity.  Viewpoint I represents typical views.

# LANDSCAPE AND VISUAL 10

VRA No.	Location/ Extent	Types of Receptors	Nature of Views/Visual Amenity
5	Approx. 1.8km along local road east and west of Curtlestown and 1.7km along Wicklow Way	Local road users, residents in Curtlestown and hill walkers.	Medium to long distance panoramic views towards Great Sugar Loaf. Existing eastern quarry face visible at the foot of the mountain (note: roadside/intervening vegetation screens views from some locations within the area). High visual amenity. Viewpoint H represents typical views.
6	Approx. 600m along local road at Killegar	Local road users and approx. 10 private properties.	Long distance views towards Great Sugar Loaf. Existing eastern quarry face visible in profile at the foot of the mountain (note: roadside/intervening vegetation screens views from some locations within the area). High visual amenity. Viewpoint I represents a similar view, albeit at much closer distance.
7	Footpaths on northern/eastern slopes of Maulin and Djouce Mountain	Hill walkers.	Medium to long distance panoramic views towards Great Sugar Loaf. Existing eastern quarry face visible at the foot of the mountain (note: conifer plantations screen views from some locations within the area). High visual amenity. Viewpoints D and E represent similar views, albeit at much closer distance.
8	Approx. 3km along R115 and 1.4km along local road at Ballylerane	Road users (scenic driving route) and approx. 10 private properties.	Very long distance panoramic views towards Great Sugar Loaf. Existing eastern quarry face perceptible at the foot of the mountain (note: roadside/intervening vegetation screens views from some locations within the area). High visual amenity. Viewpoint F represents typical views.

## Difficulties Encountered

10.66 No difficulties were encountered during the desktop study or field survey.

## IMPACT ASSESSMENT

### Evaluation Methodology

10.67 In order to arrive at conclusions about the significance of landscape/visual effects, this LVIA links judgements about the sensitivity of a receptor with the magnitude of identified effects. According to GLVIA 3, Section 3.26, the sensitivity (or 'nature') of a receptor is *"made up of judgements about:*

- *the susceptibility of the receptor to the type of change arising for the specific proposal; and*
- *the value attached to the receptor".*

# LANDSCAPE AND VISUAL 10

- 10.68 The magnitude (or 'nature') of effects is "*made up of judgements about:*
- *the size and scale of the effect - for example whether there is complete loss of a particular element of the landscape or a minor change;*
  - *the geographical extent of the area that will be affected; and*
  - *the duration of the effect and its reversibility"* (GLVIA 3, Section 3.26)
- 10.69 The judgements about the sensitivity and magnitude are supported by a number of pre-defined parameters, where possible, as described in more detail below. They are then summarised using word scales and combined using a matrix to arrive at the overall significance of the effects, also described in more detail below.

## *Landscape Sensitivity*

- 10.70 The sensitivity of the landscape is made up from a combination of judgements about the susceptibility of the landscape to change and the value attached to the landscape.
- 10.71 Susceptibility to change means the degree to which a landscape type / area / element is able to accommodate change (arising from a particular development) without detrimental effects on its character. Depending on the type of development proposed, this varies with the existing land use, the pattern and scale of the landscape, the visual enclosure / openness of views and the scope for appropriate mitigation. The value attached to the landscape can be judged by way of existing designations, landscape / scenic quality, rarity, recreation value.
- 10.72 For the purpose of this report landscape sensitivity is defined as HIGH, MEDIUM, LOW or NEGLIGIBLE, based on professional interpretation of the findings with regard to the susceptibility and value.

## *Viewpoint Sensitivity*

- 10.73 Viewpoint sensitivity is made up from a combination of judgements about the susceptibility of visual receptors to changes in views / visual amenity and the value attached to views.
- 10.74 The susceptibility to change in relation to different receptor types is defined in terms of high, medium and low susceptibility in Table 10-5 below. The value attached to views is judged taking account of planning designations, such as protected views and other indicators of the values attached to views, e.g. in relation to heritage assets, views marked on maps or the provision of facilities for the enjoyment of views.



# LANDSCAPE AND VISUAL 10

**Table 10-5**  
**Susceptibility to Change in Relation to Receptor Type**

Susceptibility	Visual Receptor Types
<b>High</b>	Users of outdoor recreational facilities including strategic recreational footpaths, cycle routes or rights of way, whose attention may be focused on the landscape; Important landscape features with physical, cultural or historic attributes; Principal views from residential buildings, beauty spots or picnic areas; Communities where views contribute to the landscape setting enjoyed by residents in the areas.
<b>Medium</b>	Other footpaths; Secondary views from residential properties; People travelling through the landscape on roads, trains or other transport routes.
<b>Low</b>	People engaged in outdoor sports or recreation (other than appreciation of the landscape); Commercial buildings; Other locations where people's attention may be focused on their work or activity.

10.75 The overall sensitivity of the visual receptors is summarised on a scale of HIGH, MEDIUM, LOW or NEGLIGIBLE based on professional interpretation of the findings with regard to the susceptibility and value.

## *Magnitude of Landscape / Visual Effects*

10.76 The judgements of the size or scale, geographical extent and duration / reversibility of the changes in the landscape are based on information (based on GLVIA 3, Sections 5.49-5.52) including:

- *the extent of existing landscape elements that will be lost ...;*
- *the extent to which aesthetic or perceptual aspects of the landscape are altered ...;*
- *whether the effect changes the key characteristics of the landscape ...;*
- *scale at which effects may have influence (e.g. site level, immediate setting, landscape type/character area);*
- *full / partial reversibility possible.*

10.77 Based on GLVIA 3, Sections 6.39-6.41, the judgements of the size or scale, geographical extent and duration / reversibility of visual effects are based on information including:

- *the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition ...;*
- *the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture;*
- *the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses;*

# LANDSCAPE AND VISUAL 10

- *the angle of view in relation to main activity of the receptor;*
- *the distance of the viewpoint from the proposed development;*
- *the extent of the area over which the changes would be visible;*
- *full / partial reversibility possible.*

10.78 The overall magnitude of the landscape/visual effects is summarised on a scale of 'substantial', 'moderate', 'slight' or 'negligible', based on professional interpretation of the findings with regard to size or scale, geographical extent and duration / reversibility. In order to assist the assessment, brief definitions of each level of magnitude are provided in Table 10-6, below.

**Table 10-6**  
**Definition of Levels of Magnitude**

<b>Magnitude</b>	<b>Definition</b>
<b>Substantial</b>	Total loss or major alteration of key elements / features / characteristics of the baseline conditions such that post development, landscape character or view composition attributes of the baseline will be fundamentally changed.
<b>Moderate</b>	Partial loss or alteration to one or more key elements / features / characteristics of the baseline conditions such that post development, landscape character or view composition attributes will be partially changed.
<b>Slight</b>	Minor loss or alteration to one or more key elements / features / characteristics of the baseline conditions.  Change arising from the loss/alteration will be discernible, but the underlying landscape character or view composition attributes will be similar to the baseline.
<b>Negligible</b>	Very minor loss or alteration to one or more key elements / features / characteristics of the baseline conditions.  Change will be barely distinguishable, approximating to 'no change'.

## *Significance of Effects*

10.79 The significance of any identified landscape or visual impact has been assessed in terms of 'major' 'moderate', 'minor' or 'none'. These categories have been based on combining the overall sensitivity of landscape/visual receptors and overall magnitude of effects, as shown in Table 10-7 below. This process is not a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods, is in the end a matter of professional judgement:

# LANDSCAPE AND VISUAL 10

**Table 10-7**  
**Principles of Assessing Significance of Landscape and Visual Impacts**

	Magnitude Substantial	Magnitude Moderate	Magnitude Slight	Magnitude Negligible
Sensitivity High	Major	Major/Moderate	Moderate	Moderate/Minor
Sensitivity Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Sensitivity Low	Moderate	Moderate/Minor	Minor	Minor/None
Sensitivity Negligible	Moderate/Minor	Minor	Minor/None	None

10.80 The above matrix is not used as a prescriptive tool and the methodology and analysis of potential effects at any particular location must allow for the exercise of professional judgement. Thus in some instances a particular parameter may be considered as having a determining effect on the analysis.

10.81 Table 10-8, below, provides a brief definition of the full range of significance criteria. For the purpose of this report, it is considered that major and major / moderate Impacts are significant.

**Table 10-8**  
**Definition of Significance Criteria for Landscape and Visual Impact**

Significance	Definition
<b>None</b>	The proposed scheme is appropriate in its context. It may be difficult to differentiate from its surroundings and would affect very few or no receptors.
<b>Minor</b>	The proposed scheme would cause a barely perceptible impact, and would affect few receptors.
<b>Moderate</b>	The proposed scheme would cause a noticeable difference to the landscape, and would affect several receptors.
<b>Major</b>	The proposed scheme would completely change the character and / or appearance of the landscape for a long period of time or permanently. It would affect many receptors.

## Landscape and Visual Impacts

### *Landscape Impacts*

#### Landscape Effects

- 10.82 The main landscape effect that will take place, due to the proposed development, is the change of the landform within the existing quarry void. Another landscape effect will be the removal of a small amount of scrub vegetation, due to the infill works.
- 10.83 In order to assist and inform the landscape assessment, two photomontages presenting visualisations of the backfilled landform are provided. Figure 10-6 presents the view of the restored site from the walking route leading to the top of the Great Sugar Loaf, while Figure 10-7 presents the view from a residential property along the local road at Long Hill, to the west of the application site.

