

South Down National Park Authority

Shoreham Cement Works Local Landscape Character and Sensitivity Study

Final report Prepared by LUC May 2022





South Down National Park Authority

Shoreham Cement Works

Local Landscape Character and Sensitivity Study

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Chapter 1 Introduction and Background

Introduction

1.1 LUC was commissioned by the South Downs National Park Authority (SDNPA) in August 2021 to undertake a local landscape character and sensitivity evaluation to inform design principles. This work will form part of the landscape-led evidence base for the Area Action Plan (AAP) for the Shoreham Cement Works site (the Site).

1.2 Shoreham Cement Works is in the South Downs National Park (SDNP). The Site lies approximately 2km south of Upper Beeding and Bramber, 2.5km north of the junction of the A283 with the A27, and about 4km north of Shoreham town centre. The Site is located either side of the A283 where the River Adur cuts a gap through the South Downs. Shoreham Cement Works is a 44ha site including a semiderelict cement works, inactive chalk quarry, temporary inert recycling facility and a mix of temporary business uses. The location is shown on **Figure 1** and **Plate 1**, below.



Plate 1 – Shoreham Cement Works

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1.3 The Site forms a prominent position within the South Downs, and is located at the narrowest point of the SDNP. Although now an integral part of the SDNP's cultural and industrial heritage, the former cement works has altered the landscape. Existing permissions are in place for the extraction of chalk up until 2042, when a basic restoration scheme for the site would need to be implemented.

Project Aims and Objectives

1.4 This study comprised three separate, but related processes:

- Local Landscape Character Assessment;
- Landscape Sensitivity Evaluation; and
- Development of Design Principles.

1.5 The Local Landscape Character Assessment describes the patterns of elements that make up the distinctive character of each Local Landscape Character Area (LLCA).

1.6 The Landscape Sensitivity Evaluation determines the sensitivity of each LLCA to receive development. It makes recommendations regarding the developable area(s) that could be accommodated within the Site, whilst still achieving substantial landscape enhancement.

1.7 The Design Principles for each LLCA are drawn from the previous two stages of the study and consider a range of requirements to help the site receive appropriate development, which will conserve and enhance the natural beauty, wildlife and cultural heritage of the area (Purpose 1 of the SDNP).

Report Structure

1.8 The following report is structured as follows:

- Chapter 1 Introduction and Background;
- Chapter 2 Methodology;
- Chapter 3 Existing Baseline Information;
- Chapter 4 Landscape Character Classification and Sensitivity Results; and
- Chapter 5 Summary and Design Principles.

1.9 This report is supported by the following Technical Notes (TN):

- Appendix A TN1: Landscape Character Assessment Methodology; and
- Appendix B TN2: Landscape Sensitivity Evaluation Detailed Criteria.
- Appendix C Relevant Evidence, Policy and Guidance

Chapter 2 Methodology

Introduction

2.1 The following chapter summarises the methodology for the 'Local Landscape Character Assessment', 'Landscape Sensitivity Evaluation' and development of 'Design Principles'.

Local Landscape Character Assessment

2.2 The method adopted for the Local Landscape Character Assessment of the Site and surrounding area follows the guidance promoted by Natural England through 'An Approach to Landscape Character Assessment'. A full description of the method can be found in Technical Note 1 (TN1) in **Appendix A**.

- 2.3 The key aspects of this stage of work include:
- Production of a Zone of Theoretical Visibility (ZTV), based on the existing chimney at the site (approximately 85m above ground level), which was used to help define an appropriate study area (refer to Figure 2);
- Desk based review of the area's landscape character through mapping and reference to the existing landscape character assessments;
- Classification, ensuring an appropriate fit within the hierarchy of landscape character assessment, undertaken at the national through to a local level;
- Field survey to verify the classification of landscape types and areas and collect information on perceptual character, landscape condition, valued landscape features and key issues; and
- Writing the LLCA descriptions, with reference to the following landscape elements:
 - Geology and Soils
 - Topography and Water
 - Roads, Tracks and Paths
 - Settlements and Buildings
 - Woodlands and Trees
 - Fieldscape
 - Perceptual Qualities, Views and Visual Amenity.

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2.4 For each LLCA, opportunities and constraints were identified, helping to inform the design principles, as discussed below.

Landscape Sensitivity Evaluation

2.5 The Evaluation Assessment followed Natural England's 'An approach to landscape sensitivity assessment – to inform spatial planning and land management'¹.

2.6 At this stage, the layout, density and form of any proposed development at the Site is unknown. The landscape sensitivity evaluation of the LLCAs therefore assumed a range of possible development scenarios, from two-storey detached housing to 3 or 4 storey apartments, and mixed use development.

2.7 Landscape sensitivity evaluation requires consideration of both landscape 'susceptibility' and landscape 'value'. Value is the 'inherent' component of sensitivity, which is independent of the type of development proposed, while susceptibility depends on the type of development proposed and draws on the key characteristics of each LLCA, as defined at the previous stage.

2.8 The evaluation stage analyses the sensitivity of each LLCA to change to mixed used development. This is based on a series of evaluation criteria, as outlined below, with further explanation provided in TN2 in **Appendix B**.

- Physical and Natural Character and Function (which draws together evidence threads from consideration of landscape elements, including geology and soils/ topography and water);
- Cultural and Historical Associations (which draws together evidence threads from consideration of landscape elements, including settlement and buildings/ roads, tracks and paths/ woodland and trees/ fieldscape);
- Views and Visual Amenity; and
- Perceptual Qualities.

2.9 Criteria selection was based on the attributes of the landscape most likely to be affected by development, and considers both 'landscape' and 'visual' aspects of sensitivity. Aspects of value are drawn into the individual criteria (as outlined in paragraph 2.7) including representation of Special Qualities associated with the SDNP. Each criterion sets out indicators of higher and lower landscape and visual susceptibility and value.

2.10 The assessments for each LLCA were analysed against each criterion on a five-point scale (as shown in **Table 3.1**). The sensitivity definitions reflect how susceptible the character and quality of the landscape is to change. An overall sensitivity judgement is also included, recognising that some attributes or elements of the landscape may be more important in defining character than others and therefore may be more sensitive. The judgement is based on transparent professional analysis rather than a mechanical process of addition. This has also allowed the assessment to highlight any particularly sensitive landscape features or qualities, and factors that would need to be taken account of, should parts of the Site be suitable for development.

Table 3.1: Overall sensitivity ratings

Sensitivity	Definition
High	Development is very likely to give rise to significant adverse landscape and/ or visual effects.
Moderate - high	Development is very likely to give rise to adverse landscape and/ or visual effects, and there is some potential for these to be significant.
Moderate	Development is likely to give rise to some adverse landscape and/ or visual effects, but these would be limited in extent.
Low- moderate	Development may give rise to some minor adverse landscape and/ or visual effects, but these are unlikely to be significant.
Low	Development is very unlikely to give rise to significant adverse landscape and/ or visual effects. Greater opportunities for enhancement are likely to exist.

Development of Design Principles

2.11 Following the assessment of landscape character, classification and evaluation, design principles were identified. General design principles, are applicable across the whole site. Specific design principles address specific Local Landscape Character Areas.

2.12 The design principles were drawn up to: avoid negative landscape and visual impacts; maximise the conservation and enhancement of those landscape elements that contribute to character; and secure existing and/ or potential ecosystem services.

ploads/attachment_data/file/817928/landscape-sensitivityassessment-2019.pdf

https://assets.publishing.service.gov.uk/government/uploads/system/u

Chapter 2 Methodology

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Figure 1: Study Area and Key Components

- Site boundary
- 3km buffer of site boundary
 - Chimney

South Downs NP Landscape Character Assessment (2019)

- A2 : Adur to Ouse Open Downs
 - A3 : Arun to Adur Open Downs
 - F3 : Adur Floodplain
 - G3 : Adur Valley Sides
 - I2 : Adur to Ouse Downs Scarp
 - I3 : Arun to Adur Downs Scarp
- J2 : Adur to Ouse Scarp Footslopes
- J3 : Arun to Adur Scarp Footslopes
- ==== Public Right of Way

Listed Building - Grade

- ||*
- Ш
- Scheduled Monument
- OS Open River
- Flood Zone 2
- Flood Zone 3
- Risk of Flooding from River and Sea
- Local Nature Reserve
 - Site of Special Scientific Interest

Priority Habitat Inventory - Habitat type

- Coastal and floodplain grazing marsh
- Coastal saltmarsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland calcareous grassland
- Lowland meadows
- Mudflats
- No main habitat but additional habitats present
- Traditional orchard

CB:JH EB:Harbich_J LUC FIG1_11670_r0_KeyComponents_A3L_10/09/2021 Source: OS, LUC, SDNPA, HE, NE, WSCC



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Figure 2: Zone of Theoretical Visibility (ZTV)

- Site boundary
- 3km buffer of site boundary
 - Chimney

Chimney visible

ZTV layers were produced by SDNPA for the Chimney location using QGIS and the Global Mapper tool. The ZTVs were run using the OS Terrain 5m DTM. The height of the chimney is derived from the EA LiDAR 1m DSM (94m AMSL / ~85m AGL)

CB:JH EB:Harbich_J LUC FIG2_11670_r0_ZTV_A3L_20/08/2021 Source: OS, LUC, SDNPA

Chapter 3 Existing Baseline Information

Introduction

3.1 The following chapter sets out the existing baseline information for the Site and surrounding context. The Site is shown on **Figure 1.** Key features in relation to topography, drainage, land use, vegetation, settlement/ structures, access and recreation are mapped.

South Downs National Park

3.2 The Site is located in the South Downs National Park, either side of the A283, where the River Adur cuts a gap through the South Downs. As such, it is something of a pivotal location. The SDNP has 7 Special Qualities², as follows:

- "Diverse, inspirational landscapes and breath-taking views;
- A rich variety of wildlife and habitats including rare and internationally important species;
- Tranquil and unspoilt places;
- An environment shaped by centuries of farming and embracing new enterprise;
- Great opportunities for recreational activities and learning experiences;
- Well conserved historical features and a rich cultural heritage; and
- Distinctive towns and villages, and communities with real pride in their area."

Landscape Character

3.3 The Guidelines for Landscape and Visual Impact Assessment (Third Edition, 2013) define landscape character as:

"A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse."

3.4 In terms of the Natural England National Landscape Character Areas, the Site (and surrounding study area that

² https://www.southdowns.gov.uk/wp-content/uploads/2015/03/SDNP-Special-Qualities.pdf

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falls in the SDNP) is located in the South Downs National Character Area³.

3.5 At the South Downs National Park level, the majority of the site is located in the Major Chalk Valley Sides – G3: Adur Valley Sides⁴. The western extent of the site falls within the Major Chalk River Floodplains – F3: Adur Floodplain⁵.

3.6 In terms of county level landscape character, the Landscape Character Assessment of West Sussex (2003) applies. This covers the districts of Adur, Arun, Chichester, Horsham, Mid Sussex, Crawley and Worthing. The West Sussex LCA provides an assessment of part of the South Downs along with its wider landscape setting. The site itself falls within SD5: Downland Adur Valley.

3.7 Other relevant character areas include SD6: Eastern Downs, which form the eastern extent of the study area, and SD3: Central Downs, which form the western extent of the study area. In addition, WG8: Central Scarp Footslopes, LW9: Upper Adur Valley and SC13: Worthing & Adur Fringes all fall within the study area.

3.8 The key characteristics of each landscape character area/ type that are of relevance to the site are referenced in Appendix Table C.1 (refer to **Appendix C**). This is organised into the various landscape elements that are considered by this study.

3.9 Appendix C also contains summaries of further evidence, policy and guidance that helped to inform this study.

http://publications.naturalengland.org.uk/publication/7433354?categor y=587130

⁴ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-G-Major-Chalk-Valley-Sides.pdf

⁵ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-F-Major-Chalk-River-Floodplains.pdf

Chapter 4 Landscape Character Classification and Sensitivity Results

Study Area

4.1 Shoreham Cement Works (**Figure 1**) is a 44ha site comprising a semi-derelict cement works, inactive chalk quarry, temporary inert recycling facility and a mix of temporary business uses. The site is located either side of the A283 where the River Adur cuts a gap through the South Downs.

4.2 The landform to the east and west of the site rises towards Beeding Hill (168m AOD) to the east and Annington Hill (125m AOD) to the west.

4.3 The River Adur Valley is characterised by grassland, with some crops and areas of woodland. Land use is largely agricultural and the higher ground to the east and west includes unenclosed chalk grassland and large fields used for sheep grazing producing an open pastoral character, particularly to the east.

4.4 The site lies approximately 2km south of Upper Beeding and Bramber (including its castle), 2.5km north of the junction of the A283 with the A27, and about 4km from Shoreham town centre.

4.5 The Downs Link footpath and cycle route passes to the west of the site, along the valley floor of the River Adur. The South Downs Way and Monarch's Way pass across the valley to the north of the site.

4.6 There is a network of Public Rights of Way and recreational facilities in the Adur Valley, including fishing ponds and a farm park at Coombes. The study area and LLCA, as described further below, are shown on **Figure 3**. An overarching analysis of the opportunities and constraints for the LLCAs within the site is shown on **Figure 4**, at the end of this chapter.

4.7 The following chapter presents information on the Landscape Character Areas which cover the Shoreham Cement Works Site. It includes information on key characteristics, opportunities and constraints and a landscape sensitivity evaluation. Further context, on the LLCA across the wider study area is included at the end of **Appendix C**.



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CB:JH EB:Harbich_J LUC FIG3_11670_r0_LocalLCA_A3L 10/09/2021 Source: OS, LUC, SDNPA



Figure 3: Local Landscape Character Areas

- Site boundary
- 3km buffer of site boundary
 - Chimney

- Local Landscape Character Area
- 1a. Shoreham Cement Works West of A283
- 1b. Shoreham Cement Works East of A283
- 2. Shoreham Cement Works Beeding Hill Lower Quarry
- 3. Shoreham Cement Works Beeding Hill Upper Quarry
- 4. Adur Valley Floodplain
- 5. Eastern Adur Valley Sides
- 6. Eastern Adur Valley Sides
- 7. Western Adur Valley Sides
- 8. Eastern Adur Open Downlands
- 9. Ardur Downs Scarp
- 10. Western Adur Valley Sides
- 11. Adur Scarp Footslopes
- 12. Western Adur Open Downs

LLCA 1a – Shoreham Cement Works West of A283





Landscape Evidence

This LLCA has an industrial character. Derelict and modern concrete warehouses are surrounded by large service yards. Despite the open nature of the valley floor, the area feels enclosed by the raised A283 and surrounding thick belts of trees.

This LLCA is located to the west of the A283 and situated within one of the characteristic broad meanders of the River Adur. The banks of the river form the area's north-western boundary, yet the river is hidden from view by trees. The Downs Link marks the south western boundary of the LLCA, with adjoining grazing marsh reflecting the open character of the Adur floodplain.

Key Characteristics:

- Geology and Soils The valley floor's alluvial drift geology and loamy, clayey soils contrast with the shallow, limerich soils on the valley sides. Within the LLCA, the influence of soils and geology and their ability to perform functions is reduced due to its raised location above the riverbank, and widespread use of concrete hardstanding.
- Topography and Water This LLCA is flat, so in this sense it is characteristic of its wider context. However, the site has been uncharacteristically raised as a means of flood defence. The industrial land use has negatively affected the natural patterns of drainage, although some parts of the area continue to experience groundwater and surface water flooding, characteristic of its floodplain location. Historically, this landscape was drained using ditches and the river itself has been manipulated by artificially raised banks.
- Roads, Tracks and Paths Routes here are subservient to the characteristic north-south route through the valley, the road (A283) and railway (South Downs Link). LLCA1 is severed from the rest of the site by the A283. Road routes are not defined, rather they are connected expanses of hardstanding serving each building, with minimal/no engineering. Internally, smaller rail routes peeled off in curves from the main rail line, following the river and relating to the built form and functions performed on the site. A key rail route encircled this site from the south, linking via the underpass to LLCA1b. Many smaller routes are now unclear, although rail tracks can still be seen in places. These patterns and materials (concrete) create an informal, industrial character.

Key Characteristics (cont):

- Settlements and Buildings Built form is not characteristic of this floodplain landscape and the poor quality buildings (and poor state of repair) further detract from the undeveloped riparian character. The original industrial buildings served by the railway have been lost. Today, the pattern of built form is focused on the eastern half of the LLCA, possibly relating to the road. There remains a clear relationship between the large industrial units and the open spaces that serve them. A mix of uses occur here, utilising the variety of buildings and spaces. The large scale of the buildings and simple, industrial building materials used across the LLCA starkly contrast with the lack of built form across the River Adur floodplain.
- Woodlands and Trees There is a low incidence of trees within the floodplain and so the lack of trees within this LLCA is characteristic of its context. The boundary of the LLCA is coincidental with the disused railway line, which is marked by a line of trees (mainly comprising Ash). Beyond the site, trees tend to follow contours, especially where the floodplain meets the valley sides. Uncharacteristic non-native trees are present within or near the site.
- Fieldscape The site is not typical of its context, having been first a chalk pit (northern part) and then used for industry. It has been removed from the wider pattern of floodplain fields, since the 1840s. Historically LLCA1a was two land parcels split east-west by a ditch. The LLCAs context however remains largely unchanged. The relatively small-scale and regular pattern of fields are characteristic of the floodplain and remain historically coherent. The site's boundary with the river remains the oldest. Historically salt marsh was present to the south.
- Perceptual Qualities, Views and Visual Amenity This LLCA is an anomaly in terms of its landscape context. As a result of the land use, it feels industrial in character. Raised above the banks of the Adur and screened by trees, the visual and physical relationship with the river is somewhat lost. The stark contrast between the highly developed nature of the LLCA and the rural floodplain to the west, is apparent. The evident man-made intrusion of hard-standing, buildings, vehicles and the adjacent A283 reduces the tranquillity of the LLCA in comparison to its floodplain landscape. The trees go some way to mitigate the built form in views from the west. To the immediate west of the LLCA, the river corridor is characteristically dark with no artificial lighting.

