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SUTTLE STONE QUARRIES

SWANWORTH QUARRY EXTENSION

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

January 2018



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Chartered Town Planners

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1. INTRODUCTION

Name and Qualification

- 1.1 This report has been prepared by David Jarvis PPLI, a Chartered Landscape Architect from David Jarvis Associates (DJA) Limited and Past President of the Landscape Institute.
- 1.2 DJA is a firm of planners and landscape architects with 35 years' experience in the planning, assessment, design and implementation of mineral proposals. The firm is a Registered Practice of the Landscape Institute.

Scope

- 1.3 The report represents a preliminary Landscape and Visual Impact Appraisal (LVA) for the proposed extension of the existing Swanworth Quarry. The LVA has been prepared to provide an evidence base for potential inclusion of the extension site within the Pre-Submission Draft of the Bournemouth, Dorset and Poole Minerals Site Plan 2017, and to inform the forthcoming Examination in Public.
- 1.4 Although a significant quantity of work has been done to inform the design of the Swanworth extension, the proposals have not been finalised and the report does not represent a full Landscape and Visual Impact Assessment (LVIA), something that would be submitted as part of a formal planning application.

Background

Site Description

- 1.5 Swanworth Quarry is located within the Purbeck District of Dorset south of the B3069 between the villages of Kingston and Langton Matravers and approximately 500m northwest of Worth Matravers.
- 1.6 The extension is located to the northwest of the existing quarry and separated from it by a coombe. The extension site comprises sections of three agricultural fields (currently arable and pasture) which slope down in a southeasterly direction to the coombe. A section of the Purbeck Way runs through the coombe between Corfe Castle and Chapman's Pool along the coast.
- 1.7 Both the existing and proposed extension are located inside the Dorset Area of Outstanding Natural Beauty (AONB) and the Purbeck Heritage Coast.
- 1.8 The location of the existing quarry and proposed extension are shown in **Figure 1**.

Current Consented Operations

- 1.9 Swanworth Quarry has been operated by Suttle Stone Quarries Ltd since 2011, before which it was operated by Tarmac for approximately 30 years. Active extraction has been taking place at the quarry since the early 1900s, but current planning consent dates from 1994 and was renewed in 2013. Planning permission carries an extensive list of conditions including for the post-operational restoration of the quarry.
- 1.10 Swanworth is a limestone quarry which produces a range of materials including aggregate for use in the local building and construction trades and other products such as gabion stone, rockery stone, agricultural lime and dimension stone. The quarry is the only source of limestone aggregate in Dorset outside of Portland.

2. METHODOLOGY

Published Guidance

- 2.1 This assessment has been prepared in accordance with the published guidance provided by the Institute of Environmental Management and Assessment and the Landscape Institute (IEMA/LI)¹, the Countryside Agency², and the former Department of the Environment, Transport and the Regions (DETR)³. Guidance emphasises the responsibility of the landscape professional carrying out the assessment to ensure that the approach and methodology adopted is appropriate for the particular development to be assessed. A description of the assessment methodology is provided at **Appendix 1**.
- 2.2 Preparation of this assessment included the following key stages:
- Baseline survey and local landscape character assessment;
 - identification of potential effects;
 - identification of landscape and visual receptors;
 - description and quantification of changes to the baseline;
 - contribution to iterative design process;
 - identification of mitigation measures;
 - preparation of landscape strategy;
 - evaluation of predicted effects;
 - landscape and visual assessment of the final scheme design.

Previous Work

- 2.3 This Landscape and Visual Appraisal builds on the existing 'Landscape and Visual Analysis' undertaken by Mullin Design Associates (MDA) in July 2016. The work evaluated the proposed extension from a range of viewpoints, produced a Zone of Theoretical Visibility and a set of photomontages using landform modelling.
- 2.4 Particular focus was placed on visualising and assessing the impact of the proposal from the Purbeck Way adjacent to the extension (Viewpoint 6) throughout the different phases of the development. This is considered to be the most sensitive receptor and where the magnitude of change would be greatest.
- 2.5 The montages and visualisations produced by MDA were verified by DJA and confirmed as being accurate and therefore have been referenced for the more detailed written assessment contained in this appraisal. Additional winter photographs were gathered by DJA, including from several new viewpoints responding to comments from the Dorset AONB Landscape Officer. Given the accuracy of the existing photomontages, the provisional nature of the proposals and the openness and lack of tree cover in the local landscape, it was not considered necessary at this stage to supplement the existing photomontages (taken in summer) with winter photographs.

¹ Institute of Environmental Management and Assessment and the Landscape Institute – 'Guidelines for Landscape and Visual Impact Assessment' Third Edition 2013.

² Countryside Agency and Scottish Natural Heritage – 'Landscape Character Assessment' 2002.

³ Department of the Environment, Transport and the Regions- 'Lighting in the Countryside : Towards Good Practice'.

DJA Field Survey

- 2.6 DJA undertook a site visit and field survey of the local landscape surrounding the existing quarry and proposed extension. The site visits were undertaken on two separate dates in December 2017 and January 2018 in clear conditions suitable for landscape photography.
- 2.7 During the first visit, straw bales were positioned at intervals along the western boundary of the proposed extension in order to provide a visual representation of the boundary limit of the extraction area (given that it runs across an open field).

3. POLICY CONTEXT

Bournemouth, Dorset & Poole Minerals Strategy (2014)

- 3.1 The Bournemouth, Dorset & Poole Minerals Strategy (adopted 2014) sets out the vision, objectives, spatial strategy and policy framework for minerals development in Bournemouth, Dorset and Poole. It considers the need to contribute to national, regional and local mineral requirements and seeks to balance these needs against social, environmental and economic considerations.

Swanworth Quarry

- 3.2 Swanworth Quarry supplies crushed rock to south-eastern Dorset, Purbeck, Bournemouth and Poole. It is an important source of crushed rock, supplying approximately half of the Dorset annual total. It is the only quarry outside Portland with permission for the production of crushed rock. The Mineral Strategy notes that it is the only aggregates quarry on the plateau and that the other, smaller, quarries primarily provide dimension stone.
- 3.3 Swanworth Quarry extension is proposed to be restored to original ground level. This restoration proposal differs from the dimension stone quarries within the limestone plateau which do not use imported fill.

Dorset AONB

- 3.4 The Minerals Strategy highlights the fact that much of the county is designated as Areas of Outstanding Natural Beauty (AONB) due to the quality and variety of the landscape, whilst its long and largely unspoilt coastline is protected as Heritage Coast and a World Heritage Site (with East Devon). In ecological terms, the county has a rich diversity of habitat types, including chalk downland, lowland heath, river valleys, wetland, cliffs and beaches.
- 3.5 The Minerals Strategy notes that quarrying activity has traditionally been carried out across the Purbeck Plateau for centuries and contributes to the local economy and the area's unique sense of place, with the landscape and ecology of the area having been influenced by quarrying historically.
- 3.6 Its cultural value as part of the landscape character of the Purbeck plateau is acknowledged⁴. Quarrying also provides exposures of the Purbeck beds, contributing to enhanced geodiversity and opportunities for scientific study, including through the recovery of fossils.
- 3.7 With reference specifically to landscape impact, paragraph 16.20 of the Mineral Strategy states that:

For good reasons some of the minerals found in Dorset currently are and will continue to be extracted within designated areas..... The Purbeck Stone resource is entirely contained within the AONB. Its extraction contributes to the local economy and to Dorset's unique sense of place.

⁴ Conserving Character: Landscape Character Assessment and Management Guidance for the Dorset AONB (Dorset AONB 2008)

Exceptional Circumstances (landscape)

- 3.8 The National Planning Policy Framework requires that mineral planning authorities refuse permission for major developments in Areas of Outstanding Natural Beauty, except in exceptional circumstances and where it can be demonstrated that such quarries are in the public interest.
- 3.9 As outlined above, Purbeck stone (including crushed) is an important building material, specific to the area. Sourcing crushed rock aggregate from outside the Dorset AONB presents other landscape-related issues.

Pre-Submission Mineral Sites Plan 2017

- 3.10 The Bournemouth, Dorset and Poole Mineral Sites Plan (Pre-submission draft) contains specific site proposals and policies intended to deliver the various strategies for the different mineral types and to maintain mineral production as outlined in the Mineral Strategy adopted in 2014. It also includes other measures to facilitate and control minerals development and the management of land.
- 3.11 Policy MS3 of the Draft Sites Plan relates specifically to crushed rock and Swanworth Quarry:

Policy MS-3: Swanworth Quarry Extension

- 3.12 An extension to Swanworth Quarry in Purbeck (PK16 - see Submission Policies Map - Inset 11) is allocated to contribute to the adequate and steady supply of crushed rock.

Any proposal for the development of this allocation must address the development considerations set out for the site in Appendix A, with particular emphasis on landscape and visual impacts on the Area of Outstanding Natural Beauty as well as any other matters relevant to the development of the allocation, and demonstrate that any adverse impacts will be mitigated to the satisfaction of the Mineral Planning Authority.

This proposed development will only be considered where it has been demonstrated that possible effects (including those related to hydrology, displacement of recreation, species, proximity, land management and restoration) that might arise from their development would not adversely affect the integrity of European and Ramsar sites, either alone or in combination with other plans or projects.

Site Appraisal

- 3.13 Included within the Pre-Submission Minerals Plan, is a Site Assessment for Swanworth Quarry Proposed Extension (PK-16) which qualitatively evaluates the suitability of the site against 25 criteria based on its potential environmental, economic and social impact.
- 3.14 In the section on landscape, the proposed extension is described as having a '*significant adverse impact*' on designated landscapes (Criteria C7) due to its location within the AONB and Heritage Coast. In terms of the landscape capacity to accommodate the proposed development (Criteria C8) it is noted that the site is located within the Purbeck Plateau, described as being an open and predominantly undeveloped landscape.
- 3.15 In the consultee comments section, it is stated by Tony Harris, Landscape Officer for Dorset County Council, that the proposal would have a '*significant adverse impact on the physical landscape, which is highly valued and protected. Proximity to the Purbeck Way and public highways are of key concerns due to visual effects and operational noise. This will result in*

significant adverse impacts on sensitive visual receptors and impact negatively on the tranquillity in this part of the AONB'.