#### Landscape Sensitivity

- 10.84 The susceptibility of the landscape character surrounding the application site, i.e. a diverse mix of upland scrub/heathland, rocky highpoints, conifer plantations, undulating agricultural land and wooded steep river valleys, to the change arising from the proposed development is fairly low. The key characteristics will not be affected by the proposal, as the works will be largely contained within the existing quarry void.
- 10.85 The susceptibility of the main landscape elements in the vicinity of the site, i.e. scrub, heathland and pasture, to the change arising from the proposed development is also low, as all works will take place within the bare rock disused quarry void and only a minor amount of scrub will be removed as part of the infilling of the site.
- 10.86 The value of the landscape within the study area is extremely high, due to the presence of numerous landscape designations (i.e. views and prospects of special amenity value or special interest, a National Park, Nature Reserves, SACs, an SPA, pNHAs), as well as tourist attractions, such as the Powerscourt Estate and the Wicklow Way long distance walking route.
- 10.87 Taking into account the extremely high value of the Wicklow Mountain landscape surrounding the application site, the overall sensitivity of the landscape character is assessed as HIGH. Considering the minimal disturbance of existing landscape elements, the sensitivity of individual landscape elements is assessed as MEDIUM.

#### Magnitude of Change to Landscape

- 10.88 Table 10-9 below describes the size and scale, geographical extent and duration / reversibility of the identified main landscape effect and makes a judgement of its overall magnitude:

# LANDSCAPE AND VISUAL 10

**Table 10-9  
Magnitude of Landscape Effects**

Parameter	Description
<b>Size and Scale</b>	<p>It is proposed to fill the existing extraction void, which covers an area of approximately 9.1ha with inert material to the height of the surrounding land. The final landform will merge with the adjoining land, with the exception of the area near the current site access road, where the fill will be built up from the existing ground level.</p> <p>All of the works will be contained within the existing void. Only a small amount of scrub and no other vegetation will be affected. Compared to the vast upland landscape surrounding the site, the affected area is of minor scale and size.</p> <p>While the perceptual aspects of the site will be altered, due to the filling of the void, it should be noted that this will be a positive alteration, as an existing 'scar' in the landscape would be removed.</p> <p>The overall scale and the key characteristic of the landscape will not be altered.</p>
<b>Geographical Extent</b>	<p>The effects will be experienced over a relatively large area, up to 7km to the north and west and 10km to the north-west. However, it should be noted that the proposed development will have a positive impact on the landscape.</p>
<b>Duration/ Reversibility</b>	<p>The impact on the landform will be permanent and not reversible. However, it should be noted that in this case reversibility is not desirable, as the proposal will have a positive impact on the landform of the site. The restoration of this final landform to grassland and expected subsequent natural progression to scrub / heathland further underlines the positive effects of the proposed development.</p>
<b>Overall magnitude</b>	<p>The proposed development will result in the filling of an existing large void, which will restore the affected land to a landform similar to what which existed prior to any extraction works taking place. None of the main landscape elements will be removed as part of the works and the key landscape characteristics will not be changed. The effects will be entirely positive.</p> <p>The overall magnitude of the landscape effects, due to the works within the planning application area is therefore assessed as <b>NEGLIGIBLE</b>.</p>

## Significance of Landscape Impact

- 10.89 The sensitivity of the landscape character surrounding the application site was assessed earlier as HIGH. Combining this with the assessed NEGLIGIBLE magnitude of the main landscape effects results in a **MODERATE / MINOR** level of landscape impact (refer to Table 10-4); i.e. a level of impact that is not considered significant. It should also be noted that the resulting impact is positive.
- 10.90 The sensitivity of the individual landscape elements was assessed earlier as MEDIUM. Combining this with the assessed NEGLIGIBLE magnitude of the main landscape effects results in a **MINOR level of landscape impact** (refer to Table 10-4); i.e. a level of impact that is not considered significant.

# LANDSCAPE AND VISUAL 10

## Visual Impacts

### Visual Effects

10.91 The main visual effects, due to the proposed development, will be the visibility of the waste recovery activities within the quarry void for the duration of the filling works, as well as the visibility of the resulting landform, which will ultimately be restored to a heathland / grassland habitat.

### Visual Receptor Sensitivity

10.92 Table 10-10 below judges the susceptibility of the visual receptors within each of the identified Visual Receptor Areas (VRAs), based on Table 10-5 above. The table further describes the value placed on views from within each of VRA and makes a judgement of the overall sensitivity of each VRA.

**Table 10-10**  
**Visual Receptor Sensitivity**

VRA No.	Susceptibility	Value	Overall Sensitivity
1	Receptors of HIGH susceptibility (hill walkers)	No designated views; however views are experienced by hill walkers, who climb the Great Sugar Loaf, in part for views.	HIGH
2	Receptors of MEDIUM (road users)	No protected views or designated scenic routes. Panoramic views of Wicklow Mountains, but not towards Great Sugar Loaf available	MEDIUM
3	Receptors of MEDIUM and HIGH susceptibility (road users, private properties)	Prospect of Special Amenity Value / Interest designation along road. Principal views from properties towards Great Sugar Loaf.	HIGH
4	Receptors of HIGH susceptibility (visitors of tourist attraction)	No designated views; however views experienced by tourists visiting Powerscourt, in part for view from garden towards the Great Sugar Loaf.	HIGH
5	Receptors of MEDIUM and HIGH susceptibility (road users, private properties and hill walkers)	View of Special Amenity Value / Interest designation within area. Principal views from properties towards Great Sugar Loaf	HIGH
6	Receptors of MEDIUM and HIGH susceptibility (road users, private properties)	No protected views or designated scenic routes; Panoramic views of Wicklow Mountains, including distant views of Great Sugar Loaf	MEDIUM
7	Receptors of HIGH susceptibility (hill walkers)	No designated views; however views experienced by hill walkers, who follow the Wicklow Way for its views.	HIGH
8	Receptors of MEDIUM and HIGH susceptibility (road users, private properties)	Prospect of Special Amenity Value / Interest designation along road. Principal (however distant) views from properties towards Great Sugar Loaf	HIGH

# LANDSCAPE AND VISUAL 10

## Magnitude of Change to Viewpoints

10.93 Table 10-11 below describes the magnitude of change to views from within each of the VRAs, in terms of the size and scale, geographical extent and duration / reversibility of the main visual effect. The table also contains a judgement of the overall magnitude of change.

**Table 10-11  
Magnitude of Visual Effects**

VRA No.	Description of Magnitude of Change (VE01)	Overall Magnitude
1	<p><u>Size and Scale:</u> The inside of the western rim of the existing quarry void at Calary is visible in the foreground of views from within VRA1. The majority of this rim has been overgrown with scrub and therefore merges well with the neighbouring fields. The access road into the quarry void is also partially visible in some of the views. Any HGVs accessing the site as part of the waste recovery activities and the final stage of the infill works will be temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void. The visible parts of the proposed development will take up a minor percentage of the overall vast panoramic views available from within this VRA.</p> <p><u>Geographical Extent:</u> Similar views from within a relatively small area, i.e. VRA 1 (refer to Figure 10-2); Direct views; Viewpoints between 200-900m from the planning application boundary (refer to Viewpoint A on Figure 10-3).</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. However, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>SLIGHT during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>

# LANDSCAPE AND VISUAL 10

VRA No.	Description of Magnitude of Change (VE01)	Overall Magnitude
2	<p><u>Size and Scale:</u> Parts of the existing northern quarry face and the existing site access road are visible in the foreground of views from within VRA2. Any HGVs accessing the site as part of the waste recovery activities and the infill works taking place close to the northern quarry face will be temporarily visible in these views. On completion of the works and restoration of the site to a heathland / grassland habitat, the existing quarry face will be fully screened and the landform within the application site will be at a similar level as the adjoining land. The access / gate will be the only reminder of previous use of the site.</p> <p>All works will be contained within the existing void. The visible parts of the proposed development will take up a small percentage of the overall views along the R755, the main focus of which is to the west, away from the site.</p> <p><u>Geographical Extent:</u> Similar views from within a very small area, i.e. VRA 2 (refer to Figure 10-2); Views at 45 degree angles for road users; Viewpoints between 0-100m from the site entrance (refer to Viewpoint B on Figure 10-3).</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>SLIGHT during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>
3	<p><u>Size and Scale:</u> The existing eastern quarry face is visible in the middle ground of views from within VRA3, surrounded by a mixture of pasture fields, scrub and heathland. Any HGVs travelling along the R755 as part of the waste recovery activities and the final stages of the infill works will be temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void and will not affect the skyline. The visible parts of the proposed development will take up a small percentage of the overall panoramic views available from within this VRA. The works will take place at the foot of the Great Sugar Loaf and will not therefore distract from views of this distinctive highpoint.</p> <p><u>Geographical Extent:</u> Similar views from within VRA 3 (refer to Figure 10-2); Views at 45-90 degree angles for road users and some direct views from private properties; Viewpoints between 600-1,500m from the planning application boundary (refer to Viewpoints D &amp; E on Figure 10-4).</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>MODERATE during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>



# LANDSCAPE AND VISUAL 10

VRA No.	Description of Magnitude of Change (VE01)	Overall Magnitude
4	<p><b>Size and Scale:</b> The top section of the existing eastern quarry face at Calary is visible in profile in the background at the foot of the Great Sugar Loaf in views from within VRA4. The profile of the quarry face breaks the otherwise smoothly sloping skyline slightly. However, unless one is aware of the presence of the quarry, it is likely to go unnoticed, as the focus of the view is the distinct shape of tip of the Sugar Loaf. The final stage of the infill works will be distantly and temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, the skyline will be restored to a smoothly running line and no indication of the previous use as a quarry or waste recovery facility will remain. All works will be contained within the existing void, the visible parts of which takes up a minor percentage of the overall panoramic views available from within this VRA.</p> <p><b>Geographical Extent:</b> Similar views from within a relatively small area, i.e. VRA 4 (refer to Figure 10-2); Views at 90 degree angles for road users and direct views for pedestrian visitors of Powerscourt Estate and Gardens; Viewpoints between 3.4-3.6km from the planning application boundary (refer to Viewpoint I on Figure 10-5).</p> <p><b>Duration/Reversibility:</b> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case as the resultant landform will have a positive impact on existing views.</p>	<p>SLIGHT during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>
5	<p><b>Size and Scale:</b> The existing eastern quarry face is visible in the background of views from within VRA5, surrounded by a mixture of pasture fields, scrub and heathland. Any HGVs travelling along the R755 as part of the waste recovery activities and the final stages of the infill works will be distantly and temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void and will not affect the skyline. The visible parts of the proposed development will take up a very small percentage of the overall panoramic views available from within this VRA. The works will take place at the foot of the Great Sugar Loaf and will not therefore distract from the views of this distinctive highpoint.</p> <p><b>Geographical Extent:</b> Similar views from along approximately 1.8km of road and 1.7km of the Wicklow Way, i.e. VRA 5 (refer to Figure 10-2); Views at 45 degree angles for road users and direct views for hill walkers; Viewpoints between 4.1-7km from the planning application boundary (refer to Viewpoint H on Figure 10-5).</p> <p><b>Duration/Reversibility:</b> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>SLIGHT during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>