Opportunities and constraints:

- Geology and Soils Opportunities exist through the site's redevelopment to expose soils, enabling them to perform needed functions, such as carbon storage, water management and supporting characteristic riparian vegetation.
- Topography and Water There is opportunity to address climate change through the restoration of ecosystem services associated with a functioning floodplain landscape, including water cycling and management, through using characteristic (linear) SuDS features and connected blue infrastructure. The level change between the A283 and the site could constrain layout options, but opportunities may also exist to restore natural levels in at least part of the site, as part of comprehensive water management.
- Roads, Tracks and Paths There is opportunity to connect with the Downs Link, inspired by the pattern of routes. Opportunities exist to re-instate the routes of the former railway as it crosses the River Adur, to enhance cycling and walking connections through the underpass to address the severance caused by the A283. Other opportunities include: to retain industrial character and distinctiveness by avoiding suburban/standard highway treatments to any routes off the A283; to promote and improve public transport reducing the need for and impacts of, private cars; to include a bike hub on site to maximise opportunities for sustainable travel and tourism; and to use industrial features for characteristic placemaking.
- Settlements and Buildings The possibility of restoration of buildings is limited. Opportunities to reuse materials however are significant. Design opportunities to deliver unobtrusive (given built form is not characteristic), high quality built form that helps to re-establish a connection to the eroded riparian character of this LLCA are significant. Flood risk

provides opportunity to create a new building typology. Restoration of the relationship between built form and roads/routes provides a key opportunity to conserve and enhance character. Flood risk may constrain the amount of development possible. Larger-scale built form should be developed given domestic-scale architecture is not characteristic. There is opportunity to respond to current varied buildings and uses through the provision of workshops, studios and shared workspaces. Buildings of architectural interest could be made safe and used as canvases for artwork.

- Woodlands and Trees There is opportunity to conserve and enhance existing trees to deliver multi-functional benefits, such as mitigation of the A283 (including noise and air quality). Existing Ash trees along the Downs Link are likely to succumb to Ash Die Back, so development affords opportunity to provide replacement native trees within the site to conserve this key characteristic. Overall, conserving and enhancing the relationship between linear tree belts and communication networks provides a key opportunity to enhance characteristic green infrastructure (GI) and the ecosystem services it delivers.
- Perceptual Qualities, Views and Visual Amenity There is opportunity to improve human-scale visual links between the site and the floodplain, whilst maintaining the limited long-distance views from the west. In addition there is opportunity to enhance the tranquility experienced on the site through careful layout choices; to re-connect the site and people with the floodplain landscape and restore some of this lost character; and to conserve and enhance the dark river corridor.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Landscape elements: Geology and Soils Topography and Water 	A topographically flat landscape, with areas that have been artificially raised in the site, adjacent to the River Adur and its meandering corridor. At present, the LLCA performs a limited number of floodplain functions compared to neighbouring areas of important floodplain grassland and flood storage.	Low
Cultural and Historical Associations Landscape elements: • Settlements and Buildings • Roads, Tracks and Paths • Woodlands and Trees • Fieldscape	The area represents an important piece of the South Downs' industrial heritage, particularly the re-building of the works following the Second World War and remains of the former railway tracks. Larger scale concrete buildings from this period remain within the area and are monolithic in scale. However, their scale and poor condition detracts from the surrounding character of the floodplain. The lack of fieldscapes and traditional enclosure means the sense of agricultural history within the area has been lost.	Low-moderate
Views and Visual Amenity	Buildings within the LLCA form middle-ground features within slightly elevated views across the valley from the west and within certain views from the quarry itself, from the east. They are also highly visible within shorter views from the A283 and users of the Downs Link and Public Rights of Way along the River Adur, between breaks in the surrounding vegetation. However, vegetation surrounding the area means intervisibility between the LLCA and the wider floodplain landscape is somewhat limited.	Moderate-high

Landscape Sensitivity Evaluation

Criteria	Commentary	Sensitivity
Perceptual Qualities	Due to the persistent rumble of the A283 and the workings of the site at present, this area affords a much lower sense of tranquillity compared to other locations within the Adur Valley. The sense of enclosure is high due to surrounding dense vegetation and buildings. However, glimpsed views through trees means the open nature of the Adur Valley corridor can still be appreciated, and the stark contrast between the highly developed nature of the LLCA and the rural floodplain to the west is apparent.	Low
Overall Sensitivity	Although the LLCA inhabits a prominent location along the course of the River Adur within the South Downs National Park, the poor condition of the landscape and its accompanying elements, and the evident highly developed and urban/ industrial character, means the area is afforded an overall low-moderate sensitivity.	Low-moderate

LLCA 1b - Shoreham Cement Works East of A283





Landscape Evidence

Housing the main portion of the former cement works, this LLCA is dominated by the huge concrete kiln sheds and the locally iconic chimney. The combination of steep quarried chalk cliffs and monumental industrial buildings provide a sense of enclosure and significant visual and physical ties to the site's industrial heritage.

This Local Landscape Character Area is located directly to the east of the A283 and sits within the first of three quarry 'carvings' that cut into Beeding Hill.

Key Characteristics:

- Geology and Soils The chalk geology is significant in this area defining both the valley sides and many aspects of this site's character. Chalk has determined the siting and development of the cement works (and other smaller extraction sites along the valley sides) and it is now a prominent and visible characteristic. The exposures of geological strata here have national and international significance in terms of understanding chalk geology and for the fossil records they hold. Soils remain only along the frontage with the road, as elsewhere they have been stripped.
- Topography and Water The lower rounded western flank of Beeding Hill was excavated forming a topographically level floor with sharp quarried chalk cliffs that encircle the former cement works in the north, south and east, creating a local microclimate. This contrasts with the gently sloping valley sides. Whilst water is characteristically stored below ground in chalk landscapes, small areas of shallow, standing water do accumulate in the site. Water quality is likely to be poor due to historic land contamination.
- Roads, Tracks and Paths A primary vehicle route encircles the LLCA, characteristically relating to the topography by following the contours. This route links to LLCA1a via the underpass. Subservient to the A283, routes into the site run perpendicular to it and quickly become understated (unengineered) functional tracks comprising chalk bedrock and clearly relating to the main building and site functions. Pioneer and important chalk-loving vegetation bound the tracks as part of a mosaic habitat. The A283 acts as a barrier to access the river, LLCA1a and wider landscape across the only 'open' part of the site.

Key Characteristics:

- Settlements and Buildings Buildings and working spaces are only located in the southern half of the LLCA, with the largest buildings orientated east west, with frontage to the A283. The vast kiln sheds, cement storage silos and 91m chimney dominate this site. Buildings are matched in scale by quarried chalk cliffs surrounding them. The state of disrepair of the buildings detracts from the important industrial heritage they represent (the first modern cement works built by Oscar Faber). The scale of the buildings and materials contrast with the characteristic sparse settlement of historic farmsteads along the valley sides.
- Woodlands and Trees In common with its context, trees follow the contours, located on the slopes of the quarry faces where natural regeneration has occurred. The southern cliffs and those along the A283 are the most heavily wooded and trees are establishing at the foot of the slopes in the northern part. The broad-leaved woodland that covers the cliff faces along the southern edge merges with the small woodland above, creating a green wall and physical GI links to the wider landscape.
- Fieldscape The characteristic field pattern has been interrupted, due to the gradual extraction of chalk seen over the past 150 years. This reduces the sense of history which is afforded to areas of neighbouring open downland. However, time-depth (the layers of change from agriculture to industry) remains at the site and the abrupt transition between the site and downland is important for this experience. Valuable semi-improved calcareous grassland surrounds the main entrances.
- Perceptual Qualities, Views and Visual Amenity Imposing man-made structures and influences dominate the experience of this site it looks and feels industrial in character. Buildings, whilst significant in size, are largely experienced in local views only and their muted colours and simple facades help them sit well in their context. The cliff faces shield views further into the site, disguising its vast scale. The strong sense of enclosure, and contrast with surrounding open downland contributes significantly to the way this site is experienced, as an interruption to the characteristic smooth-sided, agricultural valley. The proximity of tall buildings and high cliffs create a canyon of movement through the site. There is a strong sense of the industrial character slowly giving way to one of decay and environmental regeneration.

Opportunities and constraints:

- Geology and Soils There are opportunities to provide for greater public access to this unique and internationally important geological asset; to determine a use that maximises this opportunity; and to consider the use of chalk in design/construction. Land contamination may constrain some development but opportunities to clean up the site are also significant. The lack of soils is a constraint to certain types of development and imported soils would negatively change the character and special qualities of the site.
- Topography and Water The encircling chalk cliffs constrain development (cliff falls, microclimate). To retain character, important habitats, significant geological interest and industrial heritage, will be conserved and enhanced through retaining and managing the cliffs. Enhancement of water quality is needed and there are many opportunities to manage water for multiple benefits exist, in line with good SuDS design.
- Roads, Tracks and Paths There is opportunity to conserve and enhance the understated industrial character of tracks through characteristic road location and design alongside prioritisation of non-motorised vehicles/ pedestrians; and to address the severance caused by the A283 by maximising the opportunity for all to use the underpass/other means.
- Settlements and Buildings There are opportunities to: maintain the site's prominence and link to its industrial heritage by retaining/re-purposing the chimney; and to develop large buildings following the characteristic patterns and forms. The potential for large buildings provides further opportunity to explore alternative building materials that speak of this site, will reduce embodied carbon, and enhance efficiency and resilience. Seeking a sustainable response to microclimates (shade and glare/heat from cliffs) whilst contributing positively to character is a key design challenge. Improving the quality of built form and the experience of the site from the road is also a significant opportunity.
- Woodlands and Trees There is opportunity to maintain the characteristic association of trees with the cliff faces, and to maintain their value for wildlife and delivery of ecosystem services. Tree planting is constrained due to the lack of soils.

Key areas of sloping ground could be allowed to naturally regenerate to conserve the characteristic pattern of trees and maintain the cycle of succession. Balancing this succession with retaining and enhancing geological strata and mosaic habitats is vital. There is opportunity to use trees to contribute to GI and ecosystem services (air quality), connecting wooded sites along the A283 – in balance with existing important habitats.

Perceptual Qualities, Views and Visual Amenity – There is opportunity to conserve and enhance the industrial character and imposing stature of the cliffs through all aspects of design; to address the poor quality of existing buildings, particularly along the road frontage; and to use new buildings to retain the site's industrial character and reduce the impact of noise and pollution from the A283. Visual links with surrounding cliffs should be conserved and opportunities exist through design to conserve and enhance dark night skies.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Landscape elements: Geology and Soils Topography and Water 	A man-made/ exploited flat landscape encircled by dramatic chalk cliff faces to the north, south and east. Areas of vegetation growth on bare ground has given rise to natural succession and unique microhabitats providing important ecosystem services. The chalk cliffs are a unique and significant geological asset with similar assets along the M3 at Winchester and the Seven Sisters cliffs slowly being lost to vegetation growth and erosion. The high quarried cliffs and buildings create a varied microclimate across the area, with consistent shade experienced in the extreme south.	Moderate
Cultural and Historical Associations Landscape elements: • Settlements and Buildings • Roads, Tracks and Paths • Woodland and Trees • Fieldscape	The pattern of roads, tracks and fieldscape across the LLCA is at odds with the wider eastern Adur River valley side. The buildings associated with the former cement works have fallen into disrepair and contrast with the scale and character of historic built form, which contributes more positively to the South Downs National Park. However, these buildings represent important industrial heritage features for the local area. The chimney is noted as a particularly important landmark for locals. To the south, north and west, pockets of deciduous woodland and dense scrub provide important shelter and habitat for local wildlife.	Moderate
Views and Visual Amenity	The 91m chimney is a recognised landmark within the South Downs View Characterisation and Analysis study, and can be viewed from a number of promoted walking routes, such as the South Downs Way and Monarch's Way; popular hill summits, such as the Cissbury Ring; and in glimpsed views from the A27 and railway line to the south. Visibility into the LLCA is prominent when viewed from the western side of the Adur Valley, particularly along Coombes Road. However, enclosure by the quarried chalk cliffs, buildings and vegetation means intervisibility is limited when in the cement works themselves.	Moderate-high
Perceptual Qualities	Buildings and quarried chalk cliffs afford a high sense of enclosure when in the LLCA. Tranquillity is reduced due the obvious human activity and proximity of the A283. The area has a highly developed industrial character that is slowly giving way to industrial decay and regeneration.	Low

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Criteria	Commentary	Sensitivity
Overall Sensitivity	The LLCA hosts large-scale, monolithic buildings that are uncharacteristic of the South Downs National Park, with the chalk cuttings creating noticeable alterations to the landscape. However, the chimney is an important local landmark and the chalk cliffs provide an significant insight into the geological history of the South Downs, therefore affording this LLCA a moderate sensitivity.	Moderate

LLCA 2 – Shoreham Cement Works Beeding Hill Lower Quarry





Landscape Evidence

This area is characterised by its vast amphitheatre shape carved into the western flank of Beeding Hill, the sheer chalk cliffs see some grading in height that provide steps of vegetation and a horizontal patchwork of green and white on the cliff faces. This is mirrored on the once bare quarry floor that has now developed a mosaic of scrub, ephemeral and short perennial habitat.

This LLCA forms the second of three quarry carvings that cut into Beeding Hill in the Shoreham Cement Works and sits to the east of the A283.

Key Characteristics:

- Geology and Soils Chalk geology drives the character here. Striking in this LLCA, are the horizontal pattern of strata and subsequent horizontal pattern of tracks and vegetation. The exposures of geological strata here have national and international significance in terms of understanding chalk geology and for the fossil records they hold. Areas of bare ground expose debris of the chalk that was once quarried here.
- Topography and Water Topography is characterised by a relatively level quarry floor, with numerous spoil heaps. The area is encircled by sheer quarried chalk cliffs, which are markedly more dramatic in the south, with some grading in height. The cliffs in the north are lower, stepped to provide access tracks to the upper quarry. The cliff faces create areas of shade to the south and accentuate sunlight in the north. There are no permanent water bodies in this area.
- Roads, Tracks and Paths There are no roads within this LLCA. Tracks are ephemeral producing a very light and temporary character. The unmade tracks traverse the chalk of the quarry floor, following the contours to provide access to the upper levels in the north and encircling the cliff base. Low level pioneer vegetation delineates the tracks in places. A historic east-west route through this part of downland existed pre-extraction.
- Settlements and Buildings Only a small amount of built form exists within this area, limited to the two small corrugated tin sheds and a connecting chute in the southern part of the site. Their orientation and location links closely with the flat topography and built form in LLCA1b and the gap in the cliffs. Built form is of a significantly smaller scale than that within LLCA1b. The simple, industrial building materials characterise the structures here.

Key Characteristics:

- Woodlands and Trees Trees are sparse here and scrub dominates, comprising stands of buddleia and tall ruderal vegetation that follow the contours and colonise spoil heaps. Vegetation is less mature than in LLCA1b and clearly occupies areas of least disturbance. The tracksides and lower cliff faces, particularly where shelves exist are well-vegetated, creating strong horizontal patterns.
- Fieldscape The historic pattern of large unenclosed fields has been lost to extraction. This reduces the sense of history. However, time-depth experiencing the change from agriculture to industry remains at the site. The vegetation now relates to extraction/disturbance as opposed to agriculture. Vegetation has marked relationships with the contours and tracks, creating horizontal patterns on the cliffs. On the quarry floor, is a patchwork pattern of mosaic habitat continuous scrub, bare ground and ephemeral / short perennial vegetation exists across the quarry floor. This mosaic pattern of vegetation is distinct from the surrounding homogenous open downland.
- Perceptual qualities, Views and Visual Amenity The historic quarried character of the site is increasingly influenced by natural regeneration and the gradual return of nature. The 'environmental' qualities of this site play a larger part in its character due, in part, to the limited amount of built form. Tranquillity is reduced to the west, but increases further east. This site is visually contained, but panoramic views across the site and valley (including to key landmarks) are afforded from the cliff-side tracks on the northern edge. The site plays an important transitional role between land characterised by industry near the A283 and land characterised by nature further east.