- 3.16 It is noted that the site owner has taken significant steps to mitigate the potential impacts.
- 3.17 The site assessment also incorporates detailed landscape comments from Richard Brown, the Dorset AONB Landscape Officer. The sections of the Site Assessment relevant to landscape consultation are contained in **Appendix 4**.

4. PROPOSED DEVELOPMENT AND MITIGATION MEASURES

- 4.1 The proposed development has gone through a comprehensive series of design iterations led by the desire to minimise environmental impacts.
- 4.2 The proposed extension comprises only the lower parts of three agricultural fields located to the north of the existing quarry and separated from it by a steep-sided coombe; extraction is concentrated in the lower parts of the two most northerly fields. This has been done to minimise visibility of the restored upper slopes.
- 4.3 It is estimated that the extractable reserve for the extension would be approximately 1.7 million tonnes, taking around 13-14 years for extraction at a rate of up to 125,000 tonnes per year. Restoration would be progressive and is expected to be completed by year 20.
- 4.4 The extension site would be accessed from the existing quarry via a bridge with gabion basket abutments constructed over the coombe. A narrow access route would be cut through the first (most southerly field) to reach the main extraction area in the lower parts of the two northerly fields.
- 4.5 The construction of a tunnel over this access cut has been considered, however, this has been discounted after further landscape and visual analysis, which found that a tunnel would serve a very limited role in mitigating the landscape and visual effects. The location of the proposed access point occupies a low position within the coombe and is not visible in the majority of views from the surrounding landscape. Within the coombe itself, it is only from a short section of the Purbeck Way that the crossing point would be visually prominent.
- 4.6 Consideration has been given to reducing the visual effects in the proposed phasing of the extension, which would be worked in a northerly direction in three phases allowing for progressive extraction followed by restoration through infill back to original ground levels. During the first phase, the overburden would be used to create slightly raised landscape bunds around the northern, eastern and southern boundaries.
- 4.7 The overburden is 4-5 metres thick on average (deeper in the northern field) and would be cut to a shallow slope (circa 1 in 5) during soil/overburden stripping and hydro seeded straightaway to ensure the upper levels of the development look green to integrate with the surrounding agricultural land. The quarry operations would then be undertaken well below surrounding ground level, mainly from the floor of the first bench, a further 12 metres down. The in situ overburden slopes above the limestone would, thus, be cut back to soft slopes and grassed; these would represent the upper parts from any potential viewpoint.
- 4.8 The purpose of the low linear bunds is not to 'screen fully' the limited views of the extension – this is not possible without substantial engineering solutions and dense planting which would be highly detrimental to the open character of the AONB – but to replicate the existing scrubby slopes of the adjacent coombe and soften the already limited visual impact. During the design iterations, the overall size of the proposed extension was reduced and location of the western boundary (the upper slopes) moved further downslope to further reduce the visual effects.
- 4.9 Through limiting the footprint of the extraction area to the lower parts of the fields and undertaking restoration back to original ground level, the landscape and visual impact of quarrying the extension can be reduced during quarrying or wholly mitigated or removed on completion..
- 4.10 The extension site is currently in agricultural use. Restoration to original ground level affords the opportunity to either revert the site to agriculture or a combination of uses including those which benefit biodiversity, geodiversity and public access (as envisaged in the restoration concept for the

existing quarry – which has succeeded in creating an area of valuable species-rich limestone grassland).

4.11 In summary, the key landscape mitigation measures include the following seven elements.

- I. Only the lower parts of the three fields would be extracted.
- II. Extraction will be in a sequence moving northwards to minimise visual impacts.
- III. Progressive restoration would be undertaken of the western higher slopes (particularly the in-situ overburden slopes) at the earliest opportunity.
- IV. The creation of low small linear bunds along the northern and eastern boundaries to reinforce the existing wall, fence and hedgerow structure. These bunds are to be rough grassed and scrub and are designed not to be visually intrusive but rather reflect the character of the existing coombe slopes
- V. A bridge using gabion basket abutments would be built to cross the Purbeck Way linking the consented quarry with the proposed extension and providing the means of access for transportation of excavated material.
- VI. An access cut would be created which will contain vehicle movements and reflect the character of nearby coombes with its native herb/shrub/tree planting on its upper levels/slopes.
- VII. The proposed extraction area would be progressively filled to existing contours to remove completely any long term/permanent landscape or visual impact. Potential post-restoration land use is expected to be a combination of agricultural and habitat creation for nature conservation.

5. LANDSCAPE ASSESSMENT OF THE EXISTING SITE AND CONTEXT

Site Description

Existing Quarry

- 5.1 Swanworth Quarry is located to the northwest of the village of Worth Matravers. The site occupies land which slopes to the west of Compact Farm, on the minor road between Worth Matravers and the B3069, down to Coombe Bottom. It consists of exposed scarp faces of both Portland and Purbeck stone, internal access roads, areas of stockpiling with mobile equipment and offices. The site is accessed from the minor road just south of the B3069.
- 5.2 The existing quarry has permission to undertake consented operations (extraction and import of infill material) until 2024 with restoration to be completed by 2025.
- 5.3 The approved restoration scheme for the existing quarry is to partially infill using imported inert material and quarry waste to produce a new landform with final use being a combination of biodiversity, geodiversity and public access. The proposal is to create a range of habitats of ecologically beneficial habitats including dry limestone grassland, damp grassland, a pond, areas of tree/shrub planting combined with natural regeneration and exposed rock strata for public interpretation.
- 5.4 An area of the quarry within the southeast section has already been restored to limestone grassland using seeds collected from local SSSI grassland.
- 5.5 The planning history and operations at Swanworth are referred to in the planning documents.

Proposed Extension Site

- 5.6 The proposed extension site is located to the west of the existing quarry on the opposite slopes and separated from it by a steep coombe. The extension occupies land sloping in an easterly direction from approximately 132m AOD to 116m AOD in Coombe Bottom. It is currently occupied by the lower parts of the three agricultural fields (pasture and arable) bounded by dry stone walls and a farm track to the west.

Published Landscape Character

National

- 5.7 The landscape of Great Britain has been classified into a series of character areas at a national scale. These reflect broad recognisable characteristics such as geology, soils, vegetation, land use and settlement pattern.
- 5.8 The site falls into National Character Area 136 'South Purbeck'. This occupies the coast and its hinterland between Swanage and Durdle Door within the District of Purbeck, adjoining the Dorset Heaths NCA to the north, and includes the classic chalk and limestone geological landscapes which are a key feature of the area. Other key characteristics include its predominantly rural agricultural character, mixed arable and pasture land, relative lack of woodland and tree cover, open vistas and juxtaposition of impressive coastal and inland topography stimulating feelings of tranquillity and solitude.
- 5.9 The description notes that Swanage and its hinterland have a strong identity based upon past stone quarrying. The influence of mineral extraction continues in the present-day landscape with several active quarries making use of the valuable underlying geology.

- 5.10 National Character Areas are too broad to allow accurate and meaningful evaluation of landscape character and change at a local scale. Therefore, it is not considered further within this appraisal.

District Landscape Character Assessment

- 5.11 The relationship of the site to the published Landscape Character Types (LCT) and Landscape Character Areas (LCA) in the Dorset AONB Landscape Character Assessment are shown in **Figure 5** and **Figure 6**.

- 5.12 The proposed extension lies within the 'Purbeck Plateau' LCA which is part of the 'Limestone Plateau' LCT.

- 5.13 The key characteristics of the Purbeck Plateau LCA are:

- Exposed limestone plateau with incised coastal valleys
- Rectangular pattern of Medieval origin and planned geometric fields with an expansive network of stonewalls
- Limestone grasslands and arable fields with a varied flora
- Sweeping views of coast and Purbeck Ridge
- Linear and nucleated limestone villages set within an open landscape
- Ancient field systems
- Small limestone quarries and associated features

- 5.14 The coombe and the lower section of the consented Swanworth Quarry lie within the Kimmeridge Coast LCA, part of the 'Clay Vale' LCT.

- Undulating coast of limestone cliffs and distinctive headlands
- Large, open coastal grasslands on sweeping clay landform
- Open landscape with isolated copses and windswept trees
- Occasional damp grassland habitats
- Hidden nucleated settlements surrounded by small broadleaved woodlands
- Stone walls towards the Purbeck Plateau
- Remote and largely inaccessible
- Incised valleys of landscaped parklands
- Mixed regular and irregular enclosures of stunted hedgerows
- Traces of medieval fields systems

- 5.15 Full extracts from the Dorset AONB Landscape Character Assessment for the two LCA are included within **Appendix 2**.

Evaluation of Site Landscape Character

- 5.16 The field survey undertaken by DJA found that the landscape surrounding the site generally accorded with the published description in the Dorset AONB Landscape Character Assessment.

- 5.17 The wider landscape has a strongly rural character with mixed arable and pasture land use. Settlement is generally sparse with a pattern of historic and nucleated villages at nearby Worth Matravers and Kingston. The landscape is open with few trees enabling wide-ranging views including glimpses of the coastal cliffs and sea from the B3069 between Langton Matravers and Kingston.

- 5.18 The proposed extension site has a simple landscape pattern reflective of the 'Purbeck Plateau' LCA with medium-sized regular fields bounded by stone walls, fences and hedgerows. These walls and hedgerows are a strong feature in the landscape accentuated when in shadow. The fields have an

open character with an absence of tall boundary features such as high hedgerows and trees, giving intervisibility and a sense of connection to the wider landscape.

5.19 The fields of the proposed extension contrast strongly with the coombe below, a feature that creates a topographical break in the landscape and follows a sinuous profile as it descends towards the coast affording a more natural feel as opposed to the man-made fields. The steep sides shield the coombe from the wider landscape and its complex mosaic of woodland, scrub and rough grassland gives it an enclosed and intimate character. The enclosed nature of the coombe provides it with a greater sense of tranquillity than the higher land, although there is a short stretch of the coombe which passes the consented Swanworth Quarry.