# LANDSCAPE AND VISUAL 10

VRA No.	Description of Magnitude of Change (VE01)	Overall Magnitude
6	<p><u>Size and Scale:</u> The top section of the existing eastern quarry face at Calary is very distantly visible in profile in the background at the foot of the Great Sugar Loaf in views from within VRA6. Unless one is aware of the presence of the quarry, it is likely to go unnoticed, as the focus of the view is the distinct shape of tip of the Sugar Loaf. The final stage of the infill works may be very distantly and temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void, the visible parts of which takes up a minor percentage of the overall panoramic views available from within this VRA.</p> <p><u>Geographical Extent:</u> Similar views from within a very small area, i.e. VRA 6 (refer to Figure 10-2); Views at 45 degree angles for road users and some direct views from private properties; Viewpoints between 6.1-6.6km from the planning application boundary.</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>NEGLIGIBLE during the waste recovery activities, and</p> <p>NEGLIGIBLE on completion of the works.</p>
7	<p><u>Size and Scale:</u> The existing eastern quarry face is visible in the background of views from within VRA7, surrounded by a mixture of pasture fields, scrub and heathland. Any HGVs travelling along the R755 as part of the waste recovery activities and the final stages of the infill works will be distantly and temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void and will not affect the skyline. The visible parts of the proposed development will take up a very small percentage of the overall panoramic views available from within this VRA. The works will take place at the foot of the Great Sugar Loaf and will not therefore distract from the views of this distinctive highpoint.</p> <p><u>Geographical Extent:</u> Similar views from approximately 6km of public footpaths, i.e. VRA 7 (refer to Figure 10-2); Direct views; Viewpoints between 2.7-5.6km from the planning application.</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>SLIGHT during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>

# LANDSCAPE AND VISUAL 10

VRA No.	Description of Magnitude of Change (VE01)	Overall Magnitude
8	<p><u>Size and Scale:</u> The existing eastern quarry face is very distantly visible in the background of views from within VRA8, surrounded by a mixture of pasture fields, scrub and heathland. The final stages of the infill works will be very distantly and temporarily visible. On completion of the works and restoration of the site to a heathland / grassland habitat, it will be seen as a continuation of the surrounding fields and no indication of the previous use as a quarry or waste recovery facility will remain.</p> <p>All works will be contained within the existing void and will not affect the skyline. The distantly visible parts of the proposed development will take up a minute percentage of the overall panoramic views available from within this VRA. The works will take place at the foot of the Great Sugar Loaf and will not therefore distract from the views of this distinctive highpoint.</p> <p><u>Geographical Extent:</u> Similar views from along approximately 4.5km of road, i.e. VRA 8 (refer to Figure 10-2); Views at 0-45 degree angles for road users and some direct views from private properties; Viewpoints between 8.3-11.5km from the planning application boundary (refer to Viewpoint F on Figure 10-4).</p> <p><u>Duration/Reversibility:</u> The waste recovery facility could be operated for up to 15 years, depending on the availability of material. On completion of the works the final landform would be permanent and not reversible. As mentioned above, it should be noted that reversibility is not desirable in this case, as the resultant landform will have a positive impact on existing views.</p>	<p>NEGLIGIBLE during the waste recovery activities, reducing to</p> <p>NEGLIGIBLE on completion of the works.</p>

## Significance of Visual Impact

- 10.94 Based on Table 10-7 above, the sensitivity of each visual receptor area was combined with the magnitude of the main visual effect to arrive at the significance of the visual effect. Table 10-12 indicates the significance of effects for the duration of the waste recovery works and Table 10-13 the significance on completion of these works.
- 10.95 Table 10-12 shows that the majority of (temporary) visual impacts during the waste recovery period range from minor to moderate. One visual receptor area, i.e. VRA3 located on the northern slopes of Long Hill will experience temporary major / moderate impact, due to the close distance to and direct views into the application site.
- 10.96 While this impact could be regarded as significant, it should be recognised that it is principally associated with backfilling activities in the final years of operation (when fill levels are close to the top of the eastern quarry face) and with ongoing, intermitted traffic movement along the existing R755 Regional Road, into and out of the application site (as previously occurred when the quarry was operational).
- 10.97 Table 10-13 shows that all visual impacts will improve to moderate / minor or less on completion of the waste recovery works. It is again emphasised that the resultant permanent visual impact will be positive for all views.

# LANDSCAPE AND VISUAL 10

**Table 10-12**  
**Significance of Visual Effects (during Waste Recovery Operations)**

VRA No.	Overall Sensitivity	Overall Magnitude	Significance
1	HIGH	SLIGHT	MODERATE
2	MEDIUM	SLIGHT	MODERATE / MINOR
3	HIGH	MODERATE	MAJOR / MODERATE
4	HIGH	SLIGHT	MODERATE
5	HIGH	SLIGHT	MODERATE
6	MEDIUM	NEGLIGIBLE	MINOR
7	HIGH	SLIGHT	MODERATE
8	HIGH	NEGLIGIBLE	MODERATE / MINOR

**Table 10-13**  
**Significance of Visual Effects (At End of Waste Recovery Operations)**

VRA No.	Overall Sensitivity	Overall Magnitude	Significance
1	HIGH	NEGLIGIBLE	MODERATE / MINOR
2	MEDIUM	NEGLIGIBLE	MINOR
3	HIGH	NEGLIGIBLE	MODERATE / MINOR
4	HIGH	NEGLIGIBLE	MODERATE / MINOR
5	HIGH	NEGLIGIBLE	MODERATE / MINOR
6	MEDIUM	NEGLIGIBLE	MINOR
7	HIGH	NEGLIGIBLE	MODERATE / MINOR
8	HIGH	NEGLIGIBLE	MODERATE / MINOR

## Impacts on Landscape / Planning Designations

### *Inert Soil Waste Recovery Facility*

10.98 The above assessment has indicated that there will be no permanent negative impact on the landscape surrounding the proposed waste recovery site, nor will there be any interference with any protected view or prospect or important tourist site.

10.99 The impact assessment indicates that there will be a temporary major / moderate negative visual impact on the views for a small number of local residents to the west of the application site. It is nonetheless considered that such impact is acceptable in view of the resultant long-term positive impact of the proposed development.

10.100 It is therefore considered that the proposed development is located at an appropriate location, in line with the requirements set out in Section 13.8.5 of the current WCDP (on Construction and Demolition Waste Facilities)

# LANDSCAPE AND VISUAL 10

## *Landscape*

10.101 As required by Section 17.9.1 of the current WCDP (on Landscape Characterisation), the proposed development, which is located within an AONB zone, is accompanied by this Visual Impact Assessment. This assessment includes an evaluation of the visibility and prominence of the proposed development, a series of photos from clearly identified vantage points and an assessment of the impacts on listed views / prospects (see below) and the landscape character.

## *Views and Prospects*

10.102 With the exception of the temporary negative major / moderate visual impact on Prospect No. 8, Table 10-14 below indicates that there will be moderate or less visual impact on protected views and prospects within the study area (in both the temporary and permanent case). It is again emphasised that the resulting visual impacts, on completion of all waste recovery works, will be moderate / minor or less and most importantly positive in nature.

10.103 Furthermore, the proposed development will neither obstruct, nor form an obtrusive feature in any views of the Great Sugar Loaf. It is therefore considered that the proposed development is in line with the requirements set out in Section 17.9.2 of the current WCDP (on Views and Prospects).

**Table 10-14**  
**Visual Impact on Views and Prospects**

<b>View / Prospect No.</b>	<b>Visibility of Application Site</b>	<b>Significance of Visual Impact</b>
<b>View 1</b>	No, as located at the foot of the Great Sugar Loaf and screened by intervening vegetation	NONE
<b>View 2</b>	Yes, refer to Viewpoint H on Figure 10-5 and the descriptions for VRA 5 above.	MODERATE reducing to MODERATE / MINOR and POSITIVE on completion of all works.
<b>Prospect 1</b>	No, as located at the foot of the Great Sugar Loaf and screened by intervening topography (refer to Viewpoint G on Figure 10-5)	NONE
<b>Prospect 2</b>	Yes, refer to Viewpoint F on Figure 10-4 and the descriptions for VRA 8 above.	MODERATE / MINOR and NEGATIVE improving to POSITIVE on completion of works
<b>Prospect 3</b>	No, as located at the foot of the Great Sugar Loaf and screened by intervening topography	NONE
<b>Prospect 8</b>	Yes, refer to Viewpoints D and E on Figure 10-4 and the descriptions for VRA 3 above.	MAJOR / MODERATE and NEGATIVE improving to MODERATE / MINOR and POSITIVE on completion of all works.

# LANDSCAPE AND VISUAL 10

View / Prospect No.	Visibility of Application Site	Significance of Visual Impact
<b>Prospect 9</b>	No, as located at the foot of the Great Sugar Loaf and screened by intervening vegetation	NONE
<b>Prospect 10</b>	No, as located at the foot of the Great Sugar Loaf and screened by intervening vegetation (refer to Viewpoint C on Figure 10-3)	NONE
<b>Prospect 17</b>	Yes, refer to Viewpoint F on Figure 10-4 and the descriptions for VRA 8 above.	MODERATE / MINOR (refer to Prospect 2)

## Do-nothing Scenario

10.104 If no works within the planning application area were carried out, the existing quarry faces would remain visible at the foot of the Great Sugar Loaf. While the rim of the quarry void is likely to become further overgrown with scrub, the faces are likely to remain bare and therefore remain visible, due to the contrast of their greyish colour compared with the green shades of the surrounding fields.