Opportunities and constraints:

- Geology and Soils There are opportunities to: improve access/education to this unique geological strata; and to use chalk in design/construction. Land contamination constrains development, but opportunities to clean up the site may be reduced due to important established habitats. The lack of soils constrain certain types of development. Imported soils could negatively change the character and special qualities of this site.
- **Topography and Water** There are opportunities: to retain and respond to topography to conserve and enhance sense of place; and to store water seasonally at the surface. The cliffs, their microclimates and potential instability constrain development around the site edges. There is opportunity to maximise the 'natural' qualities of the 'amphitheatre'.
- Roads, Tracks and Paths There are opportunities to conserve and enhance the understated industrial character of the chalk tracks by retaining for non-motorised users. Vehicular access is constrained within this LLCA, as engineered roads would undermine its distinctive character. Opportunities exist for the informal character of routes to influence the type of development here.
- Settlements and Buildings There are limited opportunities for new built form. Key industrial components associated with the cement works are an important link to the National Park's industrial heritage and key buildings could be retained and accommodated on site in some way. Small scale structures for recreational use, which re-use existing building footprints and mass, may be appropriate.
- Woodlands and Trees Opportunity exists to guide some natural regeneration of trees on the characteristic sloping/steeper aspects of the site. Balance however, will need to be struck with the rare, mosaic habitats within the site and ensuring exposed cliffs remain for their geological and ecological importance. There is opportunity to use characteristic patterns and types of vegetation to maximise GI connectivity between different LLCAs.
- Fieldscape The significant ecological value of this site is likely to constrain opportunities for built development. The ecological value will be maximised through careful choices of the uses proposed.
- Perceptual Qualities, Views and Visual Amenity Opportunities to enhance provision for wildlife, and people's understanding of it are significant. The 'amphitheatre' cliffs are visible in longer distance views, but the lower, flatter parts of the site are less visible in longer distance views. Within the cement works, this LLCA is visually exposed and sits higher than LLCA1b.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Landscape elements: Geology and Soils Topography and Water 	A relatively level topography with intermittent spoil heaps and undulations almost completely encircled by steep and dramatic quarried chalk cliffs, combining to create an enclosed but large-scale landscape. The chalk cliffs are a unique and significant geological asset that provide an insight into the deep past of the Downs. At present, this insight is at risk of being lost due to natural succession, with current vegetation providing somewhat limited habitat value. With the quarry now out of use and public access restricted, the area provides limited cultural ecosystem services in its current state. Shallower cliffs along the southern boundary make for a less shaded southern extents, compared to LLCA1b.	Moderate-high
Cultural and Historical Associations Landscape elements: • Settlements and Buildings • Roads, Tracks and Paths • Woodlands and Trees • Fieldscape	The pattern of tracks and fieldscape across the LLCA is at odds with the wider eastern Adur Valley side. This area is less built up than western parts of the cement works and the built form that exists has fallen into disrepair. This therefore contrasts with the scale and character of historic built form that contributes more positively to the South Downs National Park. Nevertheless, these represent important industrial heritage features for the local area.	Low-moderate
Views and Visual Amenity	Visibility into the LLCA is available when viewed from the west, particularly Coombes Road, but also the South Downs Way and the Monarch's Way. When in the area, enclosure by the quarried chalk cliffs makes for limited views out of the LLCA apart from more elevated vantage points in the north-west corner. From this vantage point, spectacular views can be had across the Adur Valley and towards Lancing College, a noted landmark within the View Characterisation and Analysis study.	Moderate-high
Perceptual Qualities	Vegetated and bare chalk cliffs afford a high sense of enclosure when in the LLCA, whilst also experiencing a spectacular large-scale landscape. Tranquillity is reduced due to some remnants of human activity. However, peacefulness increases as you move further from the A283. The altered quarried character of the landscape is influenced by the gradual return of nature.	Moderate
Overall Sensitivity	The abrupt chalk cliffs that encircle the amphitheatre-shaped quarry give rise to a high sense of enclosure in a dramatic large-scale landscape, which is iconic of the local area's industrial past. The landscape displays a regenerative and unique character. This, when combined with the panoramic views from the west of the LLCA across the Adur Valley and towards Lancing College, affords the LLCA a moderate-high sensitivity.	Moderate-high

Landscape Sensitivity Evaluation

LLCA 3 - Shoreham Cement Works Beeding Hill Upper Quarry





Landscape Evidence

With its increased distance from human activity this LLCA affords a strong sense of tranquillity and peacefulness. Hosting a more topographically varied quarry floor than the rest of the site, a rectangular basin in the south sits below a raised shelf to the north and east. Sheer quarried chalk cliffs with minimal vegetation wrap around the north, east and southern sides of the carving, allowing for spectacular views towards the west, over the Works and Adur Valley.

This LLCA forms the last of three quarry carvings and is characterised by its rectangular shape carved into the mid-western flank of Beeding Hill.

Key Characteristics:

- Geology and Soils The chalk geology is most obvious in this LLCA. The chalk cliff faces are little-vegetated and include bands of black flint, giving an important insight into the deep geological past of the Downs. The exposures of geological strata here have national and international significance.
- Topography and Water The rectangular basin lies higher than that of the neighbouring site and is enclosed by steep, double-stepped chalk faces to the north, east and south. These encircle the undulating and occasionally steep topography of the basin below. This is in stark contrast with the surrounding rounded rising terrain on the western flank of Beeding Hill. There are no permanent water bodies in this area and the cliffs create their own microclimate, magnifying the extremes of weather.
- Roads, Tracks and Paths Narrow, informal tracks traverse the stepped levels, running east-west along the northern edge as they climb towards the back of the quarry. The simple chalk routes are highly informal and temporary in their character these routes peter out towards the far east of the site.
- **Settlements and Buildings** There is no built form within this part of the quarry.

Key Characteristics:

- Woodlands and Trees Few trees are present. Where they exist the relate to the contours and tend to be linear in pattern. Cliffs to the north and east remain relatively vegetation-free, whereas the southern cliffs see a more developed succession of small trees and scrub.
- Fieldscape This site includes part of the open downland above the quarry, which is part of the field pattern now largely lost to extraction. This field includes remnant chalk grassland. It has a mosaic habitat that includes bare ground along with ephemeral/short perennial and scattered scrub, covers the quarry floor.
- Perceptual qualities, Views and Visual Amenity The overwhelming experience is one of nature coming back. The site feels remote and other-worldly as it slowly regenerates. A high degree of peacefulness and tranquillity is experienced due to the lack of human activity, buildings and noise, despite being surrounded by an evidently manmade landscape. Long-distance views across the Adur Valley to the west are possible and the eastern cliff face is particularly prominent in views back towards the site from the west. The high cliffs and shape of the basin produce a cathedral-like quality and a desire to look up.

Opportunities and constraints:

- Geology and Soils In common with other LLCAs, this area's chalk cliffs provide for opportunities to sensitively explore and understand these important geological sequences.
- **Topography and Water** Retaining the site's topography provides a key opportunity to conserve it's character. There is opportunity to conserve and enhance the cliffs for their significant cultural heritage, wildlife and geodiversity value.
- Roads, Tracks and Paths Vehicular access into this LLCA is not possible. Access to this area is heavily constrained by the lack of roads, the steep slopes and uneven terrain and the temporary understated character of routes.
- Settlements and Buildings The lack of built form and overt human activity (despite the past use of the site) significantly constrain any opportunity for new development.
- Woodlands and Trees There is limited opportunity for new trees, however balance may be needed to manage natural regeneration alongside maintaining other sensitive habitats in this site.
- Fieldscapes There is opportunity to enhance the existing chalk grassland above the quarry site. Opportunities for development are significantly constrained by the important habitats and species present. There is opportunity to provide sensitive and low-key opportunities to understand and enjoy the unique ecological qualities of this site.
- Perceptual Qualities, Views and Visual Amenity There is opportunity to enhance the perceptual characteristics, notably wildlife (experience of it), tranquillity and the strong sense of remoteness and regenerating nature through sensitive uses. This LLCA is open, exposed and elevated making it highly visible even in longer distance views, further limiting change.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Landscape elements: Geology and Soils Topography and Water 	The sheer quarried chalk cliffs dominate the experience of this area when viewed at the human-scale, giving a sense of enclosure whilst retaining long distance views over the Adur Valley to the west. The chalk cliffs are a unique and significant geological asset and provide an insight into the deep past of the Downs. At present, this insight is at risk of being lost due to natural succession, with current vegetation providing somewhat limited habitat value. Some notable species, including peregrine falcons, use man-made holes in the cliff faces to nest. With the quarry now out of use and public access restricted, the area provides limited cultural ecosystem services in its current state. Some areas of consistent low light are had along the southern boundary. However, the lack of vegetation on the white chalk creates an extremely bright and open landscape.	Moderate-high
Cultural and Historical Associations Landscape elements: • Settlements and Buildings • Roads, Tracks and Paths • Woodlands and Trees • Fieldscape	The pattern of tracks and fieldscape across the LLCA is at odds with the wider eastern Adur Valley side and adjoining open downland. The LLCA lacks any built form. As one of the last remaining chalk quarries within the South Downs, the distinctive white chalk faces of this area are iconic in terms of the National Park's industrial heritage, and can be viewed for miles around.	Low-moderate
Views and Visual Amenity	This area is the most elevated within the Shoreham Cement Works site. Visibility into the LLCA is available when viewed from the west, including from promoted walking routes. The elevated position of this LLCA means any new development in this area has the potential to be seen on the skyline in wider views from the River Adur Valley and surrounding hill summits, contrasting with the undeveloped nature of the surrounding open downlands. When in the LLCA, long-distance views can be had across the Adur Valley and further afield, as well as over the former Shoreham Cement Works buildings and chimney.	High
Perceptual Qualities	A high degree of peacefulness and tranquillity is experienced when in this LLCA due to the lack of human activity and external noise, despite being surrounded by an evidently man-made landscape. A high sense of enclosure is created by the chalk cliffs, whilst spectacular long- distance views can be had westwards. The altered quarried character of the landscape is influenced by regeneration and the gradual return of nature. These features combine to create a unique sense of place.	High
Overall Sensitivity	Although an obvious man-made scar on the landscape and lacking a perceived naturalness, the quarry creates a unique sense of tranquillity and enclosure when experienced on the ground, as well as geological interest and rare niche microhabitats, affording the LLCA a high sensitivity.	High

Landscape Sensitivity Evaluation

Chapter 4 Landscape Character Classification and Sensitivity Results

Shoreham Cement Works May 2022 Figure 4 - Shoreham Cement Works - Opportunities and Constraints Plan





Figure 4 - Shoreham Cement Works - Opportunities and Constraints Plan

Site-wide opportunities and constraints

- Where costs associated with remediating areas of contaminated land for sensitive elements of development (including residential use) are prohibitive, opportunities should be explored to promote less sensitive land uses such as public open space/ wildlife habitats, which provide natural capital. However, this may still require some treatment or capping.
- 2 New buildings should respond to the underlying contours of the site, utilising flatter areas of ground.
- 3 Where it is not possible to retain existing structures, opportunities should be explored to utilise existing building foundations and footprints. Large slabs of concrete can be costly to remove and dispose of. Where these offer suitable scope for reuse, for new building foundations and/ or areas of public realm, this should be explored. Consideration will be needed for the constraints posed by contamination and the cost of remediation to ensure public spaces can meet safety standards.
- Any measures required to stabilise cliff faces should avoid overt engineering solutions (where possible), such as wire netting, and explore opportunities for cliff stabilisation through methods which are more sympathetic to the landscape and visual sensitivities of the site, for example natural succession. Appropriate safety buffers between cliff faces and development should also be put in place.
- 5 Access routes should make use, as far as possible, of existing platforms and haul routes. Access routes should be provided to cater for all abilities, but shouldn't preclude the provision of more challenging routes elsewhere if opportunity exists.
- Trees and vegetation in the east of the site can be a useful tool for softening the white chalk quarry scars in views from the west.

The tidal influence of the River Adur not only creates an important habitat, but creates the potential for small-scale renewable energy generation.

LLCA1a - Shoreham Cement Works West of A283 Low-moderate sensitivity to mixed-use development

Opportunities

Being able to live at the site and commute in a sustainable way to further employment opportunities in Upper Beeding, to the north, and Shoreham-by-Sea, to the south (with its associated rail links along the south coast) should be promoted, utilising the existing Downs Link.

Current use of this LLCA sees a variety of leaseholders utilising warehouses for small-scale industry and distribution. The legacy of this can continue through the provision of some smaller areas of workshops and studios coupled with residential development and

- amenities.
 If feasible, buildings of architectural interest could be made safe and transformed into large scale canvases for artworks.
- Existing dense and mature vegetation and shelter belt planting surrounding the area (including river side Ash trees) to be carefully managed, enhanced and future proofed.



the surrounding landscape.

 Improvement works to existing junctions and new junctions/
 roundabouts, which are required to provide suitable access, should be designed with regard to the landscape and visual sensitivities of the site's location in the SDNP, and minimise further urbanisation.

Constraints



(14)

Due to the site's position adjacent to the River Adur, with parts of the site in/ near the floodplain, any new development at the site should be carefully planned with regard to potential flood risk and impact on water quality. SuDS which utilise attractive and appropriate planting for its South Downs context should be incorporated into designs.

Building where shading from trees is prominent in places, for example adjacent to the shelter belt of trees in the south-east of the LLCA, should be avoided.

LLCA2 - Shoreham Cement Works Beeding Hill Lower Quarry Moderate-high sensitivity to mixed-use development

Opportunities



Some bare cliff faces should be retained through careful management, ideally locations where pre-existing viewing points of geological interest, field sections and karst features have been identified. This will help preserve the geological and cultural importance of the cliff faces and allow for visitor interpretation of these geological assets, providing an insight into the deep past of the Downs.



(25)

Panoramic views over the Adur Valley can be had from the raised viewpoint in the northwest of the LLCA, where the former chalk crushing building and chute are located. This building should be removed as it sits prominent on the side of Beeding Hill when viewed from the west. Providing health and safety measures can be met, this could provide space for a viewing and interpretation point for recreational access.

The mosaic of habitats should make use of the different conditions found across the quarry floor, including bare areas which were previously used as spoil heaps, alongside some softer/ lagoon areas for more wet-loving species. Low impact activity in the 'basin' of this

- LLCA will help to promote the natural recolonisation of chalk grassland, a priority habitat and provide an appropriate setting for people using the space for recreation, rest and contact with nature.
- 24 This LLCA could provide an outdoor space for recreation, rest and contact with nature (bird watching/ appreciation of flora) for people living, working in and visiting the site.

Southern areas of the LLCA, away from areas of natural succession, important habitats and reserved for tranquillity, could be re-purposed to provide more formal recreation activities, such as mountain biking

Transforming mechanical elements into sculptural pieces, linked by informal footpaths and interpretation trails will help to promote the link between the geology and industrial heritage of the site.

Constraints





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Chapter 5 Summary and Design Principles

Summary

5.1 The following section sets out the general and specific design principles to help inform and guide the design of any future development at the Shoreham Cement Works site.

5.2 The design principles are informed by the landscape character evidence; opportunities and constraints and sensitivity evaluation work presented in this study. The site and study area are classified into 12 LLCAs, which are judged to be of the following sensitivity to mixed used development (highlighted in bold):

- LLCA 1a Shoreham Cement Works West of A283 (low-moderate)
- LLCA 1b Shoreham Cement Works East of A283 (moderate)
- LLCA 2 Shoreham Cement Works Beeding Hill Lower Quarry (moderate-high)
- LLCA 3 Shoreham Cement Works Beeding Hill Upper Quarry (high)
- LLCA 4 Adur Valley Floodplain (moderate-high)
- LLCA 5/ 6 Eastern Adur Valley Sides (moderate-high)
- LLCA 7/ 10 Western Adur Valley Sides (moderatehigh)
- LLCA 8 Eastern Adur Open Downlands (high)
- LLCA 9 Ardur Downs Scarp (moderate-high)
- LLCA 11 Adur Scarp Footslopes (moderate)
- LLCA 12 Western Adur Open Downs (high)

5.3 The design principles are structured under the landscape elements that were used in the landscape characterisation work, as follows:

- Geology and Soils;
- Topography and Water;
- Roads, Tracks and Paths;
- Settlements and Buildings;
- Woodlands and Trees;

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Fieldscape;

Perceptual Qualities and Views

5.4 Each design principle provides a broad principle (**in bold text**). When appropriate, further detailed design principles under this broad principle are listed.

5.5 A number of studies (including transport, viability, ecology, industrial archaeology and contaminated land) were carried out in tandem with this landscape study. The findings of these studies are used to help formulate certain design principles (and reference is made to the relevant study where appropriate).

5.6 The landscape characterisation and sensitivity evaluation work highlights the opportunity that Shoreham Cement Works provides to create a place to live, work, play and appreciate the unique geology, industrial archaeology, ecology and position in the SDNP. The following design principles seek to promote the unique opportunities this site presents and should be read in conjunction with the opportunities and constraints plan (refer to **Figure 4**).

Chapter 5 Summary and Design Principles

Shoreham Cement Works May 2022

General Design Principles

The following 'general' design principles are informed by the landscape character; opportunities and constraints and sensitivity evaluation work presented in this study (refer to Chapter 4)

Settlements and buildings (features to retain)

Features of important industrial heritage, including elements such as key industrial machinery and components, should be retained and accommodated on site in some way.

- The Shoreham Cement Works chimney is an iconic local landmark enjoyed by locals and used for navigation purposes. Should safety, maintenance and economic considerations permit, this feature should be retained and conserved so it remains an iconic landmark in the Adur Valley.
- Where appropriate and fit for restoration, former industrial buildings could also be retained and re-purposed to provide important references to the industrial heritage of the site.

Settlements and buildings (new buildings: form, massing and perceptual qualities)

Where appropriate (see specific design principles that follow) the location, form and massing of any new mixed use development that included housing in the site has the scope to reference the form and massing of existing buildings in Shoreham Cement Works.

- New development proposals should consider the retention, adaptation and reuse of existing buildings where feasible.
- New buildings that reference the location, height, footprint and roof shapes of existing industrial buildings could provide important cultural references to the site's former use and buildings across the site which are no longer fit to retain and repurpose.
- New buildings of scales which consider the existing, and which reference simple industrial forms and pitched roofs, will be more in keeping with the industrial features and buildings that can be retained and repurposed into mixed use development across the site.
- Matching existing scales to some extent will also ensure buildings are in scale with the surrounding quarry and chimney (if retained).
- New buildings should respond to the underlying contours of the site, utilising flatter areas of ground as far as possible.
- Form and architectural style should be distinctive to the site and context-led, ensuring the development does not give a feel of being an 'anywhere' place.

Where costs associated with remediating areas of contaminated land for sensitive elements of development (including residential use) are prohibitive, opportunities should be explored to promote less sensitive land uses such as public open space/ wildlife habitats, which provide natural capital benefits (refer to Shoreham Cement Works Programme of Works Report for Land Contamination, Removal of Existing Buildings and Drainage Investigations Report, 2021).

Settlements and buildings (New buildings: materials)

Materials used in the building of new mixed-use development should reference the existing site materials (chalk) and respond to the cultural value of the site, whilst exploring the opportunity for the use of new and innovative materials.

- The building materials strategy should aim to reduce the need for new materials and to reuse existing materials on site that contribute to cultural references to the site's former use, and a lower carbon development. Building and hard landscaping materials could be sourced from the site.
- Where appropriate, the opportunity to use innovative sustainable buildings materials should be explored. Materials that improve efficiency and the significant heat that any buildings will need to absorb in the extracted part of the site, will allow new buildings to create microclimates that help reduce energy demands.