5.20 Aside from the influence of the existing Swanworth Quarry, there is a visible legacy of quarrying in the local landscape reflecting a strong association with its distinctive underlying geology. There are several active dimension stone quarries along the B3069 between Worth Matravers and Langton Matravers and numerous old quarries that generally blend into the wider rural landscape. Several former quarries within Purbeck have become important tourist attractions, such as the coastal sites at Dancing Ledge, Seacombe and Winspit, whilst others provide recreational and educational resources.

Landscape Value

5.21 Landscape value relates to the value or importance society attaches to a landscape or view, which expresses national or local consensus and because of its quality, special qualities, cultural associations or ecological status. IEMA/LI guidance identifies a number of reasons why a landscape may be valued:

landscape condition: a measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements;

scenic quality: the term used to describe landscapes that appeal primarily to the visual senses;

rarity: the presence of rare features or elements in the landscape, or the presence of a rare landscape character type;

representativeness: whether the landscape contains a particular character and/or features or elements which are considered particularly important examples;

conservation interests: the presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right;

recreation value: evidence that the landscape is valued for recreational activity where experience of the landscape is important;

perceptual aspects: a landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity.

associations: some landscapes are associated with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area.

5.22 Assessment of landscape value has been based on consideration of:

- landscape designation i.e. Area of Outstanding Natural Beauty (AONB);
- nature conservation designation i.e. Site of Special Scientific Interest (SSSI);
- published literature relating to local cultural heritage, recreation and tourism;
- published landscape assessment;
- the inter-relationship of the above.

Landscape condition

- 5.23 The surrounding landscape is in generally good condition. The features are typical of the area (including quarrying).

Scenic quality

- 5.24 This a beautiful living landscape with contrasts between open fields and deep coombes.

Rarity and representativeness

- 5.25 The open landscape is typical of the wider landscape but is not particularly rare. The wooded coombes are also typical but are a rarer feature in the landscape.

Conservation interests

Designated Landscapes

- 5.23 Both the consented and proposed quarry, and the wider surrounding landscape, fall inside the Dorset Area of Outstanding Beauty (AONB). The site also lies within the Purbeck Heritage Coast, which covers not only the coastline proper but a large swath of countryside extending inland to the boundary of the B3064 between Langton Matravers and Kingston.
- 5.24 The AONB designation acknowledges that the area is of national importance for its scenic beauty. One of the special qualities of the area is its juxtaposition of both terrestrial and coastal scenery.

Nature Conservation

- 5.25 A baseline ecological report has been produced which evaluates the ecological value of the proposed extension and its surroundings in greater detail.
- 5.26 The proposed extension is not covered by a statutory nature conservation designation. The main site consists of the lower parts of three agricultural fields of relatively limited ecological value. The steep-sided coombe contains a mosaic of secondary broadleaved woodland, scrub and rough grassland of higher value.
- 5.27 As shown in **Figure 3**, the lower sections of the coombe (south of the proposed extension site) extending to Chapman's Pool are included within the South Dorset Coast Site of Special Scientific Interest (SSSI) and the Isle of Portland and Studland Cliffs Special Area of Conservation (SAC).

Cultural Value

- 5.28 There are no historical or culturally designations within the site. There are several listed buildings within the local area, the nearest being Kingston Barn, a grade II listed property lying approximately 300m to the north across the B3069. There are a cluster of listed buildings around Renscombe Farm and in the village of Worth Matravers to the south (predominantly screened from the site).
- 5.29 Encombe, a large grade II Registered Park and Garden of Special Historic Interest lies approximately 700m to the west with no intervisibility.
- 5.30 Kingston Down Romano-British farm, a Scheduled Monument, lies c.800m to the southwest. In closer proximity, but outside the proposed extension area, are several tumuli (also Scheduled Monuments).

- 5.31 The Site Assessment of the proposed extension contained within the draft Minerals Plan has concluded that the listed buildings in the vicinity are not close enough to be affected.

Public Access/Recreation

- 5.32 There is no public access to the proposed extension site which consists of privately owned agricultural land. The public right of way network in the area surrounding the site is shown in **Figure 1**.
- 5.33 A section of the Purbeck Way runs through the coombe adjacent to the eastern boundary of the proposed extension and underneath the proposed bridge linking the consented with the proposed quarry. The Purbeck Way is a long-distance path from Wareham to Swanage and terminating near Chapman's Pool. It is a promoted route that passes through some of the most attractive landscapes of the AONB including the Purbeck Ridge between Swanage and Corfe Castle.
- 5.34 Except for a public footpath (SE29/20) linking the Purbeck Way to Worth Matravers, there are few other public rights of way in the immediate vicinity. The minor road between Worth Matravers and the B3069 and the village of Langton Matravers is used by local walkers and cyclists.

Perceptions and associations

- 5.35 The area is perceived as a beautiful living landscape comprising agricultural, recreational, residential, transport and quarrying activities.

Summary of Landscape Value

- 5.36 The proposed extension lies within the Dorset AONB and Dorset Heritage Coast, which covers a highly valued and sensitive landscape with distinctive features that affords open and sweeping views juxtaposing both coastal and terrestrial scenery. The wider AONB has a relatively strong and intact landscape character and clearly must be considered as having a **very high** landscape value.
- 5.37 The proposed extension consists of agricultural fields with no public access and does not have a high cultural, ecological or recreational value. Its intrinsic value is medium but due to its inclusion within the AONB, proximity to the Purbeck Way and presence in some views towards the coast, it is considered to have a **high** value in terms of its landscape character. Its simple but distinctive landscape pattern and open nature are reflective of the 'Purbeck Plateau' LCA and contribute to surrounding section of the AONB.
- 5.38 Similarly, the coombe is considered to have a **high** landscape value. It also forms part of the AONB and Heritage Coast, but due to its enclosed nature does not make an important contribution to the wider visual character. Its intrinsic value lies in its intimate and natural character.

Sensitivity to Change

- 5.39 The degree to which a landscape is assessed as being sensitive is reflected in its ability to accommodate changes in character brought about by development. The sensitivity of a landscape to change is a function of both its inherent landscape value and its susceptibility to the specific form of development in question.
- 5.40 A distinction is drawn between the many different aspects of landscape character and how they are affected. As an example, one may consider a tract of landscape designated as an Area of Outstanding Natural Beauty. In terms of landscape value it is highly valued and in those terms would normally be regarded as highly sensitive to built development. However, that same tract of landscape, could in terms of its landscape characteristics, comprise a mix of hills, valleys and dense

woodland. This would give that landscape an ability to visually contain and absorb a development. Similarly, the character of the existing landscape may be already influenced by the presence of the type of development proposed, such that its addition would not introduce new elements into the landscape.

- 5.41 Accordingly, a landscape may therefore have inherently high value/sensitivity but whose overall sensitivity to the type of development proposed may be reduced by a number of factors. For that reason, it is necessary for the purposes of assessment to consider the effects of development on landscape character as well as landscape value.

Sensitivity to change of Site

- 5.42 Whilst the wider AONB landscape is considered to have a **very high** sensitivity to change, the presence of the existing consented Swanworth Quarry reduces the overall sensitivity of the proposed extension site to **high**.
- 5.43 The majority of the proposed extension consists of simple landscape pattern of agricultural fields with a lack of complex structural vegetation such as high hedgerows or trees. The crops planted within the fields are subject to frequent changes and considered to be transient. Given that the western boundary of the proposed extension cuts across an open field, the boundary wall feature can be retained, which allows the proposed quarry to be more readily accommodated into the existing field pattern. The sensitivity to change of the landscape fabric and features of the proposed extension are judged to be **high-medium**.
- 5.44 Due to its sunken position, the majority of the coombe does not have intervisibility with the existing quarry. It also has a more intimate and tranquil character compared with the higher open slopes of the main extension site. The landscape character of the coombe is considered to have a **high** sensitivity to change. Similarly, the presence of more complex and higher value landscape features such as steep slopes and mosaics of woodland and scrub are inherently more vulnerable to the impact of development. The landscape fabric of the coombe is judged to have a **high** sensitivity to change.

5.45 **Table 1** summarises the assessment values for landscape value, susceptibility and sensitivity for the wider AONB, main body of the proposed extension and coombe.

Table 1 Landscape Value – Receptor Sensitivity

| Receptor | Landscape value | Susceptibility to change | Sensitivity |
|--|---|--|-------------|
| Dorset AONB (including surrounding sections of Purbeck Plateau and Kimmeridge Coast LCA) | Very high | High Existing influence of quarries in landscape | High |
| Proposed extension (part of Purbeck Plateau LCA) | | | |
| Landscape character | High | High-medium Presence of adjacent consented quarry reduces susceptibility | High-medium |
| Landscape fabric/features | Low-medium Lack of hedgerows and trees within main extension site. | Medium Quarry can be accommodated within existing field boundaries | Medium |
| Coombe (part of Kimmeridge Coast LCA) | | | |
| Landscape character | High | High-medium Consented quarry largely screened from lower coombe but pre-existing impact on tranquillity | High |
| Landscape fabric/features | High-medium Diverse mosaic of woodland, scrub and grassland | Medium Vegetation more susceptible to impacts | High-medium |

Visual Baseline

General

- 5.46 In order to assess the impact, the development may have on visual amenity, it is necessary to understand who will be subject to a change in visual circumstances and the extent to which those persons will be affected. The starting point is thus to establish the sensitivity of the viewing public to visual change.
- 5.47 LI/IEMA guidelines currently provide examples of broad categories of inherently high, medium and low sensitivity. The guidelines stress that these are only examples and that every project will require its own set of criteria and thresholds. The examples provided relate to High, Medium and Low Sensitivity dependent upon the expectations of the viewer and broadly typified by occupiers of Residential Properties and users of Public Rights of Way (High), people engaged in certain Sporting

and Recreational activities (Medium) and those occupied at their place of work or using the local road network for vehicular journeys (Low).