## MITIGATION MEASURES

10.105 The main mitigating factor is the proposed development itself, as it will remove an existing 'scar' within this highly scenic landscape, by infilling the existing quarry void to former ground levels, to merge with the surrounding topography.

10.106 It is proposed to restore the resulting landform to grassland, which is expected to naturally evolve into a scrub and/or heathland habitat, similar to the adjoining land and will therefore fully merge with the surrounding landscape. Refer to Chapter 2 of the EIS (and Figures 2-10 and 2-11) for more details on the restoration scheme.

## RESIDUAL IMPACT ASSESSMENT

10.107 The assessment has found that overall the proposed development will have moderate/minor landscape impact on the character of the landscape within the study area and minor impact on the individual landscape elements. It should be noted that the resulting impact on completion of all waste recovery activities will be positive, due to the restoration of the original landform and the creation of additional natural habitats.

10.108 The visual impact, due to the proposed development, will range from none for the majority of views within the study area, to moderate, to major/moderate and negative for a very limited number of views from locations less than 2km to the west of the application site.

10.109 All visual impacts will reduce to moderate / minor or less, on completion of all works and will be positive in nature, as the application site will ultimately be fully backfilled and integrated into the surrounding landscape.

## REFERENCES

**The Landscape Institute with the Institute of Environmental Management and Assessment (2013)** Guidelines for Landscape and Visual Impact Assessment, Third Edition, Routledge

**The Landscape Institute (March 2011)** Advice Note 01/11 – Photography and photomontage in landscape and visual assessment, The Landscape Institute

**CAAS Environmental Services Limited on behalf of the Environmental Protection Agency (EPA) (March 2002)** Guidelines on the Information to be contained in Environmental Impact Statements, EPA Ireland

**CAAS Environmental Services Limited on behalf of the Environmental Protection Agency (EPA) (September 2003)** Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), EPA Ireland

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## FIGURES

Figure 10-1  
Landscape Designations

Figure 10-2  
Zone of Theoretical Visibility (ZTV) Map & Viewpoint Locations

Figure 10-3  
Viewpoints A, B and C

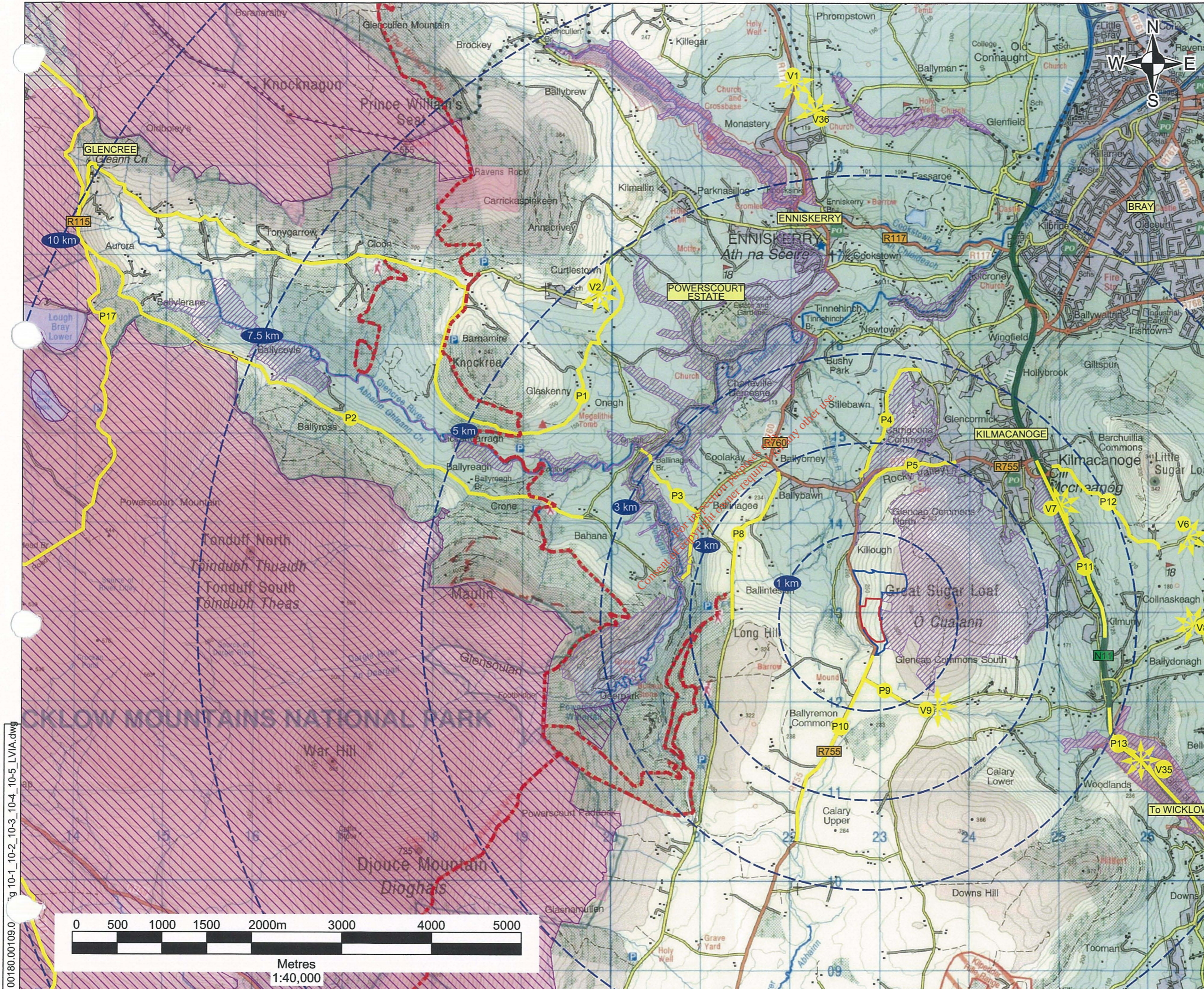
Figure 10-4  
Viewpoints D, E and F

Figure 10-5  
Viewpoints G, H and I

Figure 10-6  
Viewpoint A : Sketch Photomontage

Figure 10-7  
Viewpoint E : Sketch Photomontage





**NOTES**

- EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 56
- ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

**LEGEND**

- ROADSTONE LTD. LAND INTEREST
- PLANNING APPLICATION AREA
- APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE

**LANDSCAPE DESIGNATIONS:**

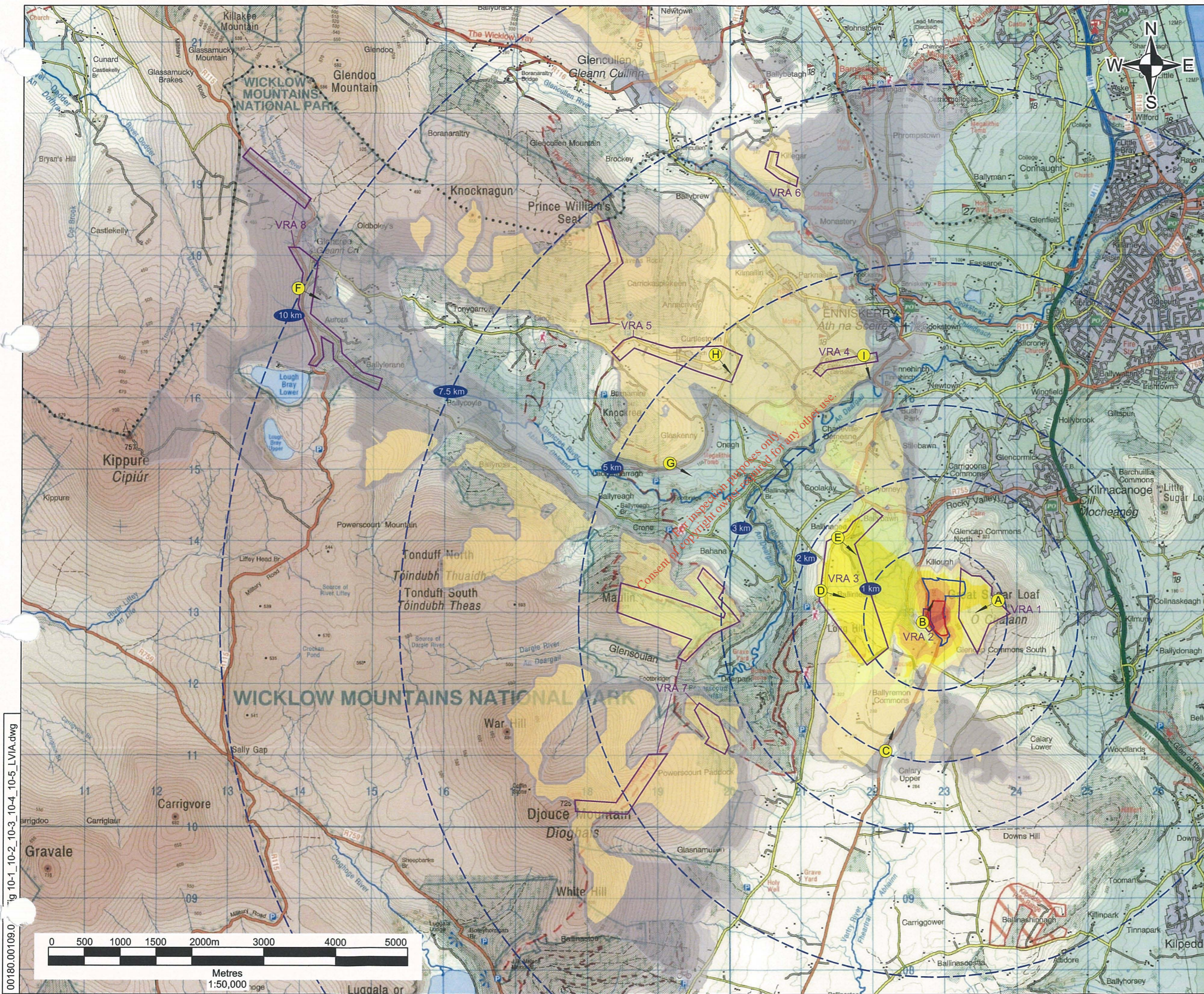
- VIEWS OF SPECIAL AMENITY VALUE OR SPECIAL INTEREST (Wicklow County Development Plan 2010-2016)
- PROSPECTS OF SPECIAL AMENITY VALUE OR SPECIAL INTEREST (Wicklow County Development Plan 2010-2016)
- WAYMARKED WALKING TRAILS
- SPECIAL AREAS OF CONSERVATION (SACs)
- SPECIAL PROTECTION AREAS (SPAs)
- PROPOSED NATURAL HERITAGE AREAS (pNHAs)