Building materials should respond to and celebrate the colours and hues of the landscape. Materials should be selected to be durable and adaptable to the microclimate conditions (temperature and light differences, reflection, shade, moisture and wind) of the site.

Settlements and buildings (skylines/ horizons and key views)

Any new development in the LLCA should be particularly cognisant of visibility into the LLCA and views across the River Adur Valley and sensitive skylines.

- The scale of any new development should not exceed the scale of existing development in the site, seen in views across the Adur Valley.
- Keeping development compact within existing developed areas would alleviate visual and landscape character impacts.
- Development proposals should enhance views out from the site. Views of the chalk cliffs, the far eastern end of the quarry and the river and downs beyond to the west are important.
- Keeping new development contained within the quarry site and below the horizon line in views towards Beeding Hill is a key consideration.
- Opportunities should be fully explored to reduce clutter (and effects on tranquility) associated with parking, services and ancillary elements such as bin and cycle storage. The quarried landform of the site could be utilised to screen views of these features. These features could also be incorporated into new buildings.
- Careful consideration should be had for intervisibility of solar panels with the wider landscape (likely to be limited if pitches are orientated north-south), and whether higher quality panels that are integrated into the roof can be used.
- Any servicing and ancillary structures associated with buildings should be as integrated as possible and screened from key views. This applies to any street clutter associated with bins, parking etc.
- Building locations should account for key views into, from and through the site.

Lighting should be designed with cognisance of the site's sensitive location in the SDNP.

- External lighting should be kept to the minimum, especially within more landscape sensitive and tranquil areas. Illuminated signs should be avoided.
- Internal light spillage should be avoided and/ or kept to the minimum through good design and appropriate mitigation.
- Downward projecting lighting that conforms with the South Downs' lighting guidance should be utilised across the site.

Settlements and buildings (sustainability)

Opportunities for highly sustainable design should be fully maximised.

- The use of native vegetation to control microclimate and facilitate natural outdoor and building cooling should be explored.
- Pitched roofs should be orientated southwards (as is presently the case) if solar panels and solar collection panels for water heating are to be installed.
- Use green roofs to mitigate for any negative visual impacts of buildings and maximise wildlife opportunities and sustainable water management.

This area hosts an important opportunity for the delivery of green and blue infrastructure in a manner that will not only deliver a host of ecosystem services but that also have a positive impact to character and people.

- A network of GI should join up existing habitats within the site and its boundaries. Opportunities to connect ecologically sensitive areas should be maximised: from the river to the eastern end of the quarry.
- Blue infrastructure should be designed following the existing contours of the site and maximise opportunities to connect the site with the River Adur.
- Green roofs can be delivered on both pitched and flat roofs. The site offers opportunity to exceed green roof targets.
- Green walls are another GI feature that can be implemented across the site to provide positive character.

Roads, tracks and paths (access and recreation)

Active travel facilities incorporated into any new mixed-use development within the site and links to the wider active travel network should be provided.

- Follow historic patterns of routes to provide characteristic and accessible connections to the Downs Link.
- Being able to live and/ or work at the site and travel in a sustainable way to Upper Beeding, Bramber and Steyning to the north, and Shoreham-by-Sea, to the south (with its associated rail links along the south coast) is an asset of the site location.
- Access routes to the site should maximise connections with the surrounding Right of Way network.
- Cycling and public transport should be given priority in the design strategy of the site, facilitating these options over private vehicle use.
- Access routes across the site should make use, as far as possible, of existing platforms and haul routes. Access routes should be provided to cater for all abilities however, should not preclude the provision of more challenging routes elsewhere if opportunity exists.

Any improvement works to existing junctions and new junctions/ roundabouts should be designed with regard to the landscape and visual sensitives of the site's location in the SDNP (and Roads in the South Downs Guidance⁶) and minimise further urbanisation.

- Access proposals should minimise landscape character impact and provide safe and comfortable permeability to all users across the road network.
- Features such as link access roads, kerbs, lighting, fencing and signage should be rationalised and reflect the rural road qualities of the existing A832, as far as possible.
- Access roads into the site should avoid overt highway engineering features that could adversely influence residential areas/ areas of mixed use development, where possible.
- Lighting should be avoided, but when required, innovative solutions should be explored for lighting to avoid light spill and effects on the dark sky qualities, wildlife, and character of the SDNP.
- Space should be provided to implement appropriate native soft landscape proposals, to help integrate these features into the landscape. These should be multifunctional, integrated within the wider green and blue infrastructure network.
- Consideration should also be given to the impact of vehicles slowing and speeding up at a junction and how this can influence tranquility.

Woodland, Trees and Habitats

Where appropriate, existing habitats across the site should be maintained and enhanced to provide wildlife links and an extension of suitable habitats across the wider Adur Valley.

- Through design, enhance characteristic connectivity between habitats, through the site and beyond into the wider countryside.
- New landscape proposals/ GI should use native and locally sourced planting materials and seed, reflecting the local flora.
- Where possible, floristically rich chalk grassland, a Priority Habitat, should be encouraged to develop across the site, with careful ecological management to control scrub development.

Water and Topology

Any new development should be carefully planned with regard to potential flood risk, ensuring residential and other sensitive uses are not located in areas at risk of flooding.

⁶ https://www.southdowns.gov.uk/wp-content/uploads/2015/09/Roads-in-the-South-Downs.pdf
Shoreham Cement Works May 2022

- Due to the site position adjacent to the River Adur, with parts of the site in/ near the floodplain, any new development at the site should be carefully planned with regard to potential flood risk and impact on water quality.
- New SuDS and blue infrastructure features should be designed to provide recreational and ecological interest; be in keeping with the adjacent flood plain landscape; and avoid the using of any non-native species in planting design.
- Retain and respond to existing topography in all elements of design.

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LLCA 1a Design Principles – Shoreham Cement Works West of A283





This LLCA is of low-moderate sensitivity, to mixed used development.

The following 'LLCA specific' design principles are informed by the landscape character; opportunities and constraints and sensitivity evaluation work presented in this study (refer to Chapter 4)

Settlements and buildings (form, massing and perceptual qualities)

The location, form and massing of any new mixed-use and housing development in the LLCA has the scope to reference the location, form and massing of existing buildings in Shoreham Cement Works.

- Reference the characteristic pattern of existing industrial buildings and spaces, their height, footprint and roof shapes in new built form.
- Ensure the relationship between buildings, spaces and routes are conserved and enhanced in layout design.
- Create building typologies that reference the large scale and character of existing industrial built form. High density would be appropriate. Avoid domestic-scale architecture.
- New buildings of this scale should reference simple and varied industrial forms and pitched roofs.
- Respond to both sensitive views and character (built form is uncharacteristic in the floodplain) to design unobtrusive buildings and rooflines. Variety in the built form and visual breaks in the roofscape would be appropriate.
- Utilise built form to address the negative effects of the A283 upon tranquillity and create quiet spaces within the site.

Settlements and buildings (materials)

Materials used in the building of new mixed-use development should reference the historic building materials used in local settlement.

- Utilise materials that reflect the historic built form of the site's industrial past.
- Surface materials should avoid being overly busy, and be simple, functional and finished to a high standard.
- Design buildings and spaces to use local stone and re-use site won materials.
- Design fenestration and elevations to maintain the dark river corridor.

Shoreham Cement Works May 2022

Settlements and buildings (features to retain)

Features of important industrial heritage, including key industrial components and structures of architectural interest, should be retained and accommodated on site in some way.

- Retain the characteristic functional relationship between buildings and their associated functional spaces.
- Retain the characteristic relationship between buildings and communication networks (tracks and routes/roads).

Settlements and buildings (skylines/ horizons and key views)

Any new development in the LLCA should be particularly cognisant of visibility into the LLCA, when viewed from the western side of the Adur Valley,.

- The scale of any new development should not exceed the scale and experience of existing development in views across the Adur Valley.
- Keep new development heights below the horizon line of Beeding Hill and no greater than existing.
- Design of buildings should be unobtrusive in views from the west, and work in partnership with other elements of landscape e.g. trees.

Settlements and buildings (sustainability)

Achieve sustainable design principles.

- Adjacent to the A283, consider green walls to deliver multiple ecosystem services and reduce heat loss.
- Consider renewable district heating systems.

Roads, tracks and paths (access and recreation)

Active travel facilities should be promoted and incorporated into any new development within this LLCA.

- Integrate into building design, outdoor bike storage and charging points for electric vehicles/e-bikes.
- Play with the retention of tracks and railway heads, for place-making that tells a story of the site's history.

Utilisation/ widening of the existing tunnel under the A283, which links the eastern and western parts of the site, should be fully explored to help minimise/ avoid the need for any additional junctions/ roundabouts/ significant road upgrading works to the A832, as it passes through the SDNP.

- Design-in connectivity beneath the A283, prioritising non motorised vehciles and maximising the opportunity to link the two areas provided by the existing underpass.
- Integrate comprehensive and characteristic green and blue infrastructure into new routes/roads (trees should dominate).

Improvement works to existing junctions and new junctions/ roundabouts, which are required to provide suitable access, should be designed with regard to the landscape and visual sensitives of the site's location in the SDNP, and avoid further urbanisation.

- Reuse existing points of access.
- Access roads into the site should be characteristically located and avoid highway dominance through minimising engineering.
- Access road should be short and quickly peter out. The site circulation should be designed to be delivered through a series of simple, characteristic shared spaces.
- Avoid highway engineering features such as kerbs, white lines, signage, lighting, speed bumps etc. and reflect rural qualities of the road network in designs.
- All routes should be designed to maintain route hierarchy and be subservient (in all aspects of design) to the A283.
- Re-used site won materials or simple materials of industrial character for surfaces of routes and spaces.

Design-in space to implement characteristic and multi-functional soft landscape proposals (trees should dominate). These should connect to the wider GI.

Topography and water

Any new development should be carefully planned with regard to potential flood risk, ensuring residential and other sensitive uses are not located in areas at risk of flooding.

- New development should be carefully planned with regard to flood risk and buildings and spaces should be designed to flood.
- Utilise holistic design of buildings and spaces to enhance water quality.
- New characteristic (at-surface linear features) SuDS features should be designed to provide multiple benefits whilst contributing positively to the site's riparian sense of place.

Woodlands, trees and habitats

Existing trees, woodlands and other important habitats to be carefully future proofed though appropriate management and enhancement measures to allow:

- Remove non-native species, and provide native alternatives to Ash where it dies out.
- Design-in the characteristic relationships between trees and the disused railway and road network (communication network).
- Provide sufficient space within the site to future-proof the belt of ash trees by planting a new linear native tree belt, using appropriate, native replacement for ash.



Existing woodland around the LLCA to be carefully managed to enhance its function for habitat/ wildlife connections whilst promoting greater recreational connections with Adur Valley



Where appropriate, buildings/ facades of architectural and cultural interest to be made safe and transformed into large scale canvases for artworks (© Visit Victoria)

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New blue infrastructure should be carefully planned to appear more naturalistic and in keeping with the adjacent flood plain landscape



Active travel use and links to be promoted through attractive and secure cycle storage close to amenities and cycle connections (© 2022 Green Roof Shelters)



Utilising ground floors for workshops and studio that can help to activate the streetscape, alongside green infrastructure features



Existing warehouse and workshop space that is leased out to various small businesses and tenants

Shoreham Cement Works May 2022

LLCA 1b Design Principles - Shoreham Cement Works East of A283





This LLCA is of moderate sensitivity to development.

The following 'LLCA specific' design principles are informed by the landscape character; opportunities and constraints and sensitivity evaluation work presented in this study (refer to Chapter 4)

Settlements and buildings (location, form, massing and perceptual qualities)

The location, form and massing of any new development in the LLCA has the scope to reference the location, form and massing of existing buildings in Shoreham Cement Works.

- New buildings should reference the characteristic location, height, footprint and roof form of existing buildings to conserve the site's industrial character. The cement works buildings have components of art deco style architecture (refer to Shoreham Cement Works Industrial Archaeology Study, 2021), which could be explored in new building design.
- Design buildings, routes and spaces together to maintain (multi) functional relationships.
- Respond characteristically to the contours of the site, utilising flatter areas of ground for buildings.
- Create a new development that sensitively references the larger scale and mass of existing built form, complementing but not being overbearing to the scale of the cliffs and maintaining the imposing experience of built form.

Settlements and buildings (materials)

Materials used in the building of new development should reference the historic simple and industrial building materials used across the cement works site.

- Colour, tone and texture of materials should all be simple and inspired by existing buildings, which melt into the landscape when experienced in longer distance views. White should be avoided.
- Use innovative designs to maximise the re-use or re-purposing of site-won materials enhancing both sustainability and character.
- Materials for open spaces should be characteristic, simple and require little or no engineering.

Shoreham Cement Works May 2022

Settlements and buildings (features to retain)

Features of important industrial heritage, including key industrial components and structures of architectural interest, should be retained and accommodated on site in some way.

- Retention and/or re-purposing of the iconic chimney should be considered.
- Retain and accommodate important industrial heritage features.
- Design for the habitat potential of some buildings and structures, this should be explored and enhanced for species such as bats.
- Utilise existing building foundations where possible. Innovative re-use should be explored to avoid materials going to landfill.

Settlements and buildings (skylines/ horizons and key views)

Any new development in the LLCA should be particularly cognisant of visibility into the LLCA, when viewed from the western side of the Adur Valley, particularly along Coombes Road.

- Keep new development below the horizon line of Beeding Hill and contained within the existing chalk quarry.
- Layout design maximises views and experience of the dramatic cliffs encircling the site.
- Views through the gap in the cliffs could be sensitively exploited in layout design and place-making.
- New buildings should (in part) address the A283 and generate a high quality and characteristic 'street scene' as people pass the site.

Settlements and buildings (sustainability)

Designs should take into account the requirements for sustainable design and consideration of microclimate.

- Development should be avoided in the southern-most and northern-most parts of the LLCA-due to cliff instability and extremes of climate (overheating/excessive shade)
- Design to create a new typology of building which whilst referencing characteristic patterns, forms, materials etc. can be resilient in energy terms, respond to extremes of temperature likely to be experienced, and maximise water sustainability.
- Architectural design should capture sufficient winter light.
- Designs should achieve carbon negative development.

Roads, tracks and paths (access and recreation)

Active travel facilities should be promoted and incorporated into the new mixed-use development within this LLCA.

- Retain and use some of the established tracks and/or haul routes.
- Integrate bike storage and charging within buildings.
- Ensure well-designed, discrete locations for EV charging points.
- Design-in understated and characteristic routes to existing and new bus stops.
- Utilise existing points of access.
- Retain narrow and subservient (to current A283) routes into the site to maintain their industrial and simple character.
- Access roads into the site should be characteristically located and avoid highway dominance through minimising engineering. Access roads should be short and quickly peter out.
- Avoid highway engineering features such as kerbs, white lines, signage, lighting, speed bumps etc. and reflect industrial qualities of the route network in designs.
- Re-use site won materials or simple materials of industrial character for surfaces of routes and spaces.

Utilisation/ widening of the existing tunnel under the A283, which links the eastern and western parts of the site, should be fully explored to help minimise/ avoid the need for any additional junctions/ roundabouts/ significant road upgrading works to the A283, as it passes through the SDNP.

Improvement works to existing junctions and new junctions/ roundabouts, should be designed with regard to the landscape and visual sensitives of the site's location in the SDNP, and minimise further urbanisation.

- Suburban/urbanising features such as, kerbs, lighting, fencing and signage should be avoided to maintain the site's rural context and industrial character.
- Lighting should be avoided, to conserve and enhance the Dark Night Skies.
- Sufficient space should be designed into any new roads/routes to implement characteristic and multi-functional soft landscape proposals.

Geology and topography

The dramatic chalk cliff faces of the quarry and the sense of enclosure they create is a unique feature of the site. These features should be retained and incorporated into the landscape setting for any new development at the site.

All new development (buildings, spaces, routes) should be located away from the foot of the cliffs.

Woodlands, trees and habitats

The range of woodland, trees and habitats across the LLCA should be managed and enhanced for multiple benefits.

- Cliff faces in closer proximity to new development should continue to allow natural succession to occur, thus helping to stabilise the cliffs and mitigate to some degree for the harsh microclimate in careful conjunction with ecological advice.
- Conserve and enhance important habitats in situ through sensitive and responsive layout design.
- Reuse existing areas of hardstanding and keep new areas of hardstanding to a minimum, to ensure chalky bare ground is retained as a key component of the mosaic habitats.
- Maintain the characteristic pattern of trees along the A283 to maximise the multi-functional benefits of GI.
- Within the site, design low key route boundaries to naturally regenerate to conserve and enhance the characteristic mosaic habitats.

Respond to cliffs to ensure development doesn't encroach into areas of potential cliff-fall.

Design-in appropriate clearances between built form/ access routes/ usable spaces of the site and less stable areas of cliff face.







Natural succession of vegetation on the cliff faces

Industrial forms, including pitched roofs, referenced in new development



Colours that reflect the existing palette seen within the South Downs landscape (Credit: OB Architecture)



Local building materials and the colours of the

The chimney at Shoreham – an iconic landmark in the Adur Valley $% \left({{{\rm{Adur}}} \right)_{\rm{Adur}}} \right)$



Re-purposing industrial elements and retaining important features of the industrial landscape (Credit: Sheffield Star)

Shoreham Cement Works May 2022



Utilising passivhaus principles to deliver low energy and efficient buildings across the Site (© 2016 Eco Design Consultants)



Linking with the existing active travel routes across the wider landscape, including the Downs Link, to encourage cycling for recreation and commuting

Shoreham Cement Works May 2022

LLCA 2 Design Principles– Shoreham Cement Works Beeding Hill Lower Quarry





This LLCA is of moderate-high sensitivity to development.

The following 'LLCA specific' design principles are informed by the landscape character; opportunities and constraints and sensitivity evaluation work presented in this study (refer to Chapter 4)

Settlements and buildings (location, form and massing)

- (If any) small and low-key new buildings should be located only where existing buildings are sited.
- The scale, height, form and materials of existing buildings should inspire any limited new built form.
- Small new buildings should be designed to have a physical, visual, character connection with the neighbouring cement works site.