- 5.48 Sensitivity however also depends on the actual quality of the existing view. Accordingly, when the sensitivity to the change actually being proposed is assessed, matters such as the context and extent of the existing view as well as the proximity of the receptor to the proposed development need to be considered.
- 5.49 An example could be provided by two identical residential properties. The occupier of property A could have open views across a National Park while B may overlook heavy industrial areas on the urban fringe. Whilst both parties could be regarded as inherently highly sensitive to visual change the actual situation would be that the occupier of property A would be regarded as highly sensitive to change relative to built development in the context of the view, whilst the party at property B as of medium or low sensitivity.

Visual Receptors

- 5.50 Three categories of Visual Receptor have been identified. These are:
1. Occupiers of Residential properties.
 2. Users of Public Rights of Way.
 3. Users of Local recreational facilities
 4. Users of roads.
- 5.51 People occupied at their place of work are considered to be least likely to be affected by development and have not been included. The general category of visual sensitivity for various receptor groups is summarised in **Table 2**.

Table 2 Visual Receptor Sensitivity by Category

| Category | Description | Sensitivity |
|----------|--|-------------|
| A | Users of Public Rights of Way / Open Space | High |
| B | Residential areas (community) and occupiers of individual residential properties | High |
| C | Users of local roads | Medium |

- 5.52 A summary of the viewpoint locations with their sensitivity is given in **Table 3**. The Receptor Sensitivity for each viewpoint has been adjusted to more accurately reflect the nature and context of the view.
- 5.53 The Purbeck Way is a promoted long-distance path that is considered to have an increased sensitivity compared with ordinary public rights of way (very high rather than high). However, professional judgement is used depending on the nature of the existing views.
- 5.54 The sensitivity of visual receptors varies according to category and the context of the view as described above. Distances are recorded to the extension site and not the consented and operational part of the quarry.

Table 3 Selected Representative Viewpoints and Sensitivity

| Viewpoint Reference | Receptor Type/Location | Distance from Proposed Extension | Sensitivity |
|---------------------|--|----------------------------------|-------------|
| 1 | Road - B3069 adjacent to Kingston Barn | 0.23km | Medium |
| 2 | Road - Layby on B3069 to east of Kingston Barn | 0.2km | Medium |
| 3 | PRoW - Purbeck Way south of B3069 | 0.3km | Very high |
| 4 | PRoW - Purbeck Way south of B3069 | 0.13km | Very high |
| 5 | PRoW - footpath through coombe | 0.36km | High |
| 6 | Road – north of Compact Farm | 0.55km | Medium |
| 7 | Road – adjacent to Compact Farm | 0.72km | Medium |
| 8 | Public car park at Worth Matravers | 0.87km | High |
| 9 | PRoW – footpath just north of Worth Matravers | 0.82km | High |
| 10 | Road – between Weston Farm and Renscombe Farm | 0.97km | Medium |
| 11 | Road - B3069 at bus stop near junction with Haycrafts Lane | 1.51km | Medium |
| 12 | PRoW - Purbeck Way to west of Godlingston Hill | 4.75km | Very high |

Existing visibility

- 5.55 The existing consented quarry is generally well-contained within the landscape with only the upper benches/overburden slopes visible in most cases: these are being restored as per the agreed restoration plan. Significant views are limited to the minor road leading south to Worth Matravers, the quarry entrance, the north west edge of Worth Matravers including the car park, the footpath from Worth Matravers leading north west towards and alongside of the consented quarry, the minor road from Worth Matravers and Renscombe Farm and short stretches of the Purbeck Way especially alongside of the quarry. The lower parts of the quarry and plant area are well screened apart, particularly, from the short stretch of the Purbeck Way adjacent to the quarry.
- 5.56 The lower parts of the three fields that comprise the proposed extension are visible from the public viewpoints shown on the Zone of Significant Visibility in **Figure 9**.

6. ASSESSMENT OF LANDSCAPE EFFECTS

General

- 6.1 There will be limited change to the consented restoration of the existing quarry other than an extension of operational timescales. Therefore, the assessment of effects will focus on the effects of the proposed extension at both the operational and restoration phases.

Effects on Landscape Features and Fabric

Soils and Topography

- 6.2 Soils will be stripped and stored in low linear bunds around parts of the site; they will be used in the final restoration back to original landform and land use.
- 6.3 The landform will be quarried, filled and returned to its original levels.

Trees and Vegetation

- 6.4 One short length of hedgerow and vegetation disturbed by the creation of the gabion bridge and access cut/road are the only elements to be lost. The upper parts of the access cut can be vegetated using local stock, seeds and species. On completion, the access area having been restored back to ground levels can be re-planted as before extraction.

Effects on Landscape Character

Effects on the AONB

- 6.5 The landscape effects (principally landform, landcover and land usage) on the AONB are assessed in **Table 4** below. They are all temporary impacts with restoration to existing by completion

Table 4: Predicted Landscape Effects during Operation Period and on restoration

| Receptor | Sensitivity | Magnitude of Effect | Overall effect | Significance |
|----------------------------------|-------------|--|--|---|
| Site Landscape Character | | | | |
| Soils/Topography | Medium | High – during operations Negligible – on completion | Substantial-Moderate - during operations Negligible – on completion | Negative during operations. Not significant on completion. |
| Trees/Vegetation | Low | Low - during operations Negligible – on completion | Slight- during operations Negligible – on completion | Negative during operations. Not significant on completion. |
| Tranquillity | Medium | Medium – during operations Negligible – on completion | Moderate - during operations Negligible – on completion | Negative during operations. Not significant on completion. |
| Wider Landscape Character | | | | |
| Local Landscape Character | High-medium | Medium | Substantial-Moderate - during operations Negligible – on completion | Negative during operations. Not significant on completion. |
| Extension area - Purbeck | Medium | Medium | Moderate - during | Negative during |

| Receptor | Sensitivity | Magnitude of Effect | Overall effect | Significance |
|------------------------------------|--------------------|----------------------------|---|--|
| Plateau landscape fabric/features | | | operations Negligible – on completion | operations. Not significant on completion |
| Coombe – landscape fabric/features | Medium | Medium | Moderate - during operations Negligible – on completion | Negative during operations. Not significant on completion |
| AONB | Very High | High-Medium | Substantial-during operations Negligible – on completion | Negative during operations. Not significant on completion |

7. PREDICTED EFFECTS ON VISUAL AMENITY

General

- 7.1 A detailed assessment of visual effects from the representative viewpoint locations is contained in **Table 5**, and the accompanying annotated photo viewpoints included in **Appendix 3**. A summary of predicted visual effects is outlined below.

Predicted Potential Effects on Artificial Lighting

- 7.2 It is understood that there will be no artificial lighting associated with the proposed extension and that operations would be restricted to normal working hours. Therefore, the proposals would have no effect on the baseline levels of artificial lighting or the night-time visibility of the site.

Table 5: Predicted Visual Effects

| Receptor | Distance to Extension site | Receptor Type and Description | Description of Effects | Viewpoint Sensitivity | Magnitude | Overall Effect and Significance |
|----------|----------------------------|---|--|-----------------------|-----------|--|
| VP 1 | 0.23km | Public Road B3069 adjacent to Kingston Barn | This is a perpendicular view from the B3069 over a wall/intermittent hedgerow across an intervening rising field. The extraction proposals form a very limited sliver of the lower part of the farther field beyond an intervening wall. The access cut would not be visible. Phase 1 would have no visual impact of consequence. Phase 2 would leave half of the field in place which would in itself reduce the size of the visible sliver of view. During the final Phase 3, the upper restoration of Phase 1 & 2 would be completed and returned to existing levels. | Medium | Low | Moderate-slight. Negative during operations. Not significant and Neutral on completion. |
| VP 2 | 0.2km | Public Road - Layby on B3069 to east of Kingston Barn | This is an oblique view from a layby on the B3069 across a large field. There is a substantial hedgerow running across the view immediately in front of the proposed extraction area. It is principally the lower parts of the northernmost field that would be visible. The access cut would not be visible and Phase 1 would be barely visible in the far distance. The skyline would not be affected. There would be clear views of the upper extraction in Phases 2 & 3. Restoration would be back to original ground levels and land uses. | Medium | High | Substantial-Moderate during operations. Not significant and Neutral on completion. |
| VP 3 | 0.3km | PRoW - Purbeck Way south of B3069 | This viewpoint is from the Purbeck Way. The proposed upper extraction would be visible across a field which is on an intervening shoulder of land. The skyline (comprising the upper parts of the fields to be extracted) would remain. Restoration would be back to original ground levels and land uses. | Very High | High | Very substantial during operations Not significant and Neutral on completion. |
| VP 4 | 0.13km | PRoW - Purbeck Way south of B3069 | This viewpoint is further south down the Purbeck Way. The access cut at high level would just be visible in the extreme south. The proposed upper extraction would be visible across intervening fields and hedgerow/walls. There would be clear views of the upper faces and overburden slope. Restoration would be back to original ground levels and land uses. | Very High | Very high | Very substantial during operations Not significant and Neutral on completion. |

| Receptor | Distance to Extension site | Receptor Type and Description | Description of Effects | Viewpoint Sensitivity | Magnitude | Overall Effect and Significance |
|----------|----------------------------|--|---|-----------------------|-----------|--|
| VP 5 | 0.36km | PRoW - footpath through coombe | Vp5 represents the view from the Purbeck Way through the bottom of the wooded coombe. The proposed extraction area is not visible. There may be minor change to the view while the access cut is being created. The bridge over the coombe from viewpoints further north will be readily visible and the path would pass below the bridge. Restoration would be back to original ground levels and land uses. | High | High | Substantial during operations. Not significant and Neutral on completion. |
| VP 6 | 0.55km | Public Road – north of Compact Farm | Vp6 represents views from the minor road running north from Worth Matravers. Views are perpendicular or oblique across a field, the existing consented quarry and the wooded coombe above the Purbeck Way. The access cut would also be angled across the landscape on the opposite side of this wooded fringe. The proposed extractive area would be visible in the lower fields beneath Kingston Church which forms part of the retained and unaffected skyline of fields and woods. Restoration would be back to original ground levels and land uses. | Medium | Low | Moderate-slight. Negative during operations. Not significant and Neutral on completion. |
| VP 7 | 0.72km | Public Road – adjacent to Compact Farm | This viewpoint is opposite Compact Farm further south than VP6. It would have an oblique view into and across the access slot with Kingston Barn on the skyline beyond. The upper parts of the extractive areas would be seen in the lower part of the two fields across the wooded coombe. This is a broad view encompassing foreground field boundaries and the attractive features of the sea and Houns-tout Cliff & Swyre Head to the left of the panorama. Restoration would be back to original ground levels and land uses. | Medium | Low | Moderate-slight. Negative during operations. Not significant and Neutral on completion. |
| VP 8 | 0.87km | Public car park at Worth Matravers | Vp8 is located in the well-used car park at Worth Matravers. It would have a view into the access slot above the wooded coombe in the middle ground. The extractive area in the lower part of the two fields would be visible below Kingston Barn which is on the skyline along with the Plantation, Swyre Head and Houns-tout cliff. There is foreground interest in this wide deep panorama. Restoration would be back to original ground levels and land uses. | High | High | Substantial during operations. Not significant and Neutral on completion. |