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**ENVIRONMENTAL IMPACT STATEMENT**  
**INERT SOIL WASTE RECOVERY FACILITY**  
 CALARY QUARRY,  
 KILMACANOGE, CO. WICKLOW  
**LANDSCAPE DESIGNATIONS**  
**FIGURE 10-1**

Scale: 1:40,000 @ A3      Date: MAY 2016

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**NOTES**  
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 56  
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

**LEGEND**

- ROADSTONE LTD. LAND INTEREST
- PLANNING APPLICATION AREA
- VIEWPOINT LOCATIONS
- APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE
- VISUAL RECEPTOR AREAS (I.E. AREAS FROM WHERE THE PLANNING APPLICATION AREA IS ACTUALLY AND PUBLICLY VISIBLE)

**VERTICAL SUBTENDED ANGLES VISIBLE (OF THE EXISTING QUARRY DEVELOPMENT):**

- SUBTENDED VERTICAL ANGLE GREATER THAN 25.6 DEGREES
- SUBTENDED VERTICAL ANGLE 12.8 TO 25.6 DEGREES
- SUBTENDED VERTICAL ANGLE 6.4 TO 12.8 DEGREES
- SUBTENDED VERTICAL ANGLE 3.2 TO 6.4 DEGREES
- SUBTENDED VERTICAL ANGLE 1.6 TO 3.2 DEGREES
- SUBTENDED VERTICAL ANGLE 0.8 TO 1.6 DEGREES
- SUBTENDED VERTICAL ANGLE 0.4 TO 0.8 DEGREES
- SUBTENDED VERTICAL ANGLE 0.2 TO 0.4 DEGREES
- SUBTENDED VERTICAL ANGLE 0.1 TO 0.2 DEGREES
- SUBTENDED VERTICAL ANGLE LESS THAN 0.1 DEGREES
- NO THEORETICAL VISIBILITY

**NOTE:** Vegetation cover and built structures are not taken into account as part of the ZTV calculation process. Areas in grey (i.e. less than 0.4 degrees) tend to be screened by hedgerows and vegetation, if present. Please refer to Appendix 10-1 of the EIS for the ZTV methodology.

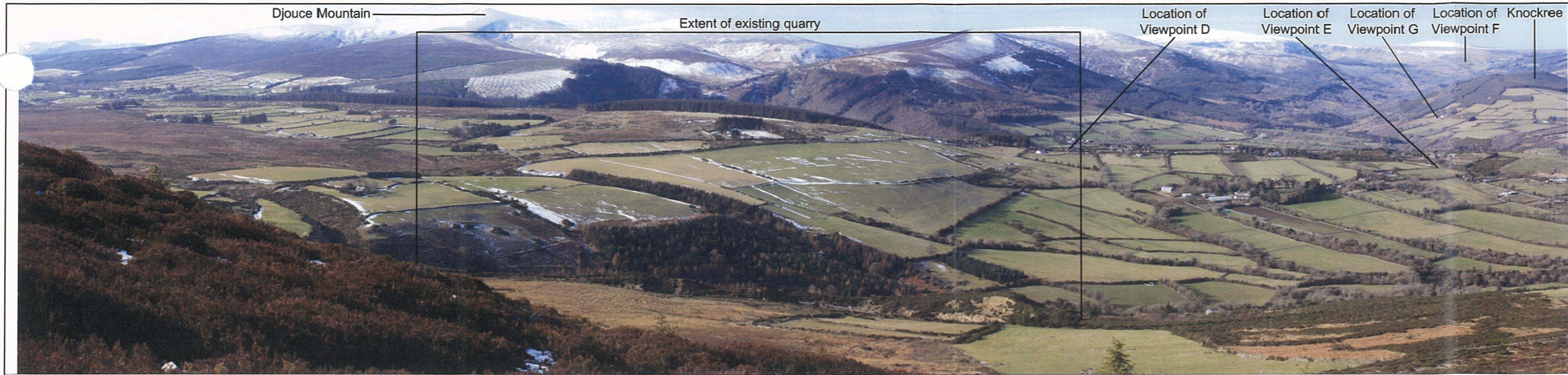
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 ZONE OF THEORETICAL VISIBILITY (ZTV) MAP**

**FIGURE 10-2**

Scale: 1:50,000 @ A3      Date: MAY 2016

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**NOTES**

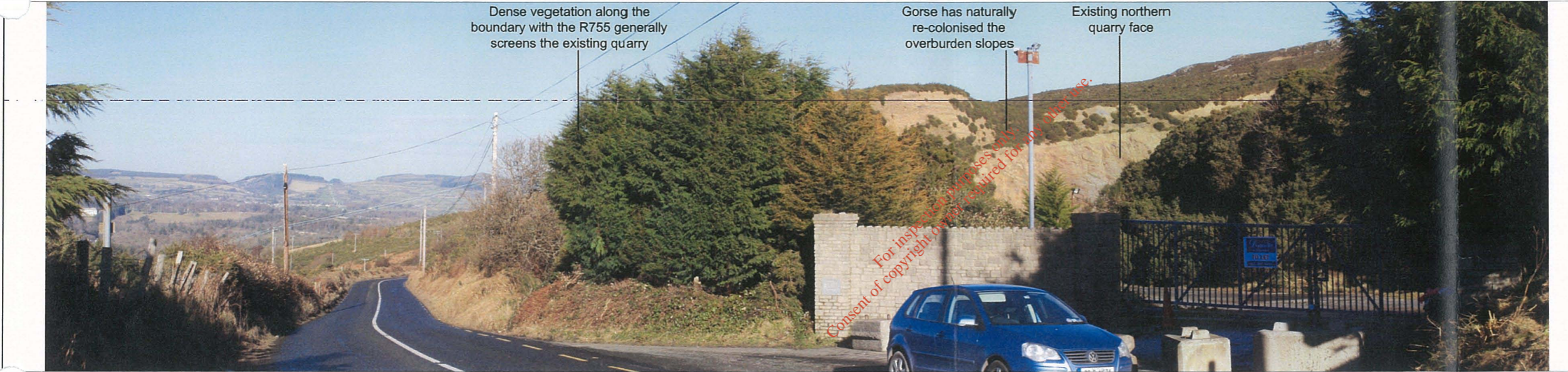
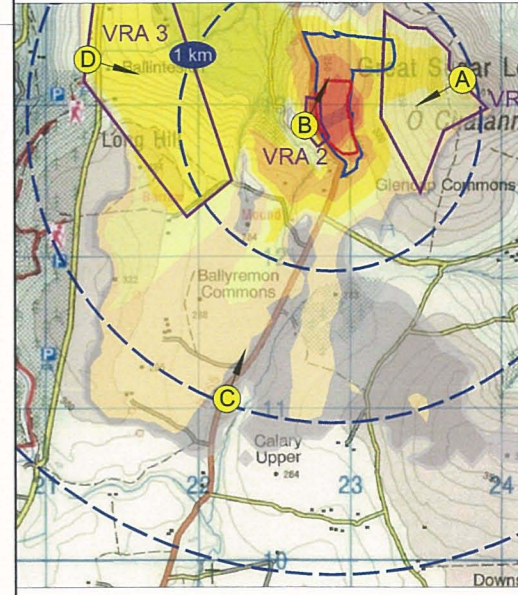
- EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 56
- ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

**LEGEND**

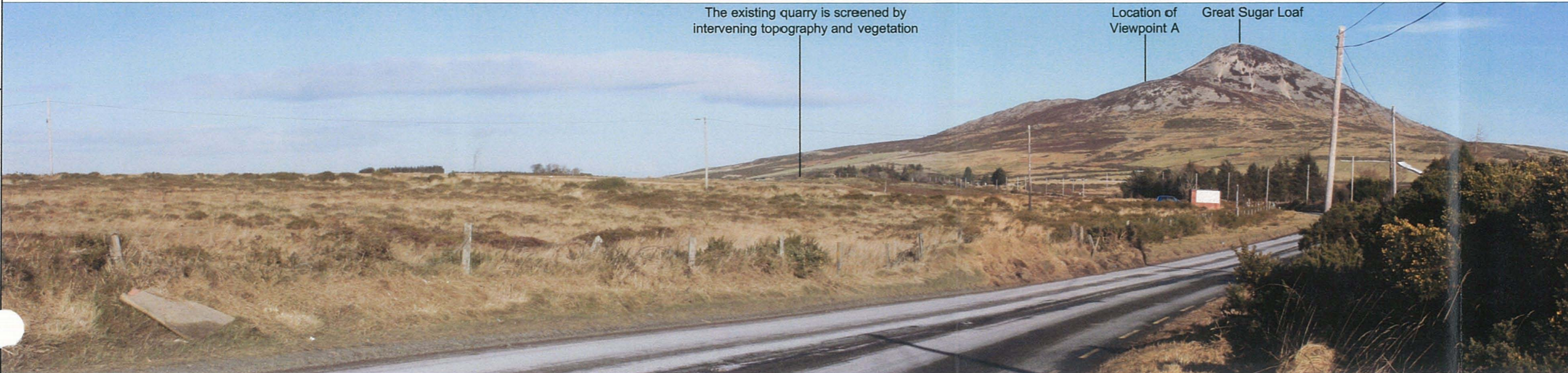
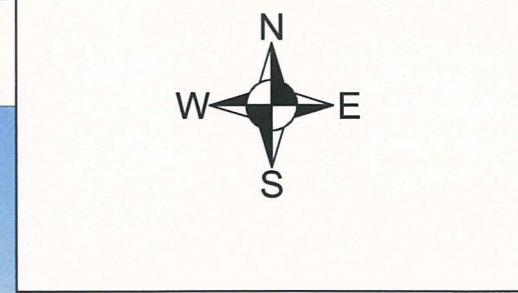
- ROADSTONE LTD. LAND INTEREST
- PLANNING APPLICATION AREA
- VIEWPOINT LOCATIONS
- APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE

**VIEWPOINT A: Western flank of the Great Sugar Loaf (just below final ascend)**  
 Grid Reference (ITM): 723563:713156 Elevation: 440m Distance from planning application boundary: 650m Direction of View: Southwest  
 Description: The inside of the screening berms/retained rock along the western boundary of the existing quarry are visible in a number of views from the tracks on the western slopes of the Great Sugar Loaf. Gorse has re-colonised these berms in recent years and therefore merge with the surrounding area. A small section of the site access road is also visible, however the quarry faces are screened, due to topography. Once filled and restored the site will be seen as a continuation of the surrounding fields.