Settlements and buildings (materials)

Materials used in the building of new features should reference the historic use of the site and the sites geology.

New buildings and spaces should be simple and understated, using site-won materials to enhance character and sustainability.

Settlements and buildings (skylines/ horizons and key views)

Any new smaller scale development in this LLCA should be particularly cognisant of visibility into the LLCA, when viewed from the western side of the Adur Valley.

- Remove the poor quality building that sits high up on the northern edge of this site.
- Sensitive design should ensure public access to this panoramic viewpoint.

Roads, tracks and paths (access and recreation)

Recreational activities such as walking/ cycling/ outdoor play/ appreciation of nature/ interpretation of the Downs' industrial and deep past/ industrial sculpture trail, should be promoted across this LLCA.

- Design-in characteristic uses and spaces linked to the site's special qualities.
- Informal, almost incidental non-motorised vehicles and pedestrian routes for access around the site should characteristically follow the contours.
- Re-purpose southern areas of the LLCA, away from important habitats for informal recreation activities. For example, low-key mountain biking course/pump track to provide some ongoing areas of disturbance needed to maintain the cycle of ecological interest. Link such a use with users of the Downs Link and South Downs Way.
- Access routes should make use, as far as possible, of existing platforms and haul routes.
- Avoid any engineering of routes through this site.

Geology, topography, habitats and perceptual qualities

The unique geology, topography and habitats across the LLCA should be managed and enhanced for multiple benefits.

- Uses which enable people to experience the drama and vastness of this open site should be prioritised.
- Natural succession on the cliff faces in this LLCA should be carefully managed in balance with geological and ecological needs, to conserve and enhance the characteristic horizontal patterns of vegetation.
- Sensitive and low impact activity in the 'basin' of this LLCA should be designed to help to maintain the cycle of light disturbance needed to conserve and enhance the valuable mosaic habitats.
- Design and management of access within this LLCA should be low-key enough to contribute to the conservation and enhancement of habitats and species.
- Designs should avoid any external lighting.
- Design new routes to follow the contours, avoiding the foot of the cliffs and naturally re-vegetate to continue to conserve and enhance the mosaic habitats.

Any measures required to stabilise cliff faces should avoid overt engineering solutions (where possible), such as wire netting, and explore opportunities for cliff stabilisation through methods that are more sensitive to the landscape and visual sensitives of the site.

- Appropriate safety clearances between built form/ access routes/ usable features of the site and less stable areas of cliff face should be provided.
- Where more overt engineering solutions for cliff stabilisation are unavoidable, measures to re-vegetate the cliff face/ provide suitable habitat/ screen associated cliff face stabilisation engineering solutions, should be utilised.



Natural succession on the cliff faces to be carefully managed, to preserve areas of geological and cultural importance on the cliffs



Any new structures to be small scale and promote recreational activities in the LLCA, encouraging interactions with nature

Shoreham Cement Works May 2022



New and upgraded footpaths to use chalk/ softer natural materials, and avoid hard kerb detailing



Features of important industrial heritage from Shoreham workings transformed into sculpture



Utilising corten steel as a material for interpretation and signage, linking with the palette of colours and materials used across the industrial sculpture trail and giving reference to the industrial heritage (© 2022 Fitzpatrick Woolmer Design & Publishing Ltd)



Subtle transformation of areas that retain the naturalistic features, habitats and industrial elements of the quarry, whilst introducing sensitive recreation, such as BMX biking

Shoreham Cement Works May 2022



Former lime kiln that was retained at Betchworth Quarry, a limestone quarry in Surrey. The kiln has had its habitat potential enhanced for bats (© Hugh Craddock)



Betchworth Quarry, a former limestone quarry that was restored to regenerate chalk grassland and deciduous woodland. The site is now accessible to visitors (© lan Capper)

Shoreham Cement Works May 2022

LLCA 3 Design Principles - Shoreham Cement Works Beeding Hill Upper Quarry





This LLCA is of high sensitivity to development.

The following 'LLCA specific' design principles are informed by the landscape character; opportunities and constraints and sensitivity evaluation work presented in this study (refer to Chapter 4)

Settlements and buildings (location, form and massing)

There is no built form in this LLCA. This LLCA is judged to be of high sensitivity to mixed used development. Any built form should be very small is scale, incidental, and associated with conservation and interpretation on the periphery of this LLCA to help people understand the landscape/ wildlife and geology.

Settlements and buildings (materials)

There is no built form in this LLCA. This LLCA is judged to be of high sensitivity to mixed used development.

Settlements and buildings (features to retain)

The chalk cliffs surrounding this LLCA provide important nesting habitats for birds. Opportunities to enhance provisions for nesting birds should be sought.

Settlements and buildings (skylines/ horizons, key views and perceptual qualities)

The elevated position of this LLCA means any new development in this area has the potential to be seen on the skyline in wider views from the River Adur Valley and open downlands either side, which could contrast with the undeveloped nature of the surrounding open downlands.

Allowing the natural recolonisation of most of the chalk faces in this LLCA will allow the bright white quarried cliffs in the landscape, nearer the horizon line, to gradually soften in views. This will help reduce the overt human influence on the landscape in the higher open downlands, when viewed from the west and enhance the more natural perceptual qualities of this landscape. This is particularly important for the cliffs on the back wall of the quarry in the east, which are the most prominent in views.

Roads, tracks and paths (access and recreation)

Access to this area is limited due to steep slopes and uneven terrain, meaning health and safety would be a concern. This provides considerable opportunity for providing an area of wildlife interest with minimal disturbance, helping to promote ecosystem services across the LLCA.

Any informal paths (for maintenance access) should be low key and utilise existing tracks.

Habitats

The unique habitats across the LLCA should be managed and enhanced for optimum benefit.

- This area should be carefully managed to allow the natural recolonisation of chalk grassland in the basin of the LLCA and a mosaic habitat of woodland and chalk on the surrounding cliffs.
- Careful management will be needed to retain some bare chalk cliffs that are important nesting habitats for species such as peregrine falcons.

Any measures required to stabilise cliff faces should avoid overt engineering solutions (where possible), such as wire netting, and explore opportunities for cliff stabilisation through methods that are more sensitive to the landscape and visual sensitives of the site.

- Appropriate safety clearances between access routes/ usable features of the site and less stable areas of cliff face should be provided.
- Where more overt engineering solutions for cliff stabilisation are unavoidable, measures to re-vegetate the cliff face/ provide suitable habitat/ screen associated cliff face stabilisation engineering solutions should be utilised.

Shoreham Cement Works May 2022



Cliff faces to be managed to maintain a mosaic of habitats, with some vegetation regeneration and some retained bare cliff faces to support microhabitats and geological interest



Natural recolonisation of chalk grassland to be promoted within the basin of the quarry, using seed stocks from neighbouring areas of the South Downs



Sensitive skylines, for example when viewed from the South Downs Way, should be maintained free of development



Enhance provisions for nesting birds, particularly peregrine falcons who may utilise man-made caves within the chalk cliffs



Betchworth Quarry, Surrey, a former limestone quarry that has undergone a regeneration process to restore the landscape to native chalk grassland and deciduous woodland (© lan Capper)



Wharram Quarry Nature Reserve in Yorkshire, a former chalk quarry that now hosts floristically and invertebrate rich chalk grassland (Credit: Tom Marshall/ Yorkshire Wildlife Trust)

Appendix A

Technical Note 1 – Landscape Character Assessment Methodology

Approach

The Evaluation Assessment has followed Natural England's 'An approach to landscape sensitivity assessment – to inform spatial planning and land management'⁷.

The assessment was prepared within the framework set by Natural England's National Character Assessment and the South Downs Landscape Character Assessment (2020).

Process of Assessment

The process for undertaking the study involved five main stages, described below:

- Desk-based review and classification;
- Field survey;
- Draft Report;
- Client consultation; and
- Final Report.

Desk study

5.7 The initial desk based stage involved the collation of a wide range of mapped information to understand the existing landscape baseline. Designations relating to cultural heritage, nature conservation and landscape were checked. Newly available data such as tranquillity mapping also strengthened an up to date understanding of key trends.

- 5.8 Data used for the desk based study includes:
- Base OS mapping at 1:25K and 1:50K;
- Site Survey Topo Data (provided by client);
- Natural England National Character Areas;
- SDNP Landscape Character Areas (2020);
- Public Rights of Way (Natural England);
- River Features and Flood Zones (Environment Agency);

https://assets.publishing.service.gov.uk/government/uploads/system/u

ploads/attachment_data/file/817928/landscape-sensitivityassessment-2019.pdf

- Nature Conservation Designations (Natural England and SDNPA);
- Priority Habitats (Natural England);
- National Heritage Designations (Historic England);
- Dark Skies (CPRE);
- Sussex Historic Landscape Characterisation (2010)
- Historical Mapping;
- Historic Environment Records (HER);
- Infrastructure (Ordnance survey); and
- Local Plan (SDNPA).

Classification

Classification is concerned with dividing the landscape into areas of distinct, recognisable and consistent common character.

This process resulted in the definition of 12 Local Landscape Character Areas (LLCAs) across the study area. The classification was undertaken at a scale of 1:25,000 and shown on a 1:250,000 scale base map (refer to **Figure 3**).

Field Survey

Field survey, including an accompanied visit to the Site, was undertaken in September 2021 to review and refine the draft classification, make notes on landscape character and take photographs to help with subsequent assessment and sensitivity evaluation. This specifically focussed on:

- verifying and fine-tuning the classification of the LLCA identified;
- verifying and identifying key characteristics;
- collecting aesthetic/perceptual information on character;
- identifying valuable landscape attributes;
- assessing landscape condition; and
- gathering visual information on key issues to inform the opportunities and constraints for each LLCA.

Draft Report

A draft report was submitted to the client group for comment in September 2021. Following this a wider project team meeting was held with transport, viability, ecology, industrial archaeology and contaminated land consultants to present key findings from baseline analysis, encourage and iterative approach across a multi-disciplinary team and to inform the design principles stage. A further transport specific meeting was held in January 2022 to discuss access options to the site.

Final Report

Following comments from the client group the LLCA classifications were finalised.

Landscape Character Area Descriptions

The descriptive profiles for the landscape characterisation work are presented at local landscape character area level. As such, this presents a finer grain assessment of landscape character across the Site and surrounding study area.

Each LLCA descriptive profile begins with an excerpt map showing the location, followed by a summary paragraph explaining its location and defining landscape character. Representative baseline photos also help the reader appreciate the visual character of the LLCA.

Each LLCA descriptive profile then goes on to outline the key characteristics, in bullet point format, covering the following landscape elements:

- Geology and Soils;
- Topography and Water;
- Roads, Tracks and Paths;
- Settlements and Buildings;
- Woodlands and Trees; and
- Fieldscape.

Information on other key elements, such as unique landscape features, perceptual qualities and views is also provided, where relevant.

Opportunities and Constraints

For each LLCA, opportunities and constraints are identified. Landscape opportunities could include aspects such as where the terrain offers good screening potential in wider views from the SDNP or where landscape mitigation/ restoration proposals could complement the existing landscape pattern. Other opportunities might be more design focused, highlighting cues from the historic or industrial context that could influence the housing design (materials, massing, colour, form etc). Opportunities and constraints are organised in relation to the key landscape elements considered under this report, and identified to inform the development of design principles. Key opportunities and constraints are shown on the opportunities and constraints plan (Refer to **Figure 4**).

Appendix B

Technical Note 2 – Landscape Sensitivity Evaluation Detailed Criteria

Landscape and Visual Sensitivity Assessment Criteria

Physical and natural character and function

This criterion considers landscape elements such as geology and soil/ topography and water. It considers the scale, coherence, condition and intactness of the physical landscape, and the extent to which it is representative of typical landscape character, or a scarce landscape type. It also considers habitats and the presence/absence of natural heritage designations in the landscape and function they provide to the ecosystem and associated ecosystem services.

Lower sensitivity	\longrightarrow	Higher sensitivity
The landscape is degraded and	The landscape has some	The landscape makes a strong
detracts from local landscape	limited characteristics that	contribution to local landscape
character – e.g. land cover has	contribute to local landscape	character – e.g. it has a
been largely lost and any	character – e.g. the landscape	distinctive landform, an intact,
landscape features/ habitats are	has reasonable natural	natural landscape features of
fragmented and/or in poor	features/ offers some habitat	interest and habitat value, such
condition offering little in the way	value.	as ponds or watercourses
of ecosystem services		making a valuable contribution
The law deeper the define of laws	It may be a typical example of a	to ecosystem services.
The landform itself is of low	locally commonplace landscape	
sensitivity - i.e. simple, smooth or	type.	Strong landform features such
flat landforms.		as slopes and scarps are likely
		to be more sensitive.

Cultural and historical associations

This criterion considers landscape elements such as settlements and buildings/ roads, tracks and paths/ woodland and trees/ fieldscape. The extent to which the landscape has 'time-depth' (a sense of being a historic landscape and where layers of change area readable) – antiquity (a surviving landscape that has remained unchanged for a long period of time) - and/or has cultural associations (e.g. features in art or literature or is associated with an important historical figure). It considers historic as it relates to landscape character and is not a heritage assessment.

Lower sensitivity	\longrightarrow	Higher sensitivity
A landscape with no cultural or	A landscape with visible historic	A landscape with a strong,
historical influence or	elements or cultural	intrinsic historic character, or
associations, in which field forms	associations that has some	associations with important
and built features have no historic	historic character, but which is	historic/cultural persons or
value.	not part of a wider historic	events, that is not diminished by
	landscape; or a site with little	modern human influence.
	historic character but which	
	forms part of an area that does	
	have some historic character.	

Views and Visual Amenity

This takes into consideration the visual character of the Site, including the extent of openness or enclosure and the importance of skylines, and the extent to which the landscape contributes to views from sensitive viewpoint locations, or to which development in this area would intrude on sensitive views. Locations such as tourist attractions, promoted viewpoints and national trails will be more sensitive than local footpaths. Locations used for recreation, such as country parks or local public green space, are more sensitive than passing views from rights of way, and private views have less sensitivity than public viewpoints. This criterion also considers visual relationships with nationally designated landscapes.

Lower sensitivity	\longrightarrow	Higher sensitivity
The landscape is enclosed and well screened from public or private view and is not visually prominent in the landscape. The site has little influence of landscape character.	There is clear visibility from public rights of way in the immediate vicinity, to which the Site makes a limited positive contribution, but little intrusion on public views from the wider landscape.	There is clear visibility from sensitive receptor locations where the character of the landscape contributes to the quality of the view. The area is visually prominent in the wider landscape. Views of the site strongly influences landscape character.

Perceptual qualities

Perceptual qualities include scenic value, intact rural character, remoteness and tranquillity. Landscapes that are relatively remote or tranquil (landscapes with a lack of human activity or disturbance, or landscapes with perceived naturalness and traditional rural feel) tend to have higher levels of sensitivity to development compared to landscapes that contain signs of modern development or those with a high level of human disturbance/activity which have yet to recover. High scenic value and dark night skies also increase sensitivity in relation to this criterion. In assessing scenic value, this criterion considered the special qualities of the SDNP, where relevant.

Lower sensitivity	\longrightarrow	Higher sensitivity
An area with a disturbed landscape, strongly influenced by development/activity/ intrusion.	A landscape with scenic qualities and/or some rural character, separation or isolation, but with some distinct intrusive elements – e.g. road noise or an abandoned character resulting from a lack of management.	A highly tranquil and scenic landscape, lacking intrusive elements. A disturbed landscape which has recovered and offers a unique setting. Demonstrates special qualities.

Appendix C Relevant Evidence, Policy, Guidance and Context

Existing Landscape Character Evidence

The key characteristics of each landscape character area/ type that cover the site are referenced in Appendix **Table C.1**, organised into the various landscape elements which are considered under this study.

This appendix also contains summaries of further evidence, policy and guidance that have helped inform this study.

Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works May 2022

Table C.1: Key Landscape Characteristics organised into Landscape Elements

Landscape Element	Natural England National Landscape Character Areas – South Downs National Character Area	South Downs Landscape Character Assessment (2020) – Major Chalk Valley Sides (G3: Adur Valley Sides)	South Downs Landscape Character Assessment (2020) – Major Chalk River Floodplains (F3: Adur Floodplain)	Landscape Character Assessment of West Sussex (2003) - SD5: Downland Adur Valley
Geology and Soils	 Several different types of heathland habitat, including wet heath, wooded heath and chalk heath dependent on loess soils. On the chalk hills, the infertile soils are generally thin, well drained and rich in calcium. 	Valley sides carved from chalk, relatively steep along their whole length. The large disused chalk quarry at Shoreham Cement Works forms a white scar in the landscape.	Periodically waterlogged silty soils support permanent pasture, within fields reclaimed from the floodplain, giving the floodplain a lush, pastoral character and supporting important ecological flora.	Wide sloping chalk valley sides with steep tops.
Topography and Water	 A broad elevated east–west chalk ridge with a predominantly steep north-facing scarp slope and a gentle southerly dip slope, breaking into a series of hills in the west and terminating in distinctive chalk cliffs in the east. The principal rivers – the Arun, Adur, Cuckmere and Ouse – slice through the eastern half of the downs as wide U-shaped valleys with steep sides and flat alluvial floodplains with intensive dairying and crops, and characterised by criss-crossing ditches and meandering river channels…Remnant wetland habitats including floodplain grazing marsh, fens and reed beds. Chalk streams running off both the north- and south-facing scarp slopes providing a key habitat for the scarp and the floodplain 	See above.	 Flat valley floor of the deep U-shaped Adur Valley between Bramber (a former port) and Old Shoreham. Contains the meandering course of the tidal River Adur that flows between artificial flood banks. Public rights of way provide access along the tops of the floodbanks. A landscape of apparent large and expansive scale as a result of the flat landform, consistent pasture land cover, lack of vertical elements and far-reaching views across the open floodplain. Views are contained by the valley sides. 	Wide, open, flat bottomed valley

Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works

Landscape Element	Natural England National Landscape Character Areas – South Downs National Character Area	South Downs Landscape Character Assessment (2020) – Major Chalk Valley Sides (G3: Adur Valley Sides)	South Downs Landscape Character Assessment (2020) – Major Chalk River Floodplains (F3: Adur Floodplain)	Landscape Character Assessment of West Sussex (2003) - SD5: Downland Adur Valley
	landscape, supporting species such as the brown trout.			
Roads, Tracks and Paths	 Roads and villages concentrated in the river valleys, the more elevated areas sparsely settled with scattered farmsteads. The eastern end of the Downs is squeezed against the coastal plain conurbations of Brighton and Hove, and Worthing, which contain a wealth of architecture and give the area a strong sense of identity Public rights of way following drove roads and ancient routes along the accessible downland tops, benefiting from panoramic views across the downs and the Low Weald NCA. Roads and lanes striking across the downs perpendicularly and following historic tracks that originally brought livestock to their summer grazing. 	 The valley sides support an extensive road network, including the A283 on the eastern valley side and Coombes Road in the western valley side. Minor lanes and unsurfaced tracks descend the valley sides – many of these are now public rights of way that allow access up onto the adjacent downs. 		
Settlements and Buildings	Flint, brick and timber frame conspicuous in the built environment in walls, buildings, churches and barns, while roofs are of tile, slate or traditional thatch. The South Downs was once lined with windmills, some of which survive.	A string of shrunken medieval villages lie along the lower slopes of the western valley side e.g. Botolphs, Coombes, Applesham Farm. These are surrounded by early enclosures.	 Saltern mounds provide evidence of the medieval salt-extraction industry. Typically absent of settlement, with the exception of the ancient settlement edge of Beeding (a 	 Impressive views across the valley, including striking views of Lancing College. Visual intrusion from the disused cement

Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works

Landscape Element	Natural England National Landscape Character Areas – South Downs National Character Area	South Downs Landscape Character Assessment (2020) – Major Chalk Valley Sides (G3: Adur Valley Sides)	South Downs Landscape Character Assessment (2020) – Major Chalk River Floodplains (F3: Adur Floodplain)	Landscape Character Assessment of West Sussex (2003) - SD5: Downland Adur Valley
	Bronze-age round barrows and prominently sited iron-age hill forts, such as Cissbury Ring and Old Winchester Hill, are notable prehistoric features of the scarp and hill tops	The prominent Gothic chapel of Lancing College is a particularly distinctive landmark standing at the southern end of the Adur Valley. The chimney of the Shoreham Cement Works is also a key landmark feature.	 medieval port) on the northern boundary of the character area. Views to the landmarks of Bramber Castle and Lancing College on the adjacent valley sides – Lancing College is a particularly distinctive buildings at the 'entrance' to the Adur Valley. 	 works and chalk quarries, major roads and pylons. Small hamlets and farmsteads on lower sides using varied materials including flint, brick and tile hanging.
Woodlands and Trees	Woodland a feature of the central downs and, to a lesser extent, the western downs, also concentrated on the steep scarp slopes, consisting of both broadleaved, mostly ancient, woodland with beech, veteran trees, ash and sycamore, and conifers, with some large plantations.	Woodlands along the lower slopes are particularly distinctive and form a strong wooded edge to the floodplain.	 Groups of willows and alders occur sporadically alongside the river and drainage channels providing important visual and ecological features. The absence of woodland and generally low incidence of trees results in a large scale, open landscape with extensive views across the floodplain. 	
Fieldscape	The eastern downs characterised by large open arable and grassland fields, mostly enclosed by the 16th century, with a general absence of woodland and hedgerow boundaries, creating an open, exposed	Pasture, chalk grassland and woodland occupy steeper slopes, for example at Mill Hill		

Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works

Landscape Element	Natural England National Landscape Character Areas – South Downs National Character Area	South Downs Landscape Character Assessment (2020) – Major Chalk Valley Sides (G3: Adur Valley Sides)	South Downs Landscape Character Assessment (2020) – Major Chalk River Floodplains (F3: Adur Floodplain)	Landscape Character Assessment of West Sussex (2003) - SD5: Downland Adur Valley
	landscape. To the west of the River Arun, where holdings were smaller and 'sheep-and- corn' farming less important, hedgerows enclose medium to large irregular fields between the woodlands and designed parkland landscapes, the latter a particular feature of the central areas.	and Anchor Bottom – these are important for biodiversity.		
	Distinctive fragments of semi-natural chalk grassland dotted with chalk springs on scarp and combe slopes, with important associated habitats including rare chalk heath and species-rich chalk scrub.			
Perceptual Qualities		Away, from the roads, the valley sides form a tranquil, rural setting to the floodplain.	A small area of the Adur Estuary (designated as a SSSI) extends into the character area, supporting ecologically important saltmarsh and intertidal mudflats, of high value to wading birds.	
			Tranquillity affected by proximity of built development on the valley sides, the A283 and A27.	
Other elements	A vast array of wildlife such as otters and barn owls; lesser known species such as the barbastelle bat, the chalk carpet moth, sundews (carnivorous plants) and the round-			Relatively open character

Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works

Landscape Element	Natural England National Landscape Character Areas – South Downs National Character Area	South Downs Landscape Character Assessment (2020) – Major Chalk Valley Sides (G3: Adur Valley Sides)	South Downs Landscape Character Assessment (2020) – Major Chalk River Floodplains (F3: Adur Floodplain)	Landscape Character Assessment of West Sussex (2003) - SD5: Downland Adur Valley
	headed rampion, the county flower of Sussex; threatened species include the bee orchid, small blue butterfly and nightjar.			

Further Evidence and Background

Sussex Historic Landscape Characterisation (2010)

The site is located within the broad historic landscape characterisation (HLC) type described as 'Industry', with the sub-type of 'mineral/chemical processing' being assigned to the western and central extents of the site where the original cement works buildings are positioned. The eastern extents of the site are classified as 'chalk extraction' within the HLC sub-types⁸.

Mineral/chemical processing sites are closely related to their geology and extraction character types. Areas of chalk extraction are generally identified along the chalk escarpment, and in the case of Shoreham Cement Works, situated within the valley followed by the River Adur, which cuts through the chalk hills. This character type is closely associated with regenerated scrub and downland. Both chalk extraction and mineral processing activities can be traced back to the 1800s and are still relevant today.

The landscape surrounding the site is generally characterised by downland fields used as pasture, with both formal and informal enclosure. Occasional blocks of unenclosed/unimproved land, some allowing open access, are scattered across the study area, most notably to the immediate north of the site.

With regard to fieldscape and tracks, and as highlighted in the Natural England National Character Assessment for the South Downs National Character Area:

"The eastern downs characterised by large open arable and grassland fields, mostly enclosed by the 16th century, with a general absence of woodland and hedgerow boundaries, creating an open, exposed landscape...

Public rights of way following drove roads and ancient routes along the accessible downland tops, benefiting from panoramic views across the downs and the Low Weald NCA. Roads and lanes striking across the downs perpendicularly and following historic tracks that originally brought livestock to their summer grazing."

South Downs National Park: View Characterisation and Analysis (2015)

The View Characterisation and Analysis study recognises the Shoreham Cement Works chimney as a key landmark within the G3 Adur Valley Sides landscape character area⁹. Lancing

College is also noted as a particularly distinctive feature located at the southern end of the Adur Valley, with Bramber Castle located at the northern end as the river enters the park. Other local landmarks which fall within the study area and just beyond include the Cissbury Ring and the Chanctonbury Ring.

As part of the study, a selection of representative views were identified across the National Park that either reveal the special qualities of the South Downs or are noted viewpoints either within the LCA or on OS maps. Viewpoints relevant to Shoreham Cement Works include:

- 41: Beeding Hill "The view of the Adur Valley from the downs above Upper Beeding is noted in the literature for the South Downs Way. This viewpoint lies to the west of the summit of Beeding Hill, where the South Downs Way crosses with the Monarch's Way, and where a car park is located."
- 30: Lancing College "Views from the Downs Link long distance footpath looking across the River Adur from the opposite side of the gap towards the Lancing College Chapel are noted in the literature for the trail. This viewpoint is representative of those views. Lancing College is also noted as 'majestic' when viewed from the Monarch's Way."
- 75: Steyning Round Hill "This viewpoint, from Steyning Round Hill, provides a panoramic view over Steyning..."
- 21: Cissbury Ring "Cissbury Ring is identified as a landmark feature within the SDILCA, and views revealing this key landmark feature are available from the Monarch's Way which passes close to the north. The ring is noted as a feature in literature published about the Monarch's Way."

Views that are identified as being important for observing specific landmarks (numbers 30 and 21), have a series of aims and management guidance, including:

- "Maintain the ability to see and appreciate landmarks in their rural landscape setting;
- Maintain the landmarks as prominent features of views across the Park (and ensure new elements do not compete for prominence);
- Maintain the ability to understand and appreciate landmarks; and
- Maintain other special qualities in the view such as the rich variety of wildlife and habitats (including iconic habitats), the 'unspoilt' nature of the landscape and lack

⁹ https://www.southdowns.gov.uk/wp-

content/uploads/2015/10/Viewshed-Study-Report.pdf

https://www.westsussex.gov.uk/media/1776/sussex_hlc_volume_4.pdf

of intrusive development, the distinctive field patterns and picturesque villages with an intimate relationship with their landscape."

Although no representative viewpoints are identified within the Adur Valley, the aims and management guidance set out the direction on views associated with major river valley floodplains is relevant to the site, including:

- "Maintain the ability to access these viewpoints and the dramatic topography that enables these breathtaking views;
- Maintain the distinctive U-shaped valley topography and meandering course of the rivers;
- Maintain the rich variety of wildlife and habitats (particularly the iconic chalk and wetland habitats);
- Maintain the mostly 'unspoilt' nature of the valleys and general lack of intrusive development which result in a sense of tranquillity. Consider opportunities to remove existing intrusive development from views; and
- Maintain the distinctive farming patterns and picturesque villages picturesque with an intimate relationship with their landscape."

South Downs Tranquillity Study (2017)

Tranquillity, which *"is considered to be a state of calm, quietude and is associated with a feeling of peace"*¹⁰, is one of the National Park's seven special qualities. The site is assessed to hold an intermediate tranquillity which is negatively impacted by the presence of industrial activity and proximity to the A283. These areas of intermediate tranquillity are considered to be the most vulnerable to change and therefore every effort should be made to avoid further harm. The importance of the Adur Valley in providing cultural services such as tranquillity, sense of place and recreation is also recognised within the 2016 Ecosystem Services mapping project¹¹, alongside other regulating, provisioning and supporting services.

Shoreham Cement Works AAP Evidence Base Studies – Geodiversity Report (2018)

The quarry itself offers considerable geodiversity interest, providing insight into the geological and climatic changes which drive the formation of the downland landscape and habitats which are unique to the South Downs¹². Furthermore,

the insight into the Cretaceous period that these chalk beds provide are of an international significance. With the cuttings at the M3 in Winchester becoming overgrown and the cliffs at Seven Sisters becoming more susceptible to collapse, Shoreham Cement Works provides the only accessible location where details of the Lewes and Seaford Chalk formations can be examined safely.

Chalk exposures are still accessible throughout areas C and D (see plate 1). However, like other extraction sites within the South Downs, as scree and vegetation growth continue to develop, these faces will become covered if not managed correctly. Therefore, careful consideration should be had for how access to some of these faces can be maintained within future development scenarios, including the management of vegetation and backfilling. Suggestions for the creation of a geology trail could enhance the interpretation and recreation value of this landscape within the Shoreham Cement Works development.

Shoreham Cement Words Preliminary Ecological Appraisal and Preliminary Roost Assessment (2018)

Initial ecological assessments highlight the importance and unique value the site provides for local wildlife, as well as the impact development could have on surrounding designations¹³. The northern boundary sits adjacent to the Beeding Hill to Newtimber Hill SSSI. Furthermore, the site is situated within the Impact Risk Zone of the Adur Estuary SSSI. Therefore, any development will require considerable consultation with Natural England and appropriate mitigation and enhancement schemes to offset any negative impacts on these designations.

Areas of important habitat can be found across the site, particularly the significant stretch of Open Mosaic Habitat on Previously Developed Land, which in itself warrants the selection of the former works as a county Local Wildlife Site. Furthermore, patches of Lowland Calcareous Grassland, Lowland Mixed Deciduous Woodland, a pond and the site's proximity to the River Adur and associated habitats highlight the ecological potential of the site.

Although further surveys are required, bat roosts were confirmed within some of the former cement works buildings. Additionally, habitats suitable for great crested newt, hazel dormouse, invertebrates, reptiles, badgers and breeding birds are all present on the site. Primary recommendations for

¹³ The Ecology Consultancy (2018). Shoreham Cement Works Preliminary Ecological Appraisal and Preliminary Roost Assessment

¹⁰ https://www.southdowns.gov.uk/wp-

content/uploads/2018/09/Shoreham-AAP-Scoping-Report.pdf ¹¹ https://ecosystemsknowledge.net/sites/default/files/wp-

content/uploads/EKNuploads/Mapping%20of%20ecosysem%20servic es%20within%20the%20South%20Downs%20National%20Park%20u sing%20the%20EcoServ%20GIS%20Tool%2C%202016.pdf

¹² SLR (2018). Geodiversity Report: Shoreham Cement Works Area Action Plan – Evidence Base Studies

development to enhance the site include the creation of calcareous wildflower grasslands and brownfield landscaping, supported by urban greening features including green roofs and SuDS.

Ongoing Studies

In tandem with this study, a range of other studies were commissioned including contaminated land, transport, viability and industrial archaeology studies. These working studies were used to help formulate certain design principles, as crossed referenced in **Chapter 5**.

Policy and Guidance

South Downs Local Plan (2019)

The South Downs Local Plan, which was adopted in July 2019 and covers the period from 2014-2033, sets out the direction of future growth within the National Park and the fundamental policies planning applications need to adhere to¹⁴.

The objectives of the South Downs Local Plan include:

"1. To conserve and enhance the landscapes of the National Park.

2. To conserve and enhance the cultural heritage13 of the National Park.

3. To conserve and enhance large areas of high-quality and well-managed habitat to form a network supporting wildlife throughout the landscape.

4. To achieve a sustainable use of ecosystem services14 thus enhancing natural capital across the landscapes of the National Park and contributing to wealth and human health and wellbeing.

5. To protect and provide opportunities for everyone to discover, enjoy, understand and value the National Park and its special qualities.

6. To adapt well to and mitigate against the impacts of climate change and other pressures.

7. To conserve and enhance the villages and market towns of the National Park as thriving centres for residents, visitors and businesses.

8. To protect and provide for the social and economic wellbeing of National Park communities supporting local jobs, affordable homes and local facilities.

9. To protect and provide for local businesses including farming, forestry and tourism that are broadly compatible

¹⁴ https://www.southdowns.gov.uk/wpcontent/uploads/2019/07/SD_LocalPlan_2019_17Wb.pdf with and relate to the landscapes and special qualities of the National Park."

The Local Plan highlights the special qualities of the River Adur corridor as the relationship between the major floodplains and valley sides, Coombes Farm which gives visitors an insight into the South Downs way of life, the historic buildings of Bramber village and Lancing College, and the Downs Links, which provides opportunities for non-motorised access. The principal challenge identified for the Adur corridor is flooding, whereas the main opportunities relate to recreation, with the Shoreham Cement Works hosting a primary site for this.

All development proposals within the National Park will need to demonstrate how they have achieved a landscape-led design, conserve and enhance landscape character, tranquillity and dark night skies, and safeguard views. High quality and sensitive design will be permitted where it can deliver a *"positive contribution to the overall character and appearance of the area"*. This can be achieved through applying design principles which mirror the principles set out in Strategic Policy SD4: Landscape Character, SD5: Design, SD6: Safeguarding Views, SD7: Relative Tranquillity and SD8: Dark Night Skies (see also The Design Guide SPD¹⁵).

Strategic Site Policy SD56: Shoreham Cement Works is identified within the Local Plan as "an area of significant opportunity for an exemplar sustainable mixed use development, which delivers a substantially enhanced landscape and uses that are compatible with the purposes of the National Park." The SDNP will therefore produce an Area Action Plan for the site with the overarching aims of:

- "a) Enhancing the visual impact of the site from both the nearby and distant public viewpoints;
- b) Conserving, enhancing and providing opportunities for understanding the biodiversity, geodiversity, historic significance and cultural heritage of the site;
- c) Ensuring the delivery of ecosystems services; and
- d) Ensuring that the design of any development is of the highest quality and appropriate to its setting within a national park."

Development principles for the site include:

- "Enhance the site's contribution to ecosystem services;
- Contribute towards the GI network;

¹⁵ https://www.southdowns.gov.uk/wp-content/uploads/2021/06/Public-Consultation-Design-Guide-SPD-low-res.pdf

- Develop previously developed land in Areas A & B;
- Maximise and enhance levels of biodiversity on the site in order to support the adjacent Anchor Bottom SSSI, while preserving the Scheduled Monument;
- Explore the potential for biodiversity off-setting;
- Enable geo-conservation, given the scientific and educational value of the strata;
- Develop renewable energy generation, such as solar panels and small scale combined heat and power plant and explore hydro-electricity generation;
- Reduce waste including re-using and recycling waste on site;
- Explore a wider environmental enhancement programme to address issues such as the removal of overhead power lines nearby;
- Deliver SuDS and minimising the amount of impermeable surfaces;
- Explore an integrated sustainable transport solution, including innovative and alternative modes of transport to the private car, promoting demand management measures, and increasing road safety for the benefit of all users;
- Improve cycle and walking routes in the vicinity, enhancing the Downs Link recreational route between Upper Beeding and Shoreham, including a southern loop from the South Downs Way; and
- Develop sustainable visitor and tourism opportunities appropriate to a national park, including promoting the understanding and enjoyment of its special qualities."