| Receptor | Distance to Extension site | Receptor Type and Description | Description of Effects | Viewpoint Sensitivity | Magnitude | Overall Effect and Significance |
|----------|----------------------------|--|--|-----------------------|------------|---|
| VP 9 | 0.82km | PRoW – footpath just north of Worth Matravers | This viewpoint represents the view from the public footpath north of Worth Matravers. There is a field in the foreground leading to the consented quarry showing active working and restored slopes currently being extended. The wooded coombe runs across and into the middle distance. The access slot would be visible heading towards Kingston Barn on the skyline. Due to the lower elevation of the viewpoint, only limited quarrying would be visible. Restoration would be back to original ground levels and land uses. | High | Medium | Substantial-Moderate during operations. Not significant and Neutral on completion |
| VP 10 | 0.97km | Public Road – between Weston Farm and Renscombe Farm | This viewpoint is located on the minor road to the west of Worth Matravers between Weston Farm and Renscombe Farm; the road is falling gradually to the north west. The bulk of this view comprises foreground field with the Field Study centre in the bushes in the middle ground. There is a flattish skyline with the Plantation to the north west. There are filtered views of the existing consented quarry. Views of the upper parts of the proposed area of quarrying would be limited to a small glimpse within the centre of this view. Restoration would be back to original ground levels and land uses. | Medium | Very low | Moderate-slight Negative during operations. Not significant and Neutral on completion. |
| VP 11 | 1.51km | Road - B3069 at bus stop near junction with Haycrafts Lane | Vp11 is near the bus stop on the B3069 close to the junction with Haycrafts Lane. The proposed site is 1.5 kms away across 5 fields and field boundaries. This view is dominated by the 8 or 9 horizontal stripes created by these walls, hedges and skyline plantation. The proposed upper quarry faces would be seen as another thin stripe in the distance. Restoration would be back to original ground levels and land uses. | Medium | Very low | Moderate-slight Negative during operations. Not significant and Neutral on completion. |
| VP 12 | 4.75km | PRoW - Purbeck Way to west of Godlingston Hill | VP12 is a representative view to the west of Godlingston Hill on the Purbeck Ridge almost 5 kilometres away. This is a broad beautiful view towards the sea across the clay valley. The proposed extraction would have no impact of consequence on this view. Restoration would be back to original ground levels and land uses | Very High | Negligible | Not significant |

8. CONCLUSION

- 8.1 An extension to Swanworth Quarry has been allocated in the Bournemouth, Dorset and Poole Mineral Sites Plan as site PK16. In the plan it is stressed that the landscape and visual impact on the AONB needs to be addressed.
- 8.2 The National Planning Policy Framework requires that mineral planning authorities refuse permission for major developments in Areas of Outstanding Natural Beauty, except in exceptional circumstances and where it can be demonstrated that such quarries are in the public interest.
- 8.3 This Landscape and Visual Appraisal has been produced to aid the inspector in this evaluation and balancing process.
- 8.4 Much of Dorset is designated as AONB due to the quality and variety of the landscape. All AONBs/National Parks (and, indeed, most landscapes) derive their identity in the first instance from their geology. The Dorset AONB is no exception. It is, among many factors, the rolling hills, ridges, coombes, cliffs, old quarrying sites, fossils which make people want to live here and visit. It is a living landscape. People have lived, farmed, travelled, worked and quarried here for millennia. While it is the geology and natural forces that have generally created the landform, it is this human activity that has created the land cover and land use.
- 8.5 The residents and visitors to the AONB and wider area require a supply of aggregates and essential building materials. These either have to come from within the AONB or from further afield.
- 8.6 If the aggregates do not come from quarries within the Dorset AONB then they must travel by road from such areas as the Mendips AONB transferring any landscape and visual impacts elsewhere but with the unsustainable addition of myriad lorry movements with their own visual and other impacts on the landscape.
- 8.7 Swanworth Quarry is a consented operational facility with its infrastructure already in place. With rare exception the plant and major activity is well-concealed. The upper slopes and faces are restored or being restored to an agreed plan. There are landscape and visual advantages in using an extant facility over introducing a new one into the AONB elsewhere. Swanworth Quarry has been providing material to the area for over 100 years and is, in itself and like other building stone quarries, part of the fabric and history of the area. The current Swanworth Quarry can be seen only from a very few limited viewpoints and, then, it is mostly the upper slopes and faces currently being restored.
- 8.8 The proposed extension area (PK16) comprises three nearby fields. The proposed quarry and connection to the existing facility has been devised through numerous iterations and consultations to minimise landscape and visual impacts. To this end, it is only the lower parts of two fields which would be quarried with an access cut across the third field avoiding specific valued landscape elements. The proposed design utilises the strong field pattern with its walls/hedgerows/fences.
- 8.9 The access cut and bridge combination have been designed and located to minimise landscape and visual impacts particularly of internal lorry movements.
- 8.10 There are very limited viewpoints from which any parts of the proposal could be seen (see **Figure 9**). Even these could be mitigated further at detailed design /application stage (such as the stretch of the Purbeck Way at VPs 3 & 4).
- 8.11 Directions of working and sequencing have been devised to minimise impacts and to maximise the infilling and progressive restoration.

- 8.12 All and any visual or landscape impacts are, in any event, temporary. The restoration of the whole proposed area to the original landform, land cover and land uses ensures this.
- 8.13 No landscape elements or features of any consequence are permanently lost.
- 8.14 There are no cumulative effects.
- 8.15 While there would be limited landscape impacts on the AONB and visual impacts limited to very restricted viewpoints in the AONB these would be temporary.



KEY

- Proposed Quarry Extension
- Consented Quarry Limits

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Drawing Title
FIGURE 1 - SITE LOCATION PLAN

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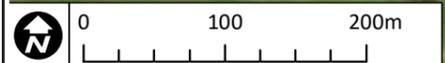
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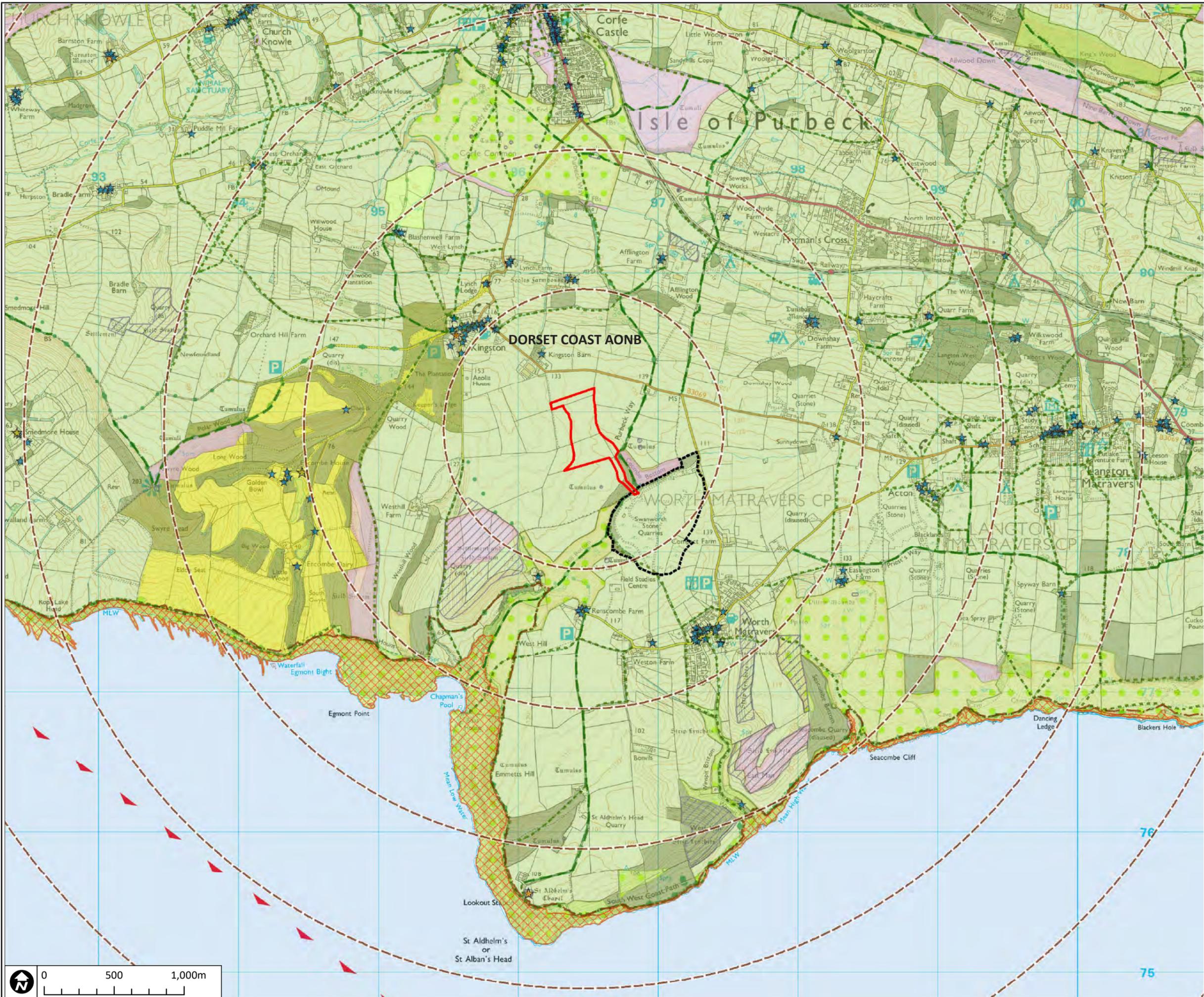
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FIGURE 2 - AERIAL PHOTOGRAPH