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



**VIEWPOINT B: R755 at the entrance to Calary Quarry**  
 Grid Reference (ITM): 722642:712977 Elevation: 245m Distance from planning application boundary: 10m Direction of View: Northeast  
 Description: A small section of the existing northern quarry face is visible in views from this road. Dense vegetation along the boundary with the R755 screens all other parts of the existing quarry in views from this road. Once filled, the currently visible quarry face will be completely screened. The surface will be restored to scrub/heath land similar to the surrounding fields. The site entrance and part of the access road would be retained, therefore the appearance at the site entrance would remain largely unchanged.



**VIEWPOINT C: R755 at Calary Upper (Designated Prospect No. 10)**  
 Grid Reference (ITM): 722097:711178 Elevation: 280m Distance from planning application boundary: 1500m Direction of View: Northeast  
 Description: The existing Calary quarry is fully screened by intervening topography and/or vegetation in all views from the R755, apart from in the vicinity of the site entrance (refer to Viewpoint B). The waste recovery activities within the quarry void will therefore not have a visual effect on views from this road. Any HGV accessing the application site as part of the soil recovery activities, will result in some visual effects along the R755, however this is more likely for the section of this road to the north of the site entrance.

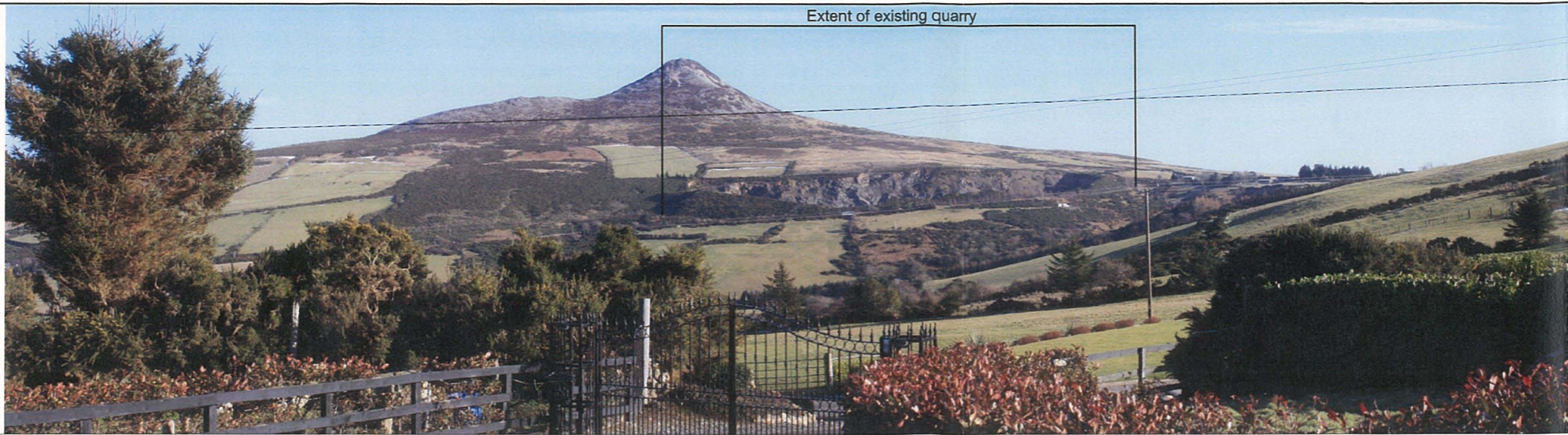
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**VIEWPOINTS A, B & C**

**FIGURE 10-3**

Scale N/A Date MAY 2016

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**VIEWPOINT D: Local Road at Ballintesklin (Designated Prospect No. 8)**

Grid Reference (ITM): **721252:713314** Elevation: **250m** Distance from planning application boundary: **1400m** Direction of View: **Southeast**

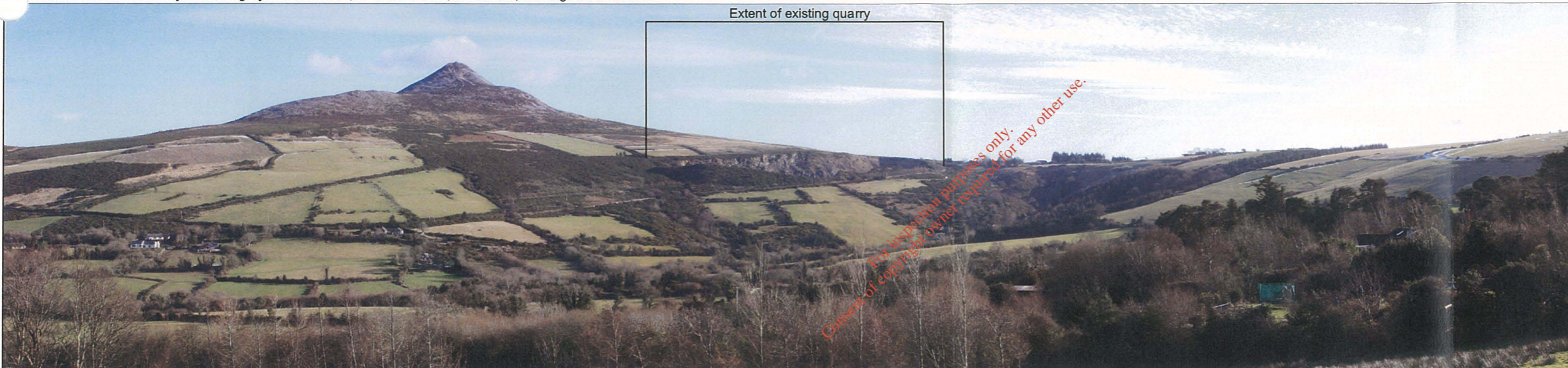
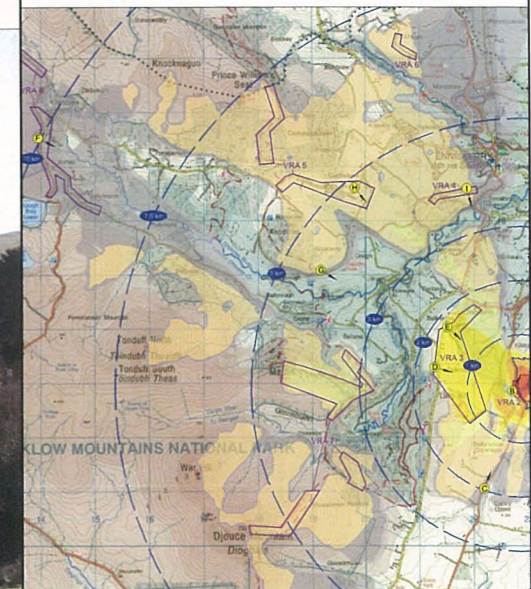
**Description:** The existing eastern quarry face is fairly openly visible in views from a number of locations along the local road to the northwest of the highpoint at Long Hill (also refer to Viewpoint E below). A number of residential properties in the vicinity of this viewpoint experience similar views. The soil recovery activities will become temporarily visible, as the height of the fill increases. On completion of all works and restoration of the surface to scrub/heathland, the application site will fully merge with the surrounding area. Views from the Wicklow Way ascending Djouce Mountain, where available, are similar, although more distant.