At present, the Site has been divided into four sub-areas, as shown in Plate 1 below.

Plate 1 – (Figure 8.1 from SDLP 2019)



¹⁶https://assets.publishing.service.gov.uk/government/uploads/system/ uploads/attachment_data/file/1005759/NPPF_July_2021.pdf Areas A and B are classed as brownfield land due to their use as the former cement works buildings and offices. Areas C and D cannot be considered as brownfield land due to the NPPF's definition of previously developed land excluding mineral extraction¹⁶.

South Downs Partnership Management Plan (2020-2025)

The Partnership Management Plan sets out the management aims for the National Park over the next five years. This includes ten ambitions, including:

1.	Landscape and natural beauty	Protect landscape character
		Create green infrastructure
		Target new payments
2.	Increasing resilience	Improve soil and water
		Improve trees and woodland
3.	Habitats and species	Join up habitats
		Manage priority and invasive species
4.	Arts and heritage	Conserve heritage
		Promote contemporary arts and crafts
5.	Outstanding	National Park for all
	experiences	Improve accessibility
		Encourage sustainable transport
6.	Lifelong learning	Provide outdoor learning for young people
7.	Health and wellbeing	Improve health and wellbeing
8.	Creating custodians	Increase volunteering
9.	Great places to live	Increase affordable housing
		Support vibrant communities
		Improve digital infrastructure
10.	Great places to work	Strengthen enterprise
		Increase destination awareness
		Promote sustainable tourism

Appendix C Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works May 2022

To help support the SDNP in achieving their overarching ambitions, the design principles for the Shoreham Cement Works should reflect and incorporate these aims as fundamental elements.

South Downs People and Nature Network (PANN) (2020)

The South Downs PANN sets out how partners within the South Downs and further afield can work together and plan for the connecting of nature, people and natural services. Within the network, the Adur Blue-Green Corridor is recognised as a key Natural Capital Investment Area (NCIA) due to its role in providing access to the Downs, especially for coastal communities. Furthermore, it plays an important role in managing water resources and providing national significant habitats for biodiversity. Any development at Shoreham Cement Works will need to prove how it can link into the wider aspirations for the strategic blue-green corridor.

South Downs National Park Dark Skies Technical Advice Note (2018)

The National Park was designated as an International Dark Sky Reserve in May 2016 with the site falling within an area of 'Intrinsic Rural Darkness' (Zone E1a)¹⁷. These areas are classified as a 'dark sky' and where the Milky Way is visible to the naked eye. The dark conditions in this zone are of great importance and should be retained through the careful planning and design of lighting within the new development at Shoreham Cement Works.

¹⁷ https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-10-SDNPA-Dark-Skies-Technical-Advice-Note-2018.pdf

Landscape Context – Local Landscape Character Areas outside Shoreham Cement Works Site

The following sections presents information of the Local Landscape Character Areas outside the Shoreham Cement Works Site (refer to **Figure 3**). It includes information on key characteristics, opportunities and constraints and a landscape sensitivity evaluation.

Appendix C Relevant Evidence, Policy, Guidance and Context

Shoreham Cement Works May 2022

LLCA 4 – Adur Valley Floodplain



Landscape Evidence

This LLCA is focused around the floodplain of the River Adur, which runs north to south on the low ground through the centre of the study area, located to the west of the Shoreham Cement Works site. This flat and open LLCA is broadly located within the Major Chalk River Floodplains (F3: Adur Floodplain LCA). The key characteristics of this area are summarised in the South Downs LCA (2020)¹⁸ as follows:

Key Characteristics:

- Geology and Soils "Periodically waterlogged silty soils support permanent pasture, within fields reclaimed from the floodplain, giving the floodplain a lush, pastoral character and supporting important ecological flora;
- Topography and Water Flat valley floor of the deep U-shaped Adur Valley between Bramber (a former port) and Old Shoreham; A landscape of apparent large and expansive scale as a result of the flat landform, consistent pasture land cover, lack of vertical elements and far-reaching views across the open floodplain. Views are contained by the valley sides; A small area of the Adur Estuary (designated as a SSSI) extends into the character area, supporting ecologically important saltmarsh and intertidal mudflats, of high value to wading birds;
- Roads, Tracks and Paths Contains the meandering course of the tidal River Adur which flows between artificial flood banks. Public rights of way provide access along the tops of the floodbanks; Tranquillity affected by proximity of built development on the valley sides, the A283 and A27;
- Settlements and Buildings Saltern mounds provide evidence of the medieval salt-extraction industry; Typically absent of settlement, with the exception of the ancient settlement edge of Beeding (a medieval port) on the northern boundary of the character area; Views to the landmarks of Bramber Castle and Lancing College on the adjacent valley sides Lancing College is a particularly distinctive building at the 'entrance' to the Adur Valley;
- Woodlands and Trees Groups of willows and alders occur sporadically alongside the river and drainage channels providing important visual and ecological features; The absence of woodland and generally low incidence of trees results in a large scale, open landscape with extensive views across the floodplain."

¹⁸ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-F-Major-Chalk-River-Floodplains.pdf

Opportunities and constraints:

- Geology and Soils There is a need for development (and construction) at the site, and associated surface water management, to be sensitive to potential offsite effects on the River Adur, including its areas of floodplain meadows and grazing marshland along the banks of the river, as well as saltmarsh and tidal mudflats which form part of the Adur Estuary SSSI.
- **Topography and Water** Any new development in the floodplain could be both at risk of flooding and increase the flood risk in the Adur Valley. Further development in the floodplain requires careful consideration in terms of flood risk and implications for water quality. This is particularly important, considering the delicate nature of the adjacent chalk river and its rich aquatic flora and fauna.
- Roads, Tracks and Paths The A283 and key active travel routes, such as the South Downs Way and Downs Link, are located in this LLCA. Footpaths on both sides of the River Adur provide good access to recreational activities associated with the river, including fishing and boating. These routes offer opportunity for access to potential leisure facilities at the site and easily commutable active travel links to Upper Beeding, to the north, and Shoreham-by-Sea, to the south, with its associated rail links along the south coast.
- Settlements and Buildings Any development at the site should conserve and enhance views of Bramber Castle and Lancing College, whilst seeking to reference the industrial heritage of the valley, by celebrating views of the Shoreham Cement Works chimney.
- Woodlands, Trees and fieldscape Explore opportunities to provide wildlife connections between the site and the traditional landscape of grazing marshland, meadows and wet woodland on the floodplain.
- Perceptual qualities, Views and Visual Amenity The pastoral and relatively undeveloped nature of the floodplain is sensitive to mixed used development.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Landscape elements: Geology and Soils Topography and Water • 	Small areas of saltmarsh, and tidal mudflats along the banks of the River Adur (which form part of the Adur Estuary SSSI) are ecologically sensitive and provide high value to wading birds. The river and adjoining floodplain landscape provides an important suite of regulating, supporting and provisioning ecosystem services, notably water cycling and soil formation. Although these rich alluvial soils are fertile, frequent waterlogging means their use is generally limited to pastoral grazing. Any development at the site should be sensitive to potential offsite effects.	Moderate-high
Cultural and Historical AssociationsLandscape elements:• Settlements and Buildings• Roads, Tracks and Paths• Woodlands and Trees Fieldscape	The industrial and medieval history of the valley is apparent through the settlement, access and fieldscape pattern. Saltern mounds provide evidence of the medieval salt extraction industry and are highly sensitive to change.	Moderate -high
Views and Visual Amenity	The wide valley and open landscape create impressive views along the valley floor, to the Shoreham Cement Works chimney, Bramber Castle and Lancing College, which are sensitive to visual intrusion and change.	High

Landscape Sensitivity Evaluation
Criteria	Commentary	Sensitivity
Perceptual Qualities	This is a rural landscape. However, tranquility is influenced by built development on the valley sides and the A283 which lowers sensitivity. Some pockets of higher tranquillity exist away from the A283, including around Ladywell Stream and Barge Dyke.	Moderate
Overall Sensitivity	The flat valley floor of the floodplain is characterised by pasture and prone to flooding. Periodically waterlogged soils support some important ecological flora. Evidence of the medieval salt-extraction industry survives in various places along the floodplain and increases the cultural and historical sensitivity of the valley. The rural and tranquil perception of the landscape is affected by adjacent urban development, major roads and Shoreham Cement Works. This affords the LLCA a moderate-high sensitivity.	Moderate -high

Shoreham Cement Works May 2022

LLCA 5 and 6 – Eastern Adur Valley Sides





Landscape Evidence

These LLCAs are focused on the eastern valley sides of the River Adur, to the north and south of the Shoreham Cement Works site. These LLCAs are clearly defined by the marked topographical variation between the flat valley floor and steep valley sides. They are broadly located within the Major Chalk Valley Sides (G3: Adur Valley Sides). Select relevant key characteristics from the South Downs LCA (2020)¹⁹ include:

Key Characteristics:

- Topography and Water "Valley sides carved from chalk, relatively steep along their whole length. The large disused chalk quarry at Shoreham Cement Works forms a white scar in the landscape; Away, from the roads, the valley sides form a tranquil, rural setting to the floodplain;
- Roads, Tracks and Paths The valley sides support an extensive road network, including the A283 on the eastern valley side...; Minor lanes and unsurfaced tracks descend the valley sides many of these are now public rights of way that allow access up onto the adjacent downs;
- Settlements and Buildings The prominent Gothic chapel of Lancing College is a particularly distinctive landmark standing at the southern end of the Adur valley. The chimney of the Shoreham Cement Works is also a key landmark feature;
- Woodlands and Trees Pasture, chalk grassland and woodland occupy steeper slopes, for example at Mill Hill and Anchor Bottom – these are important for biodiversity; Woodlands along the lower slopes are particularly distinctive and form a strong wooded edge to the floodplain."

¹⁹ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-G-Major-Chalk-Valley-Sides.pdf

Opportunities and constraints:

- Topography and Water The valley sides provide a rural tranquil setting to the River Adur floodplain. Any development at the site should be sensitive to the role the valley sides play in providing this setting. The Shoreham Cement Works creates an abrupt edge in the valley side.
- Roads, Tracks and Paths Recreational links between any new footpaths/ cycle tracks in the site and the wider Public Right of Way networks on the valley sides should be explored, particularly in relation to the South Downs Way promoted route.
- Settlements and Buildings The chimney at the Shoreham Cement Works site is a landmark in the valley. Any redevelopment at the site should seek to celebrate this landmark. Views to the Gothic chapel of Lancing College, which sits at the southern end of the valley in a prominent raised and open setting, should be maintained. The links between the valley side settlements and the adjacent floodplain landscape should be referenced in any new development at the site.
- Woodlands and Trees Wildlife links between the site and Priority Habitats, including lowland calcareous grassland, good quality semi-improved grassland and deciduous woodland (some of which is ancient) on the valley side should be explored, particularly surrounding Beeding Hill to Newtimber Hill SSSI and Mill Hill SSSI and Local Nature Reserve.
- Fieldscape Small blocks of 18th and 19th century enclosure, including at Erringham, provide evidence of the historical field pattern and should be conserved. Opportunities for creation of additional chalk grassland sites on valley sides should be sought, alongside opportunities to link them to existing chalk grassland at Mill Hill and Anchor Bottom.
- Perceptual qualities, Views and Visual Amenity The valley sides form a tranquil, rural setting to the floodplain, which is highly sensitive to development.

Criteria	Commentary	Sensitivity
 Physical and Natural Character and Function Geology and Soils Topography and Water 	Areas of chalk grassland and deciduous woodland (some of which is ancient) on the steep eastern valley sides at Mill Hill, Erringham and Anchor Bottom, provide areas of significant ecological interest, and are highly sensitive to change.	Moderate-high
 Cultural and Historical Associations Settlements and Buildings Roads, Tracks and Paths Woodlands and Trees Fieldscape 	Small blocks of 18 th and 19 th century enclosure around medieval settlements and farms (including Erringham on the eastern valley side) provide cultural and historical associations. The former workers' cottages of the Shoreham Cement Works sit alongside the A283 and provide an important link to the industrial heritage of the valley. Permanent pasture, hedgerows and woodland provide locally important ecological features and corridors. Large-scale arable fields reflect the importance of the valley sides in providing provisioning, alongside other, ecosystem services.	Moderate
Views and Visual Amenity	The Gothic chapel at Lancing Colleges is a notable landmark at the southern end of the valley, and views to this feature are sensitive to change. Views over the River Adur from the parking area and nature reserve at Mill Hill are also sensitive to change, as well as occasional glimpsed views of the top of Shoreham Cement Works chimney.	Moderate-high

Criteria	Commentary	Sensitivity
Perceptual Qualities	The absence of larger villages on the valley side gives the Adur Valley a remote and tranquil character (away from the busy A283). The valley sides also offer opportunities to appreciate darker skies, which are sensitive to lit development.	Moderate-high
Overall Sensitivity	There are areas of chalk grassland and woodland that offer significant ecological interest and local nature networks. The valley sides play an important role in providing a rural setting to the River Adur Valley with it associated small medieval hamlets and farms. There are notable landmarks within the valley (Shoreham Cement Works chimney) and to the south at Lancing College. These features combine to create an overall moderate-high sensitivity to change.	Moderate-high

Shoreham Cement Works May 2022

LLCA 7 and 10 – Western Adur Valley Sides





Landscape Evidence

These LLCAs are focused to the western valley sides of the River Adur, opposite and stretching north and south of the Shoreham Cement Works site. These LLCAs are clearly defined by the marked topographical variation between the flat valley floor and steep valley sides, although slopes are generally less steep than their eastern counterparts. They are broadly located within the Major Chalk Valley Sides (G3: Adur Valley Sides). Select relevant key characteristics from the South Downs LCA (2020)²⁰ include:

Key Characteristics:

- Topography and Water "Valley sides carved from chalk, relatively steep along their whole length. The large disused chalk quarry at Shoreham Cement Works forms a white scar in the landscape; Away, from the roads, the valley sides form a tranquil, rural setting to the floodplain;
- Roads, Tracks and Paths The valley sides support an extensive road network, including the... Coombes Road in the western valley side; Minor lanes and unsurfaced tracks descend the valley sides – many of these are now public rights of way that allow access up onto the adjacent downs;
- Settlements and Buildings A string of shrunken medieval villages lie along the lower slopes of the western valley side e.g. Botolphs, Coombes, Applesham Farm. These are surrounded by early enclosures; The prominent Gothic chapel of Lancing College is a particularly distinctive landmark standing at the southern end of the Adur valley. The chimney of the Shoreham Cement Works is also a key landmark feature;
- Woodlands and Trees Pasture, chalk grassland and woodland occupy steeper slopes, for example at Mill Hill and Anchor Bottom – these are important for biodiversity; Woodlands along the lower slopes are particularly distinctive and form a strong wooded edge to the floodplain."

²⁰ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-G-Major-Chalk-Valley-Sides.pdf

Opportunities and constraints:

- **Topography and Water** The valley sides provide a rural tranquil setting to the River Adur floodplain. Any development at the site should be sensitive to the role the valley sides play in providing this setting.
- Roads, Tracks and Paths Recreational links between any new footpaths/ cycle tracks in the site and the wider Public Right of Way networks on the valley sides should be explored, particularly in relation to the South Downs Way promoted route.
- Settlements and Buildings The chimney at the Shoreham Cement Works site is a landmark in the valley. Any redevelopment at the site should seek to celebrate this landmark. The links between the valley side settlements and the adjacent floodplain landscape should be referenced in any new development at the site. Views southward towards the distinctive Gothic chapel at Lancing College should also be celebrated and enhanced.
- Woodlands and Trees Wildlife links between the site and Priority Habitats, including good quality semi-improved grassland and deciduous woodland (including a block of ancient woodland at Coombes) on the valley side should be explored.
- Fieldscape Small blocks of 18th and 19th century enclosure, including at Coombes, Botolphs and Applesham, provide evidence of the historical field pattern and should be conserved.
- Perceptual qualities, Views and Visual Amenity The valley sides form a tranquil, rural setting to the floodplain, which is highly sensitive to development.

Criteria	Commentary	Sensitivity
Physical and Natural Character and Function	Areas of chalk grassland on the valley sides provide locally important ecological features, contribute to wildlife corridors and provide	Moderate - high
Landscape elements:	multifunctional ecosystem services.	
Geology and Soils		
Topography and Water		
Cultural and Historical Associations Landscape elements: • Settlements and Buildings • Roads, Tracks and Paths	Small blocks of 18 th and 19 th century enclosure around medieval settlements and farms (including Coombes, Botolphs and Applesham on the western valley side) provide cultural and historical associations. The time-depth of the landscape is reflected in the presence of St Botolph's Church, a Saxon building which dates back to 950. Named after the patron saint of wayfarers, the church receives visitors walking the South Downs Way. Views towards the distinctive Gothic chapel at	Moderate-high
Woodlands and Trees	history and development during the 1800s.	
Fieldscape	Areas of woodland and other habitats, including permanent pasture and hedgerows, provide locally important ecological features and wildlife corridors. Arable fields reflect the working nature of the South Downs landscape and reinforces the importance of the valley sides in providing multifunctional ecosystem services.	