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| | | Status S4-P1 |



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- KEY**
- Proposed Quarry Extension
 - Consented Quarry Limits
 - Range Rings at 1km Intervals from Site Centre
- LANDSCAPE DESIGNATIONS**
- Listed Buildings**
- Grade I
 - Grade II
 - Grade II*
- World Heritage Site
 - Parks and Gardens
 - Special Protection Areas
 - Special Areas of Conservation
 - Scheduled Monuments
 - Site of Special Scientific Interest
 - CRoW (Open Access Areas)
 - Deciduous Woodlands
 - Area of Outstanding Natural Beauty

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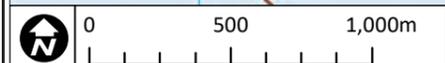
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FIGURE 3 - LANDSCAPE DESIGNATIONS

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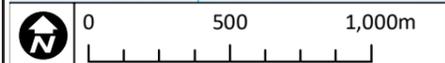


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KEY

-  Proposed Quarry Extension
-  Consented Quarry Limits
-  Proposed Viewpoints



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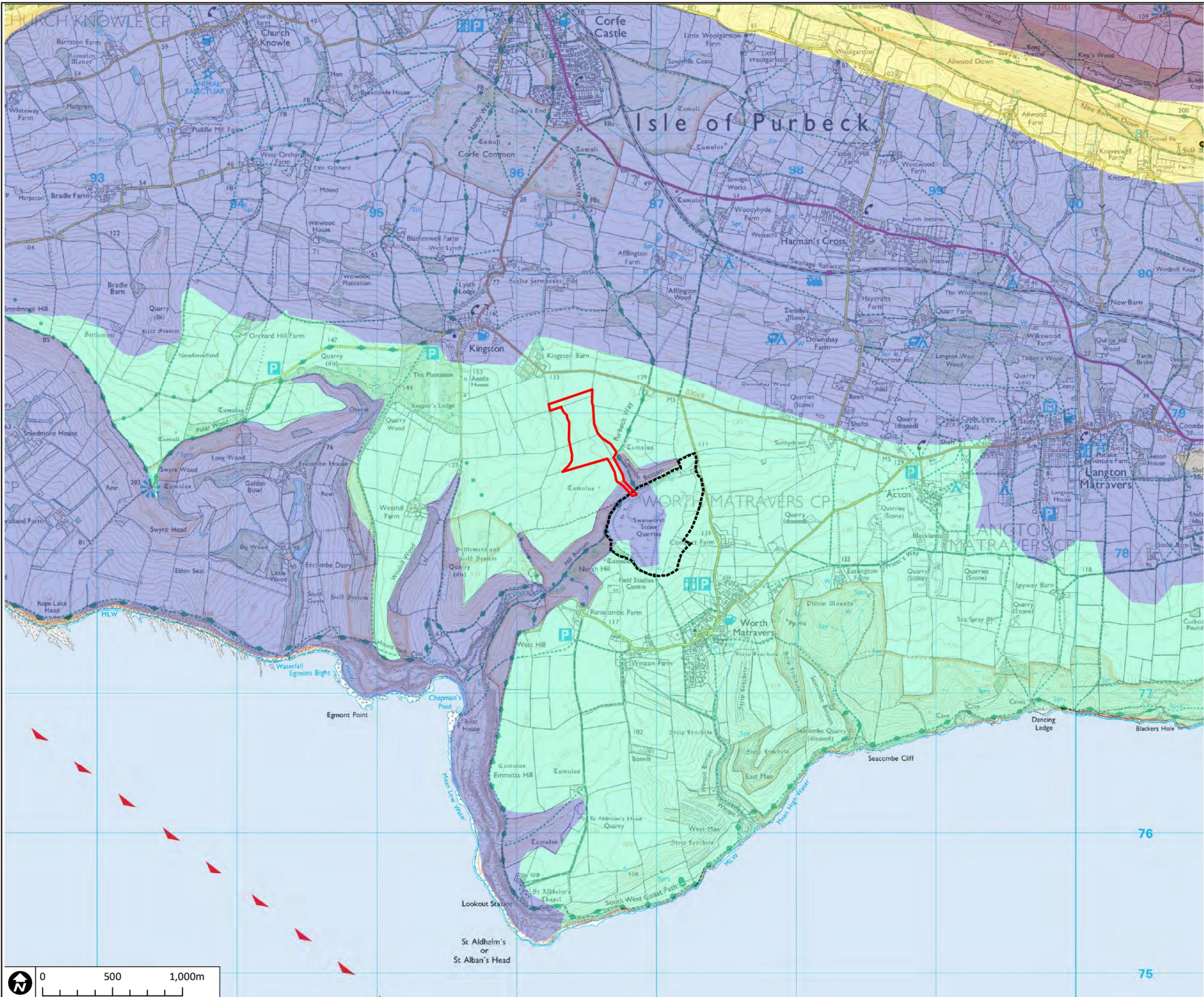
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FIGURE 4 - VIEWPOINT LOCATIONS

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| Status | | |
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- KEY**
- Proposed Quarry Extension
 - Consented Quarry Limits
 - Limestone Plateau
 - Clay Valley
 - Rolling Wooded Pasture
 - Chalk Ridge/ Escarpment

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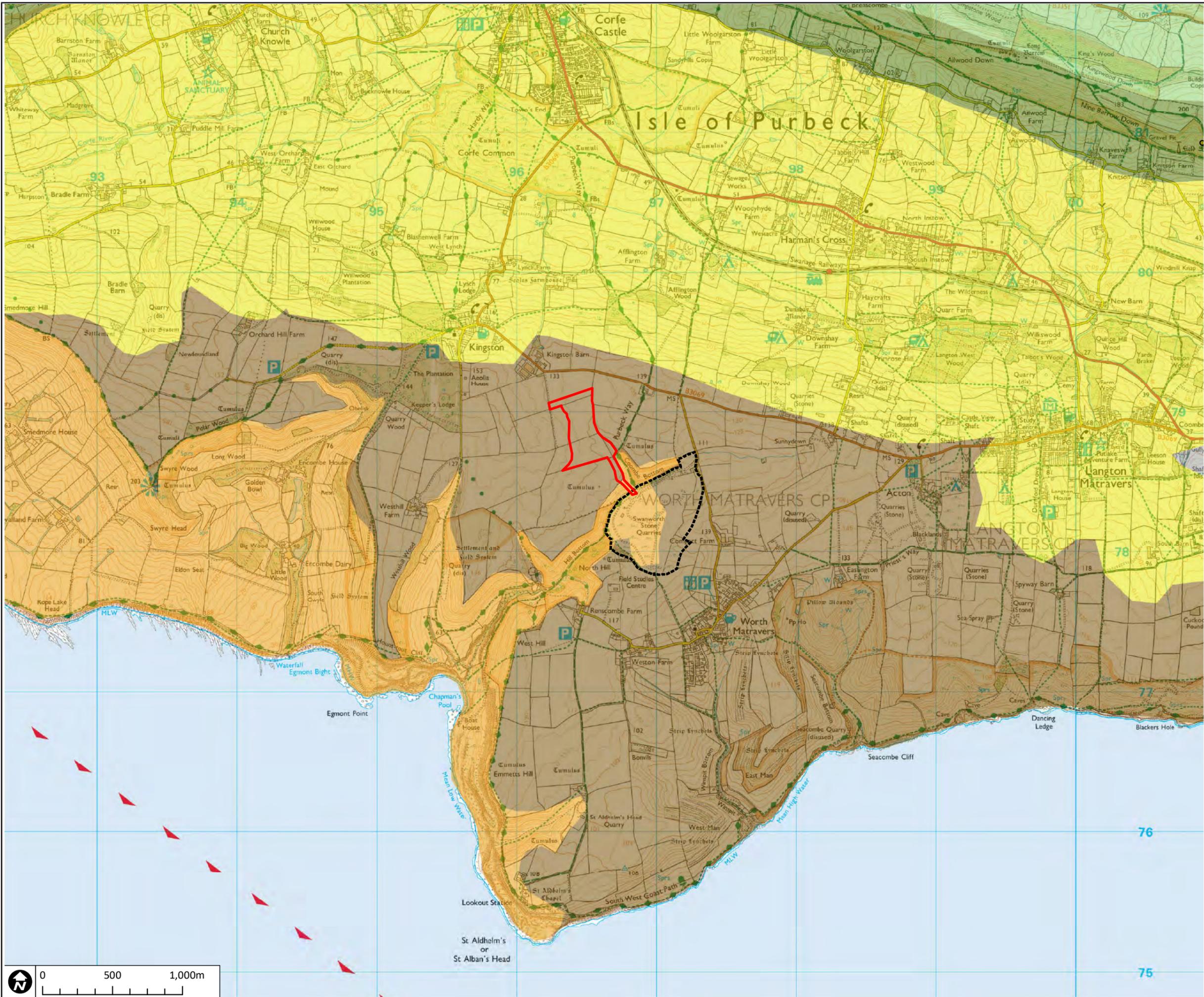
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FIGURE 5 - DORSET LANDSCAPE CHARACTER TYPES

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| | | Status |
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- KEY**
-  Proposed Quarry Extension
 -  Consented Quarry Limits
 -  Kimmeridge Coast
 -  Purbeck Plateau
 -  Corfe Valley
 -  Purbeck Ridge
 -  Rempstone Wooded Pasture

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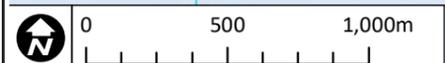
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FIGURE 6 - DORSET LANDSCAPE CHARACTER AREAS