**NOTES**  
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 56  
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

**LEGEND**

-  ROADSTONE LTD. LAND INTEREST
-  PLANNING APPLICATION AREA
-  VIEWPOINT LOCATIONS
-  APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE

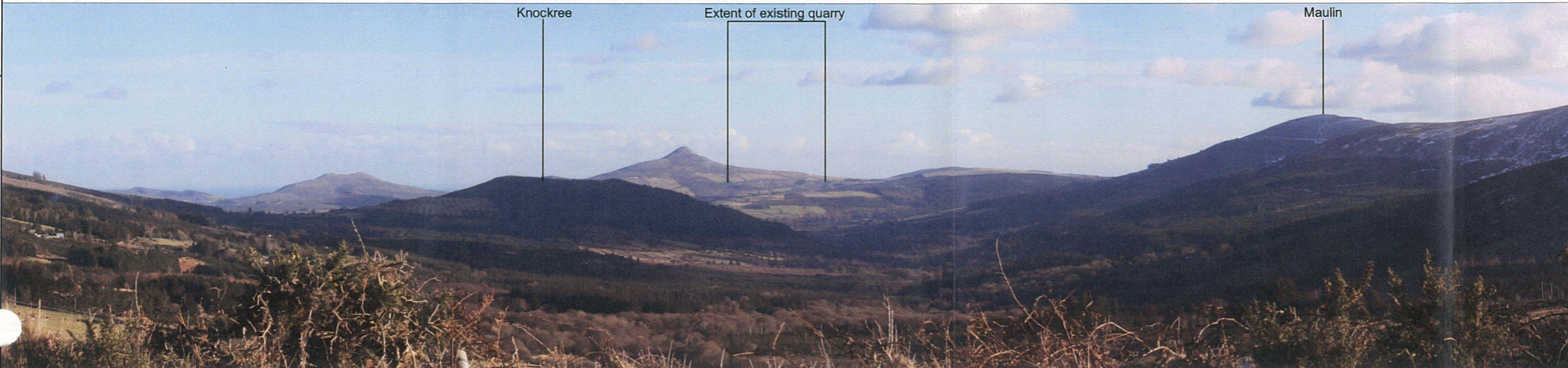
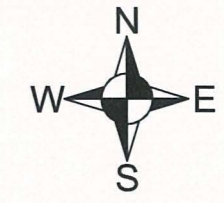
**VIEWPOINT LOCATION MAP (1:140,000 @ A3)**



**VIEWPOINT E: Local Road at Ballinagee (Designated Prospect No. 8)**

Grid Reference (ITM): **721474:714022** Elevation: **210m** Distance from planning application boundary: **1400m** Direction of View: **Southeast**

**Description:** Similar to Viewpoint D above, the existing eastern quarry face is fairly openly visible in views from a number of locations along the local road at Ballinagee. A number of residential properties in the vicinity of this viewpoint experience similar views. The soil recovery activities will become temporarily visible, as the height of the fill increases. On completion of all works and restoration of the surface to scrub/heathland, the application site will fully merge with the surrounding area.



**VIEWPOINT F: R115 (Military Road) at Glencree (Designated Prospect No. 17)**

Grid Reference (ITM): **713932:717539** Elevation: **360m** Distance from planning application boundary: **9700m** Direction of View: **Southeast**

**Description:** The existing eastern quarry face is very distantly visible at the foot of the Great Sugar Loaf in a number of views from the R115 and adjoining local roads in the vicinity of Glencree. A small number of residential properties in the vicinity of this viewpoint experience similar views. At this distance the soil recovery activities will be barely noticeable. On completion of all works and restoration of the surface to scrub/heathland, the application site will fully merge with the surrounding area.

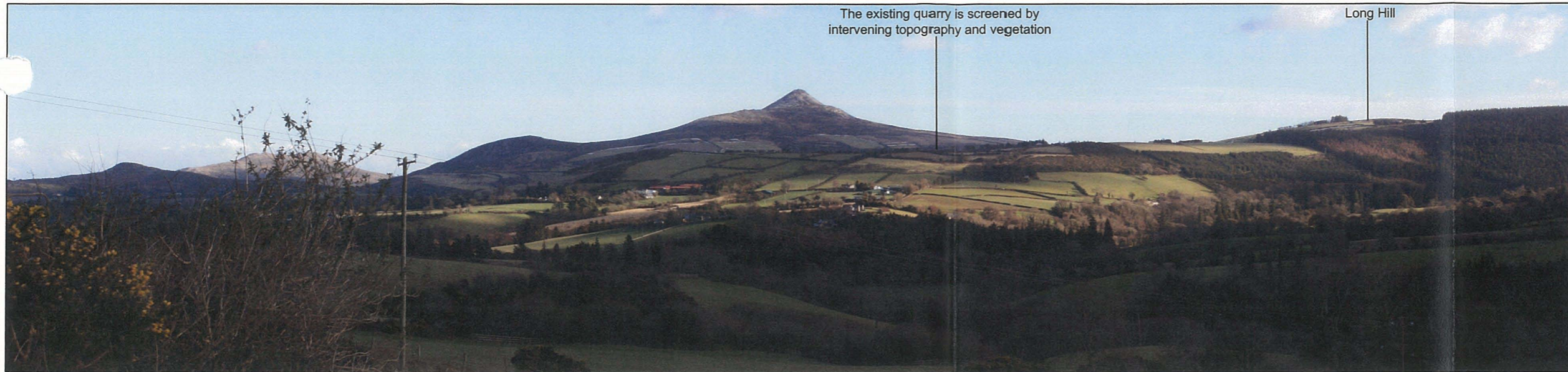
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**VIEWPOINTS D, E & F**

**FIGURE 10-4**

Scale	N/A	Date	MAY 2016
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**NOTES**

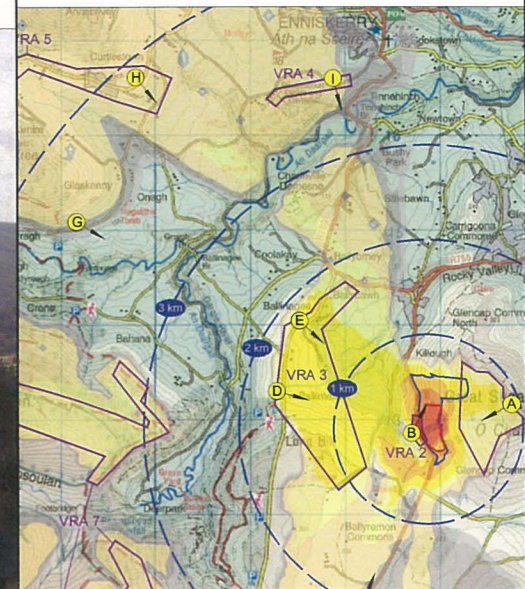
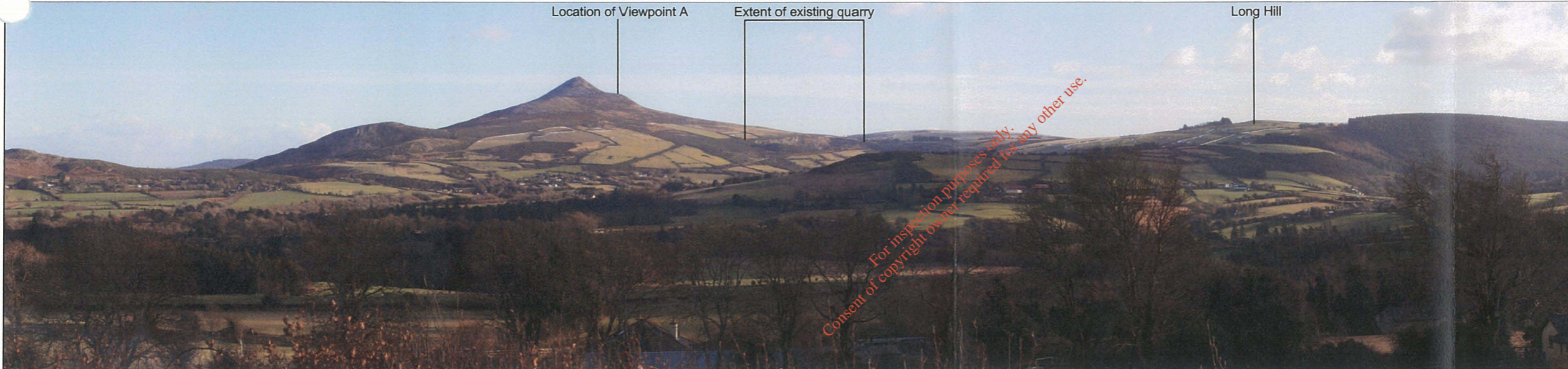
- EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 56
- ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

**LEGEND**

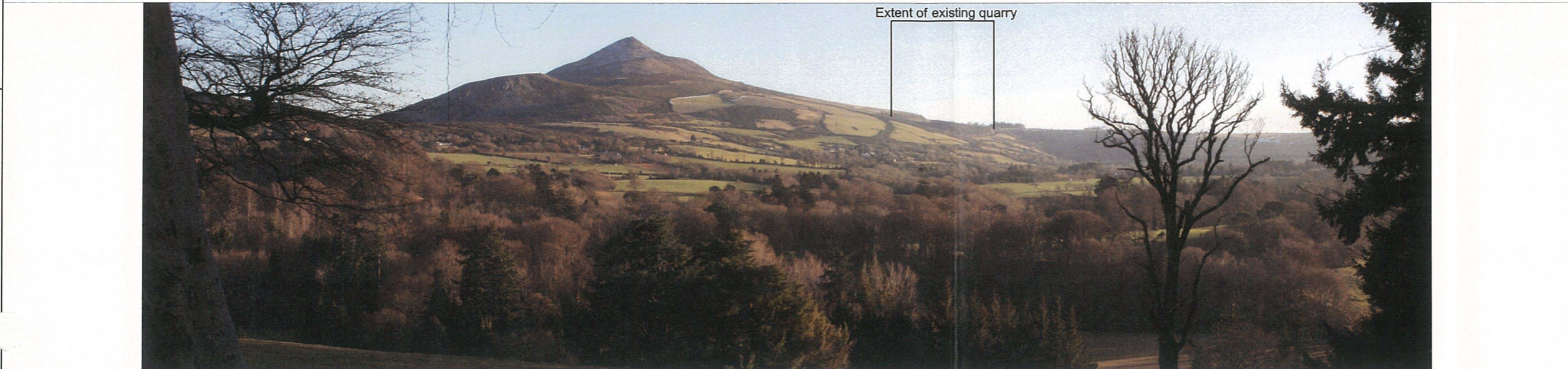
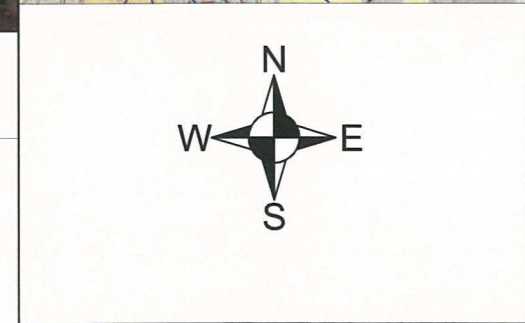
- ROADSTONE LTD. LAND INTEREST
- PLANNING APPLICATION AREA
- VIEWPOINT LOCATIONS
- APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE

**VIEWPOINT G: Local Road circling Knockree, outside Knockree Youth Hostel (Designated Prospect No. 1)**  
 Grid Reference (ITM): 719136:715083 Elevation: 160m Distance from planning application boundary: 4000m Direction of View: Southeast  
 Description: The existing quarry is fully screened by the ridgeline north of Long Hill in views from the local road encircling Knockree. Views from the section of the Wicklow Way passing Knockree are also fully screened, by topography and vegetation. The soil recovery activities within the existing quarry will not have any effect on these views.