Criteria	Commentary	Sensitivity
Views and Visual Amenity	The western valley side offers the opportunity for direct views into the Shoreham Cement Works site, particularly along Coombes Road. Any development here should be sensitive to change in these views, particularly in change that could result in new development seen on the horizon. The Gothic chapel at Lancing Colleges is a notable landmark at the southern end of the valley, and views to this feature are sensitive to change, particularly on Public Rights of Way to the south of Coombes.	High
Perceptual Qualities	The absence of larger villages on the valley sides gives the Adur Valley a remote and tranquil character (away from the busy A283 on the opposite side of the valley). Areas of significant tranquillity and enclosure can be experienced within small dry valleys, for example Winding Bottom, and wooded paths. The valley sides also offer opportunities to appreciate darker skies, which are sensitive to lit development.	Moderate-high
Overall Sensitivity	Areas of semi-natural grassland and deciduous woodland offer significant ecological interest and movement for wildlife. The valley sides play an important role in providing a rural setting to the River Adur Valley, with its associated small medieval hamlets and farms. There are notable landmarks within the valley (Shoreham Cement Works chimney) and to the south at Lancing College, with prominent views into the Cement Works had across the LLCAs, particularly from Coombes and Coombes Road. These features combine to create an overall moderate-high sensitivity to change.	Moderate-high

Shoreham Cement Works May 2022

LLCA 8 – Eastern Adur Open Downlands





Landscape Evidence

The LLCA is located on the open downlands to the east of the River Adur, and east of the Shoreham Cement Works site. The LLCA is broadly located within the Open Downland (A2: Adur to Ouse Open Downs LCA) and is characterised by the rolling downland landscape furrowed by dry valleys. This LCA stretches east, beyond the study area, to the River Ouse. Select representative key characteristics from the South Downs LCA (2020)²¹ include:

Key Characteristics:

- Geology and Soils "Significant areas of unimproved chalk grassland...;
- Topography and Water Vast open rolling upland chalk landscape of blunt, whale-backed downs...; Furrowed by extensive branching dry valley systems which produce deep, narrow, rounded coombes...; Large open skies ensure that weather conditions are a dominant influence creating a dynamic landscape, with considerable seasonal variation; Extensive views from the top of the downs...;
- Roads, Tracks and Paths Good public access with a network of public rights of way and open access land [and as noted in the Natural England national character assessment for the South Downs National Character Area "public rights of way following drove roads and ancient routes along the accessible downland tops"];
- Settlements and Buildings The typical settlement form is relatively late in origin and comprises isolated farmsteads of 18th -19th century. The individual farmsteads are often prominent features in the landscape; Building materials are typically flint, red brick and clay tiles, with more modern materials used in farm buildings;
- Woodlands and Trees Occasional scrub and woodland on steeper slopes add to the overall diversity of chalk grassland habitats, contributing to biodiversity and providing visual texture in the landscape;
- Fieldscapes Large scale irregular fields (of 20th century date) of arable and pasture bounded by visually permeable post and wire fencing or sparse thorn hedgerows creating a very open landscape supporting a range of farmland birds..."

²¹ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-A-Open-Downland.pdf

Opportunities and constraints:

- Roads, Tracks and Paths The network of Public Rights of Way, South Downs Way, long distance trails and open access land offer extensive recreational value. Recreational links between any new footpaths/ cycle tracks in the site and this network should be explored. A limited extent of public roads traverse this landscape, making tracks such as Mill Hill relatively busy to cars attempting to reach popular walking spots.
- Settlements and Buildings Settlement in this area is limited to occasional farms, and the open rolling rural landscape is very sensitive to change. Any development at the site should be sensitive to potential changes in views, including any potential development that could be seen on the horizon/ alter sensitive skylines. The top of the Shoreham Cement Works chimney can be viewed within the western extents of the LLCA and provides an iconic local landmark which should be celebrated.
- Woodlands and Trees Occasional scrub and woodland on steeper slopes add to the overall diversity of chalk grassland habitats. Wildlife links between the site and these surrounding habitats should be explored, with special consideration for movement corridors due to the distinct lack of hedgerows and other linear features.
- Perceptual qualities, Views and Visual Amenity An open, rural landscape with pockets of extreme remoteness. Highly sensitive to mixed used development.

Criteria	Commentary	Sensitivity
Physical and Natural Character and Function	This is an open and rolling landscape (the steep edge adjacent to the quarry is noted) that includes ecologically rich chalk grasslands which are	High
Landscape elements:	highly sensitive to change.	
Geology and Soils		
Topography and Water		
Cultural and Historical Associations	The Iron Age Hill forts, and other historic features such as tracks and the field pattern, and the role that the open downlands play in providing a setting are highly consitive to change.	High
Landscape elements:	setting are highly sensitive to change.	
 Settlements and Buildings 	particularly in relation to the working arable farmland which supports a range of farmland birds.	
 Roads, Tracks and Paths 		
Woodlands and Trees		
Fieldscape		
Views and Visual Amenity	This area offers iconic and extensive views north across the scarp to the Low Weald and south over the dip-slopes towards the coast. These views are highly sensitive to change, particularly change that could be seen above the horizon. This is a particular consideration due to the visually permeable nature of field boundaries, allowing for changes on the landscape to be viewed from miles around.	High

Criteria	Commentary	Sensitivity
Perceptual Qualities	There is a strong sense of tranquillity and remoteness across the downs, with a limited sense of human intervention in some places, whereas extensive views across development along the south coast can be had in others. The open landscape creates large skies where weather conditions play a prominent part in experience. The deep, narrow, rounded coombes offer experiences of deep remoteness and tranquillity. Dark skies are a feature of this landscape and are highly sensitive to any lighting associated with new development.	High
Overall Sensitivity	This is an open, rural, downland, rolling landscape. It is ecologically rich and provides a largely undeveloped setting to significant historical features. Iconic views over the Low Wealds and the coast are highly sensitive to change in the SDNP, which could alter horizons. Overall, this combines to create a highly sensitive landscape.	High

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Landscape Evidence

The LLCA is focused around a coombe and the western extents of the scarp slope between Adur to Ouse, to the north-east of the Shoreham Cement Works site. The LLCA is broadly located within the Major Scarps (I2: Adur to Ouse Downs Scarp LCA) and is characterised by the dramatic steep chalk escarpment. This LCA stretches east, beyond the study area, to the River Ouse. Select representative key characteristics from the South Downs LCA (2020)²² include:

Key Characteristics:

- Geology and Soils "Well drained calcareous soils covering the precipitous slopes support unbroken tracts of chalk grassland, scrub and hanger woodland of outstanding ecological importance which provide texture and create dramatic shadows on the scarp; Abandoned chalk quarries, resulting from the exploitation of chalk in the past to produce lime, appear as white scars on the scarp and are now ecologically notable habitats;
- Topography and Water A dramatic steep north-facing chalk escarpment with a distinctive concave-convex slope profile...; Deeply indented by 'coombes'...; The elevated landform provides panoramic views both along the scarp and north to the surrounding lowlands...;
- Fieldscapes At the foot of the scarp where the slopes are less steep the land is ploughed for crops here colours contrast with the muted grey-green colours of the scarp face."

²² https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-I-Major-Scarps.pdf

Opportunities and constraints:

- Roads, Tracks and Paths Areas of open access land and Public Rights of Way provide good access, although in some places are overgrown and difficult to navigate. Recreational links between any new footpaths/ cycle tracks in the site and this network should be explored.
- Woodlands and Trees Conserve species rich woodland and scrub, as well as important lowland calcareous grassland found along the extents of the scarp face. Opportunities should be sought to extend/ promote wildlife links with habitats at the site.
- Perceptual qualities, Views and Visual Amenity A naturalistic and tranquil landscape, which is highly sensitive to mixed used development. The scarp is exposed and visible in long distance views from the north.

Criteria	Commentary	Sensitivity
Physical and Natural Character and Function	The scarp and coombes landform is complex and sensitive to change.	High
Landscape elements:		
 Geology and Soils 		
Topography and Water		
Cultural and Historical Associations	Across the wider scarp slope sunken terraced tracks and rights of way that zig zag across the open scarp are remnants of historic routes used for sheep herding. Abandoned chalk quarries are remnants of past industrial use.	Moderate
Landscape elements:	The wider area includes large tracts of unimproved chalk grassland, species-rich deciduous woodland and woody scrub, which is sensitive to change.	
 Settlements and Buildings 		
 Roads, Tracks and Paths 		
 Woodlands and Trees 		
Fieldscape		
Views and Visual Amenity	The scarp slope offers panoramic views over the surrounding lowlands to the north. Edburton Hill, to the east of the LLCA, is a promoted viewpoint. The viewpoint is sensitive to any development that could alter horizons/ sensitive skylines.	Moderate-high

Criteria	Commentary	Sensitivity
Perceptual Qualities	The scarp is perceived as naturalistic and tranquil. This is particularly apparent in some areas where enclosure by woodland and topography reduce intervisibility with the developed lowlands to the north. However, there are some pockets of high recreational activity along the wider scarp slope. The north-facing orientation of the scarp means a shaded and cool microclimate can be experienced at the wooded foot of the slope.	Moderate-high
Overall Sensitivity	This LLCA forms part of a dramatic steep north-facing scarp slope, with large tracts of ecologically sensitive calcareous grassland. It offers iconic views from the scarp slope, and the scarp slope itself provides an important setting in views south from the Low Wealds. This affords the LLCA a moderate-high sensitivity.	Moderate-high

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LLCA 11 – Adur Scarp Footslopes





Landscape Evidence

The LLCA is located at the eastern extents of the scarp footslopes between Arun to Adur, to the north-west of the Shoreham Cement Works site. The LLCA is broadly located within the Scarp Footslopes (J3: Arun to Adur Scarp Footslopes LCA) and is characterised by an undulating topography topped with a mosaic of farmland, habitat and farmsteads. This LCA stretches west, beyond the study area, to the River Arun. Select representative key characteristics from the South Downs LCA (2020)²³ include:

Key Characteristics:

- Geology and Soils "Complex geology comprising bands of chalk, mudstones and sandstones giving rise to a locally undulating lowland landscape...; Sandstone outcrops give rise to locally sandy soils which support areas of acid grassland, bracken, gorse, woody scrub, and oak-birch woodland;
- Topography and Water Streams, arising from springs at the foot of the Chalk/Upper Greensand flow northwards in narrow, hidden stream valleys, some enshrouded in woodland. Field ponds, mill ponds and designed ponds are common features of the clay; The Scarp Footslopes are visually dominated by the steep chalk scarp to the south, which forms a backdrop to views. Impressive panoramic views from the adjacent scarp and downs reveal a pleasingly balanced woodland and farmland mosaic;
- Roads, Tracks and Paths A network of public rights of way provides opportunities for countryside access...;
- Woodlands and Trees Hedgerows with mature hedgerow oaks link closely with the woodland, forming an interlocking network that is of high biodiversity value as well as creating a sense of seclusion and enclosure;
- Fieldscapes Large, fertile straight-sided arable fields on the Lower Chalk geology at the foot of the scarp, enclosed in the 20th century from open fields systems and earlier piecemeal enclosures; Small irregular fields of pasture on the less productive clay soils, which originated as woodland assarts, represent a largely intact late medieval landscape."

²³ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-J-Scarp-Footslopes.pdf

Opportunities and constraints:

- Roads, Tracks and Paths A network of Public Rights of Way provide opportunities for countryside access. Recreational links between any new footpaths/ cycle tracks in the site and this network should be explored, particularly in relation to the Monarch's Way promoted route.
- Woodlands and Trees Seek opportunities to extend/ promote wildlife links with habitats including hedgerows, deciduous woodland and other features of high biodiversity value across the LLCA with habitats at the site.
- Perceptual qualities, Views and Visual Amenity This is a rural landscape with pockets of higher remoteness and seclusion, and which is highly sensitive to mixed used development.

Criteria	Commentary	Sensitivity
Physical and Natural Character and Function	Complex geology that influences a locally undulating lowland landscape.	Moderate
Landscape elements:		
Geology and Soils		
Topography and Water		
Cultural and Historical Associations	Parts of the area display an intact medieval and early post-medieval landscape, which contributes to cultural and historical associations and is sensitive to change.	Moderate-high
Settlements and Buildings	Hedgerows link closely with small areas of woodland, forming an interlocking nature network that is of high biodiversity value and which frames arable fields and farmsteads. This reflects the importance of the	
Roads, Tracks and Paths	South Downs as a functioning and provisioning landscape.	
Woodlands and Trees		
Fieldscape		
Views and Visual Amenity	Views towards the major landmark of Bramber Castle are sensitive to change. The foot slopes are highly visible from the adjacent scarps.	Moderate-high
Perceptual Qualities	This is a rural landscape with pockets of remoteness and seclusion. However, larger urban settlements, roads (including the A283) and other forms of development to the north of this LLCA associated with Steyning (which falls outside of the National Park) somewhat erode the sense of tranquillity.	Moderate
Overall Sensitivity	This landscape provides a woodland and farmland mosaic, with steep chalks scarps to the south forming a dominating backdrop. Parts of the area display an intact medieval and early post-medieval landscape and there are pockets of high tranquillity. However, the proximity to larger urban areas influences character and somewhat reduces sensitivity. This affords the LLCA a moderate sensitivity.	Moderate

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LLCA 12 – Western Adur Open Downs





Landscape Evidence

The LLCA is located on the open downlands to the west of the River Adur, and west of the Shoreham Cement Works site. The LLCA is broadly located within the Open Downland (A2: Arun to Adur Open Downs LCA) and is characterised by open rolling elevated downland that affords long distance and panoramic views. This LCA stretches west, beyond the study area, to the River Arun. Select representative key characteristics from the South Downs LCA (2020)²⁴ include:

Key Characteristics:

- Topography and Water "Vast open rolling upland chalk landscape of blunt, whale-backed downs...; Furrowed by extensive branching dry valley systems which produce deep, narrow, rounded coombes...; Large open skies ensure that weather conditions are a dominant influence creating a dynamic landscape, with considerable seasonal variation; A strong sense of remoteness and tranquillity with pockets of deep remoteness associated with hidden dry valleys and higher reaches of the dip slope; Extensive views from the north out across the scarp footslopes and Low Weald beyond the National Park, and over the coastal plain to the south;
- Roads, Tracks and Paths Good public access with a network of public rights of way and open access land [and as noted in the Natural England national character assessment for the South Downs National Character Area "public rights of way following drove roads and ancient routes along the accessible downland tops"];
- Settlements and Buildings Iron Age hillforts at Cissbury Ring... form prominent features on the skyline; The typical settlement form is relatively late in origin and comprises isolated farmsteads of 18th -19th century origin...; Building materials are typically flint, red brick and clay tiles, with more modern materials used in farm buildings;
- Woodlands and Trees Significant areas of unimproved chalk grassland, for example at Cissbury Ring... which support nationally scarce plant species; Occasional scrub and woodland on steeper slopes and beech clumps on hill tops contribute to biodiversity and provides visual texture in the landscape;
- Fieldscapes Dominated by large scale irregular fields of arable and pasture (of 19th and 20th century date) bounded by visually permeable post and wire fencing or sparse thorn hedgerows creating a very open landscape..."

²⁴ https://www.southdowns.gov.uk/wp-content/uploads/2020/10/South-Downs-Appendix-A-Open-Downland.pdf

Opportunities and constraints:

- Roads, Tracks and Paths The network of Public Rights of Way, long distance trails, and open access land offer extensive recreational value, particularly in relation to the Monarch's Way and South Downs Way promoted routes. Recreational links between any new footpaths/ cycle tracks in the site and this network should be explored. A limited extent of public roads traverse this landscape, making routes such as Titch Hill relatively busy due to fast-moving local traffic attempting to cross the Downs.
- Settlements and Buildings Settlement in this area is limited to occasional farms, and the open rolling rural downland landscape is very sensitive to change. Any development at the site should be sensitive to potential changes in views, including any development that could be seen on the horizon/ alter sensitive skylines.
- Woodlands and Trees occasional scrub and woodland on steeper slopes, and beech clumps on hill tops, add to the overall diversity of chalk grassland habitats. Wildlife links between the site and these habitats should be explored.
- Perceptual qualities, Views and Visual Amenity an open, rural landscape with pockets of extreme remoteness. Highly sensitive to mixed used development.

Criteria	Commentary	Sensitivity
Physical and Natural Character and Function	This is an open and rolling landscape, with areas of steep slopes and dry valleys, with ecologically rich Priority Habitats which are highly sensitive	High
Landscape elements:	to change.	
Geology and Soils		
Topography and Water		
Cultural and Historical Associations	The Iron Age Hill forts (Cissbury Ring) and other historic features provide a significant sense of time-depth to the Downs. These, and the role that	High
Landscape elements:	the open downlands play in providing their setting, are highly sensitive to change. Iconic views from Cissbury Ring are particularly sensitive to	
 Settlements and Buildings 	change, including new development that could alter skylines in views to the east.	
 Roads, Tracks and Paths 	This landscape includes good quality semi-improved grassland, interspersed with pockets and belts of deciduous woodland all of which	
Woodlands and Trees	are highly sensitive to change. This landscape is dominated by large- scale field patterns that host both arable and pastoral practices, reflecting	
Fieldscape	the importance of the South Downs as a working landscape. Within the west of the LLCA, hosting prominent views into Shoreham Cement Works from the South Downs Way, Annington Hill is dominated by pig farming, resulting in an evidently man-made use of the landscape.	

Criteria	Commentary	Sensitivity
Views	The western Adur Open Downs offers the opportunity for direct views into the entirety of the Shoreham Cement Works site, particularly from local high points. Any development here should be sensitive to change in these views, particularly in change that could result in new development seen on the horizon. The Shoreham Cement Works chimney offers an iconic local landmark that can be viewed for miles around, including from distant hill forts such as Cissbury Ring. This area offers iconic and extensive views north across the scarp to the Low Weald and south over the dip- slopes towards the developed coast. These views are highly sensitive to change.	High
Perceptual Qualities	There is a strong sense of tranquillity and remoteness across the downs, with a limited sense of human intervention in most places. Some hilltops afford extensive views across development along the south coast, alongside pockets of obvious human practices, including pig farming, reducing tranquillity in places. The open landscape creates large skies where weather conditions play a prominent part in experience. The deep, narrow, rounded coombes offer experiences of deep remoteness and tranquillity. Dark skies are a feature of this landscape and are highly sensitive to any lighting associated with new development.	High
Overall Sensitivity	This is an open, rural, downland, rolling landscape. It is ecologically rich and provides a largely undeveloped setting to significant historical features. Iconic views over the Low Wealds and the developed coast are highly sensitive to change in the SDNP, which could alter horizons. Overall, this combines to create a highly sensitive landscape.	High