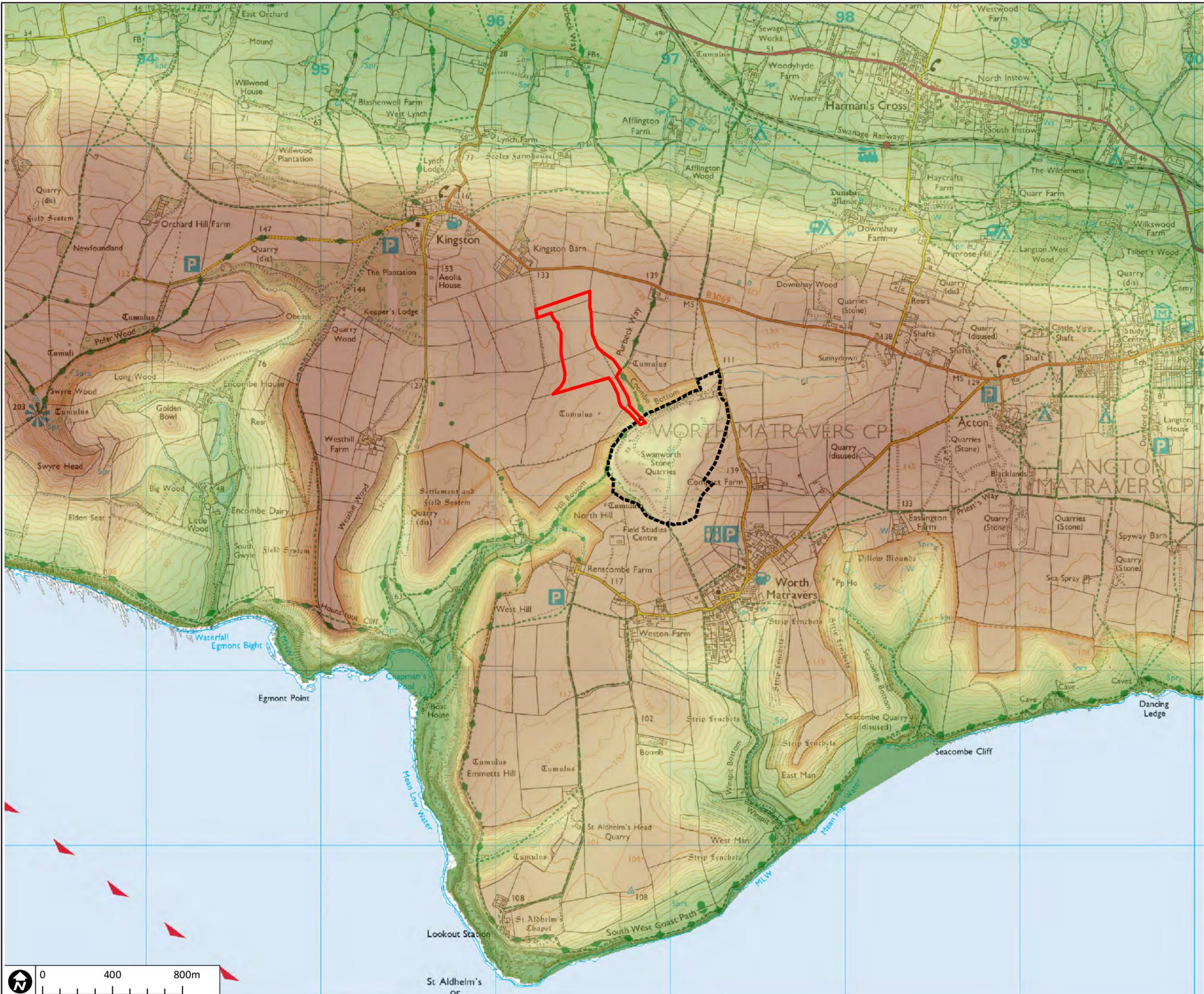
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0 500 1,000m

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KEY

- Proposed Quarry Extension
- Consented Quarry Limits

LEVELS

- 155m AOD
- 0.1m AOD

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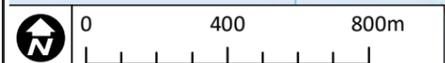
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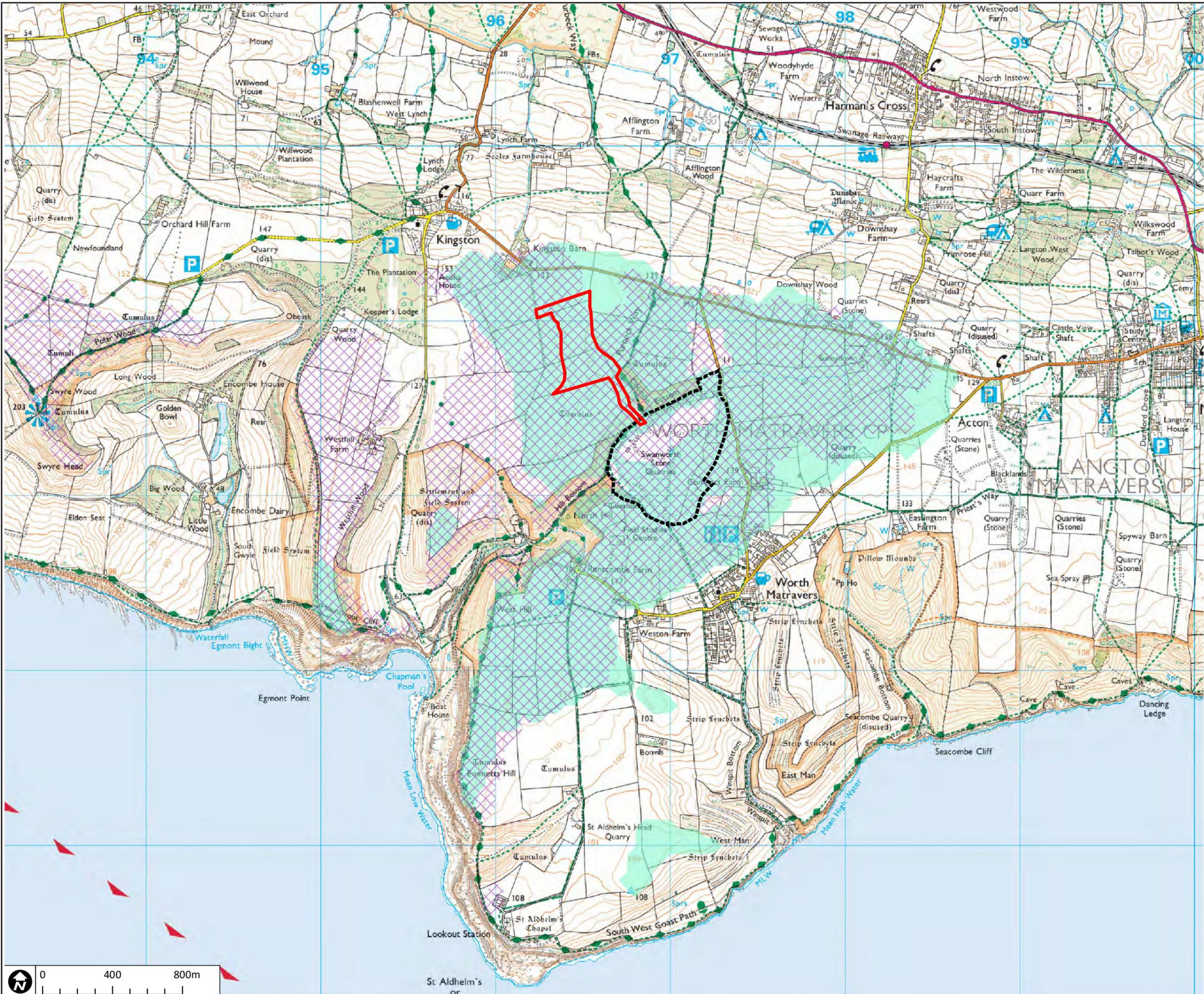
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FIGURE 7 - TOPOGRAPHY

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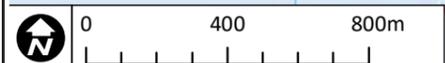
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KEY

-  Proposed Quarry Extension
-  Consented Quarry Limits
-  ZTV: Proposed Extension Site
-  ZTV: Existing Quarry

The zones of theoretical visibility (ZTV) are shown for the proposed test. The model takes account of landform only - no account is taken of existing vegetation or other built development and in reality, these would provide a considerable degree of screening. The Zone of Visual Significance is defined during field survey and takes into account those aspects missing from the ZTV and will therefore be considerably reduced from the ZTV. The ZTV is therefore considered to represent 'worst than worst case' scenario.



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SWANWORTH QUARRY EXTENSION

Drawing Title
FIGURE 8 - ZTV: ZONE OF THEORETICAL VISIBILITY COMPARISON

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| Scale | Sheet Size | Date |
| 1:20000 | A3 | DEC 2017 |
| Client Ref: | Drawing Ref: | Drawing No: |
| - | 2620-4-4-4 | LV-0008 |
| Status | | |
| S4-P1 | | |



KEY

- Proposed Quarry Extension
- Consented Quarry Limits
- Zone of Significant Visibility - Proposed Extension Site

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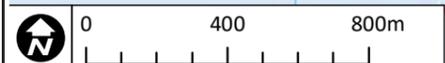
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Client
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Project
SWANWORTH QUARRY EXTENSION

Drawing Title
FIGURE 9 - ZSV: ZONE OF SIGNIFICANT VISIBILITY

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Appendix 1

Assessment Methodology and Glossary of Terms

General

Preparation of this assessment involved the following key stages:

- An update of the baseline survey and local landscape character assessment;
- identification of potential effects;
- identification of landscape and visual receptors;
- description and quantification of the changes to the baseline;
- identification of mitigating measures;
- preparation of a landscape strategy;
- evaluation of the predicted effects;
- landscape and visual assessment of the final scheme design.