VIEWPOINT LOCATION MAP (1:80,000 @ A3)



**VIEWPOINT H: Local Road, just east of Curtlestown (Designated View No. 2)**  
 Grid Reference (ITM): 719748:716587 Elevation: 210m Distance from planning application boundary: 4400m Direction of View: Southwest  
 Description: The existing eastern quarry face is visible in a number of views along the local road in the vicinity of Curtlestown. The soil recovery activities will be temporarily, although distantly, visible in these views. On completion of all works and restoration of the surface to scrub/heathland, the application site will fully merge with the surrounding area. Views from the Wicklow Way descending from Prince William's Seat are similar. However, most potential views are blocked by vegetation (i.e. conifer plantations).



**VIEWPOINT I: Access Road to Powerscourt House & Gardens**  
 Grid Reference (ITM): 721802:716555 Elevation: 130m Distance from planning application boundary: 3400m Direction of View: Southeast  
 Description: The top of the existing eastern quarry face is visible in profile in a number of locations within the Powerscourt Estate. The application site is located at the foot of the Sugarloaf and therefore does not distract from the distinctive highpoint. The filling of the quarry void would however result in a smoother line along skyline and would therefore have a positive effect on this view. Similar although more distant views can be gained from a small number of locations around Killegar, north of Enniskerry.

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**VIEWPOINTS G, H & I**

**FIGURE 10-5**

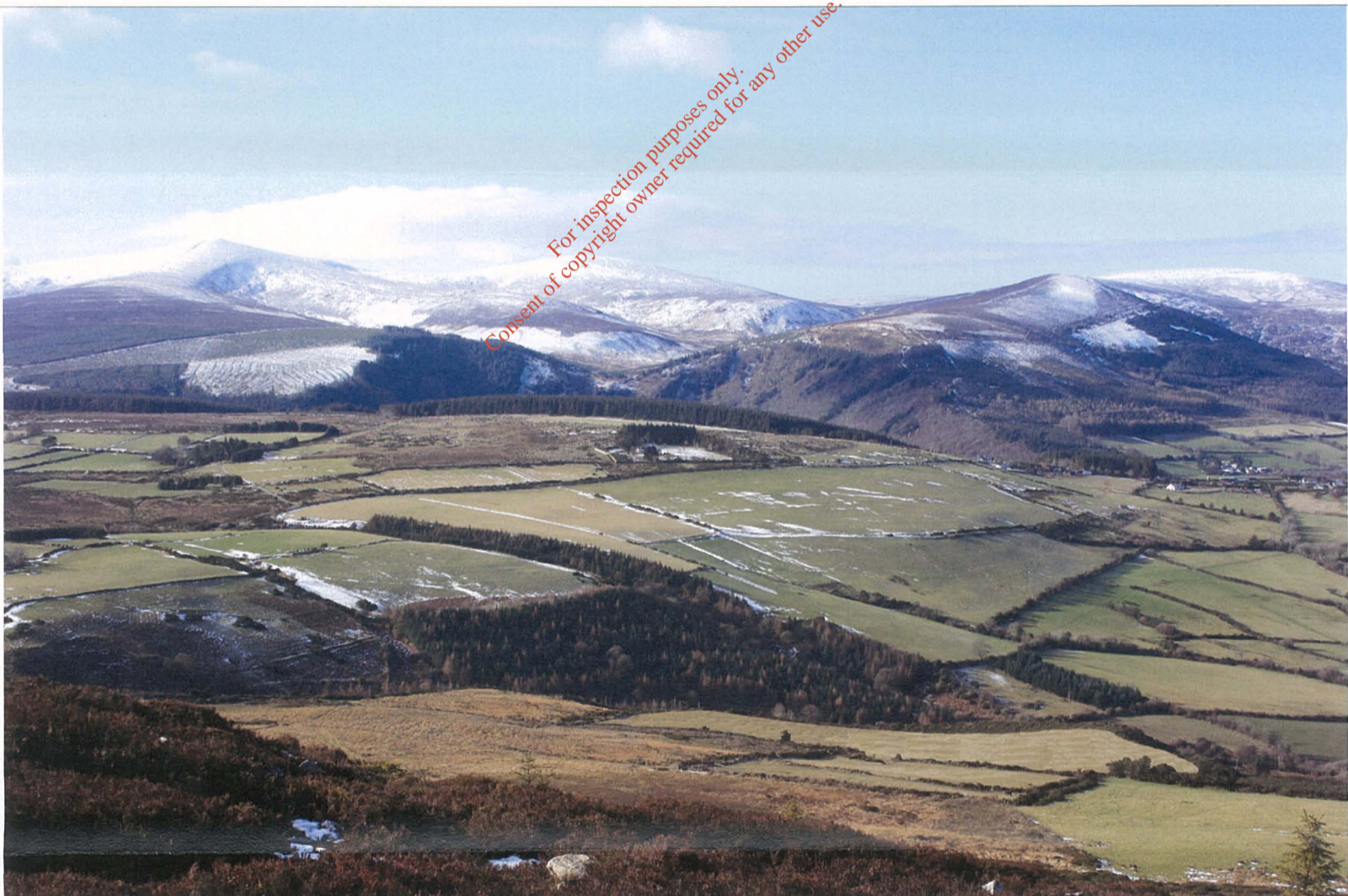
Scale N/A Date MAY 2016

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**VIEWPOINT A: Existing view**




**VIEWPOINT A: View on completion of all restoration works**



Please refer to Figures 10-2 & 10-3 for the location of and further details on Viewpoint A.  
Recommended Viewing Distance: 30cm

00180.007109.0.18.Fig 10-6\_10-7\_PM.dwg

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	ROADSTONE LIMITED <b>ENVIRONMENTAL IMPACT STATEMENT</b> INERT SOIL WASTE RECOVERY FACILITY CALARY QUARRY KILMACANOGE, CO. WICKLOW <b>VIEWPOINT A: SKETCH PHOTOMONTAGE</b>
<b>FIGURE 10-6</b>	
Scale	N/A
Date	MAY 2016

**VIEWPOINT E: Existing view**




**VIEWPOINT E: View on completion of all restoration works**



Please refer to Figures 10-2 & 10-4 for the location of and further details on Viewpoint E.  
Recommended Viewing Distance: 30cm

00180.00109.0.18.Fig 10-6\_10-7\_PM.dwg

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<b>VIEWPOINT E: SKETCH PHOTOMONTAGE</b>	
<b>FIGURE 10-7</b>	
Scale	N/A
Date	MAY 2016

## APPENDIX 10-A ZONE OF THEORETICAL VISIBILITY (ZTV) – METHODOLOGY

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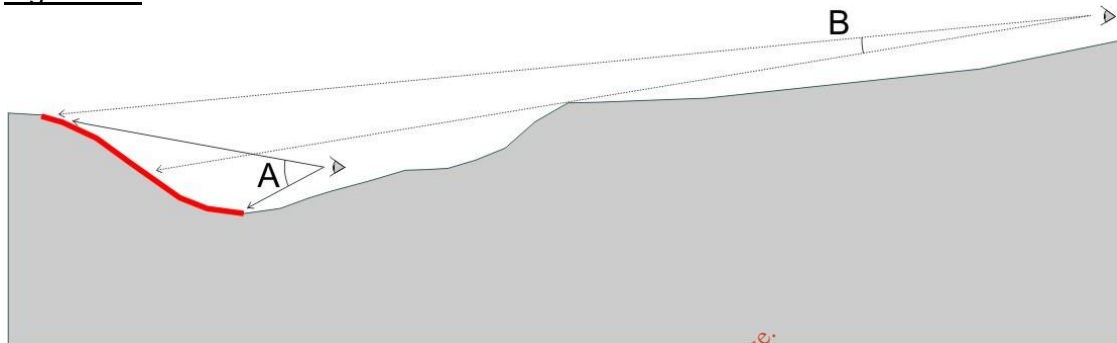


## Zone of Theoretical Visibility (ZTV) Study

A Zone of Theoretical Visibility (ZTV) Study was conducted using the existing contours of the applications area to help identify areas sensitive to visual impacts. This study used the measurement of the vertical subtended angle for its methodology. This method is explained below and illustrated by Figure A-1, below.

When a Target Area (red) is observed from a Viewpoint (A or B) its apparent height can be measured in the form of degrees, to give a Subtended Vertical Angle.

Figure A-1:



The use of the Subtended Vertical Angle in formulating a ZTV has the benefit of automatically reducing values to reflect the distance from the Target Area, and partial screening by intervening landforms. Generally the further the viewpoint is from the Target Area the smaller the Subtended Vertical Angle, reflecting the effect of distance on visual impacts.

Thus in the example section above, Viewpoint A experiences a higher subtended angle due to proximity to the red target area. Viewpoint B has a lower subtended angle due to greater distance from the target area and partial screening by intervening landform.

If the Subtended Vertical Angle is measured from a series of grid points for a particular Target Area, the resultant data can then be used to generate contours. Each contour level representing a certain vertical angle, and thus potential level of visibility.

The subtended vertical angle method of calculating ZTVs using LSS digital terrain modelling software has been proven by field investigation on numerous sites to be an accurate method of predicting areas of potential visibility for on-site investigation.

However, the computer generated ZTV study is undertaken using a bare earth landform to give the worst case scenario. In reality any built structures (settlements, walls etc) or areas of vegetation (woodlands, scrub and hedgerows) will reduce the actual visibility of the target area. Therefore it is necessary to carry out fieldwork to validate the results of the ZTV.