Baseline Survey

Baseline surveys were carried out to record and analyse the existing landscape characteristics and the value of the landscape and visual resources in the vicinity of the proposed allocation sites. The research, classification and analysis process included:

- Desk and field based studies to identify the ZTV and likely ZSV, sensitive receptor viewpoints and landscape character.
- Research to establish the landscape planning context, nature conservation interest and aspects of the cultural heritage.
- Analysis of landscape characteristics in order to understand how they are made up and experienced as well as ascertaining their relative value.

Identification of potential effects

Identification of potential effects has formed part of the design process.

The broad design parameters of the project were established at the time of commission in terms of the nature of the development. This provided sufficient information to identify the likely:

- scale and nature of changes to landscape characteristics and landscape value;
- changes affecting visual amenity.

Identification of sensitive landscape and visual receptors

Identification of the sensitivity of the landscape resource is based on its ability to accommodate changes in character and value which would be caused by the development.

Landscape character and value are separately identified. This is done in order to distinguish between the ability of a landscape to physically accommodate a development in terms of landform, landcover and landuse, as opposed to its effects on valued aspects of the landscape which are more subjective in nature.

Identification of sensitive visual receptors is based on the proximity, context, expectations and occupation or activity of the receptor. Consideration is also given to the importance of the view.

Degrees of sensitivity are identified as appropriate for all categories of landscape and visual receptors to enable a systematic and consistent evaluation of the levels of predicted effects once assessed against their magnitude.

Description and quantification of the changes to the baseline

Predicted changes to the baseline take into account existing trends for change as well as those anticipated as a result of the development.

Change in landscape characteristics, including elements of landform, landcover and landuse as well as significant features are described and broadly quantified. The effect of these changes on aspects of landscape value are also described in terms of scenic quality, designated landscape, heritage interests, tranquillity, sense of place, rarity or uniqueness and nature conservation interests.

Predicted changes to the visual baseline are described for each sensitive receptor type and location. Consideration is given to change during construction, at completion and in the years following completion restoration. Computer generated imaging assists the description.

Evaluation of Predicted Effects

Predicted landscape and visual effects are assessed in terms of their scale, duration, magnitude, level and nature on identified sensitive receptors.

Methods used for evaluation follow published guidance and include a combination of objective and subjective judgements.

To aid consistency and allow easier inspection and review of results checklists, tables and matrices have been employed. These include the use of matrices for the determination of significance thresholds, whereby the predicted magnitude of an effect is assessed against the sensitivity of a given receptor. This provides an indication of the level or significance of an effect (see table below).

The nature of an effect, whether adverse or beneficial, is a subjective consideration based on professional judgement and identified separately.

Identification of Mitigating Measures

Mitigation measures have been considered in relation to:

- primary measures which form part of the iterative design process; and
- secondary measures designed to address any residual adverse effects of the development.

Table: Landscape and Visual Impact Assessment

| SIGNIFICANCE THRESHOLD | | | | | | | | | |
|------------------------|-----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| MAGNITUDE | VH | VS | VS | SB | SB | SM | SM | M | NS |
| | H | VS | SB | SB | SM | SM | M | M | NS |
| | HM | SB | SB | SM | SM | M | M | MS | NS |
| | M | SB | SM | SM | M | M | MS | MS | NS |
| | ML | SM | SM | M | M | MS | MS | S | NS |
| | L | SM | M | M | MS | MS | S | S | NS |
| | VL | M | M | MS | MS | S | S | SI | NS |
| | N | NS | NS | NS | NS | NS | NS | NS | NS |
| | | VH | H | HM | M | ML | L | VL | N |
| SENSITIVITY | | | | | | | | | |

Significance Thresholds

KEY: VS – Very Substantial SB – Substantial SM – Substantial-Moderate
M – Moderate MS – Moderate-Slight S – Slight
SI – Slight-Imperceptible I – Imperceptible NS – Not Significant

Magnitude/Sensitivity

KEY: VH- Very High H – High HM – High-Medium
M- Medium ML- Medium-Low L - Low
VL – Very Low N- Negligible

Note: The above matrix is only used as a guide and never used to replace professional judgement, particularly in instances when assessing the nature of an effect (i.e. adverse, neutral or beneficial). Its purpose is solely to ensure consistency of approach and results.

Glossary of Terms

(Derived from current IEMA/LI Guidelines with additional glossary)

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| Access land | Land where the public have access either by legal right or by informal agreement. |
| Baseline studies | Work done to determine and describe the environmental conditions against which any future changes can be measured or predicted and assessed. |
| Characterisation | The process of identifying areas of similar landscape character, classifying and mapping them and describing their character. |
| Characteristics | Elements, or combinations of elements, which make a contribution to distinctive landscape character. |
| Compensation | Measures devised to offset or compensate for residual adverse effects which cannot be prevented/avoided or further reduced. |
| Competent authority | The authority which determines the application for consent, permission, licence or other authorisation to proceed with a proposal. It is the authority that must consider the environmental information before granting any kind of authorisation. |
| Consultation bodies | Any body specified in the relevant EIA Regulations which the competent authority must consult in respect of an EIA, and which also has a duty to provide a scoping opinion and information. |
| Designated landscape | Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans or other documents. |
| Development | Any proposal that results in a change to the landscape and/or visual environment. |
| Direct effect | An effect that is directly attributable to the proposed development. |
| 'Do nothing' situation | Continued change or evolution in the landscape in the absence of the proposed development. |
| Ecosystem services | <p>The benefits provided by ecosystems that contribute to making human life both possible and worth living. The Millennium Ecosystem Assessment (www.unep.org/maweb/en/index.aspx) grouped ecosystem services into four broad categories:</p> <ol style="list-style-type: none">1. supporting services, such as nutrient cycling, oxygen production and soil formation – these underpin the provision of the other 'service' categories;2. provisioning services, such as food, fibre, fuel and water;3. regulating services, such as climate regulation, water purification and flood protection;4. cultural services, such as education, recreation and aesthetic value. |
| Elements | Individual parts which make up the landscape, such as, for example, trees, hedges and buildings. |
| Enhancement | Proposals that seek to improve the landscape resource and the visual amenity of the proposed development site and its wider setting, over and above its baseline condition. |
| Environmental Impact Assessment (EIA) | The process of gathering environmental information; describing a development; identifying and describing the likely significant environmental effects of the project; defining ways of preventing/avoiding, reducing, or offsetting or compensating for any adverse effects; consulting the general public and specific bodies with responsibilities for the environment; and presenting the results to the competent authority to inform the decision on whether the project should proceed. |
| Environmental Statement | A statement that includes the information that is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but that includes at least the information referred to in the EIA Regulations. |
| Feature | Particularly prominent or eye-catching elements in the landscape, such as tree clumps, church towers or wooded skylines OR a particular aspect of the project proposals. |

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| Geographical Information System (GIS) | A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database. |
| Green Infrastructure (GI) | Networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities. |
| Heritage | The historic environment and especially valued assets and qualities such as historic buildings and cultural traditions. |
| Historic Landscape Characterisation (HLC and Historic Land-use Assessment (HLA)) | Historic characterisation is the identification and interpretation of the historic dimension of the present-day landscape or townscape within a given area. HLC is the term used in England and Wales, HLA is the term used in Scotland. |
| Indirect effects | Effects that result indirectly from the proposed project as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects. |
| Iterative design process | The process by which project design is amended and improved by successive stages of refinement which respond to growing understanding of environmental issues. |
| Key characteristics | Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place. |
| Land cover | The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use. |
| Land use | What land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry. |
| Landform | The shape and form of the land surface which has resulted from combinations of geology, geomorphology, slope, elevation and physical processes. |
| Landscape and Visual Impact Assessment (LVIA) | A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity. |
| Landscape capacity | The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character. Capacity is likely to vary according to the type and nature of change being proposed. |
| Landscape character | A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. |
| Landscape Character Areas (LCAs) | These are single unique areas which are the discrete geographical areas of a particular landscape type. |
| Landscape Character Assessment (LCA) | The process of identifying and describing variation of the character of the landscape, and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. The process results in the production of a Landscape Character Assessment. |
| Landscape Character Types (LCTs) | These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern, and perceptual and aesthetic attributes. |

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| Landscape classification | A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape. |
| Landscape effects | Effects on the landscape as a resource in its own right. |
| Landscape features | A prominent eye-catching element, e.g. wooded hill top and church spire. |
| Landscape quality (condition) | A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements. |
| Landscape receptors | Defined aspects of the landscape resource that have the potential to be affected by a proposal. |
| Landscape strategy | The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programmes or related documents. |
| Landscape value | The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. |
| Magnitude (of effect) | A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration. |
| Parameters | A limit or boundary which defines the scope of a particular process or activity. |
| Perception | Combines the sensory (that we receive through our senses) with the cognitive (our knowledge and understanding gained from many sources and experiences). |
| Photomontage | A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs. |
| Receptors | See Landscape receptors and Visual receptors. |
| Scoping | The process of identifying the issues to be addressed by an EIA. It is a method of ensuring that an EIA focuses on the important issues and avoids those that are considered to be less significant. |
| Seascape | Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other. |
| Sensitivity | A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor. |
| Significance | A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic. |
| Stakeholders | The whole constituency of individuals and groups who have an interest in a subject or place. |
| Strategic Environmental Assessment (SEA) | The process of considering the environmental effects of certain public plans, programmes or strategies at a strategic level. |
| Susceptibility | The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences. |
| Time depth | Historical layering – the idea of landscape as a ‘palimpsest’, a much written-over manuscript. |
| Townscape | The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces. |
| Tranquillity | A state of calm and quietude associated with peace, considered to be a significant asset of landscape. |

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| Visual amenity | The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area. |
| Visual effects | Effects on specific views and on the general visual amenity experienced by people. |
| Visual receptors | Individuals and/or defined groups of people who have the potential to be affected by a proposal. |
| Visualisation | A computer simulation, photomontage or other technique illustrating the predicted appearance of the development. |
| Zone of Theoretical Visibility (ZTV) | A map, usually digitally produced, showing areas of land within which a development is theoretically visible. |
| Zone of Significant Visibility (ZSV) | Area within a ZTV from which a proposed development is likely to draw the eye of a casual observer, based on field observations. |