APPENDIX ES10.1

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Cooks Hole Quarry and Thornhaugh Landfill Site

Proposed Revised Restoration Landform

Landscape and Visual Impact Assessment (LVIA)

February 2024

DB Landscape Consultancy

Document Control

Version	Date	Author	Reviewed By	Change Description
Draft ver. 1	23/11/23	D Brittain (DBLC)	S. Serdetschniy (MJCA)	Document created & issued for review
Draft ver. 2	11/01/24	D Brittain (DBLC)	S. Serdetschniy (MJCA)	Document revised and reissued
Issue	05/02/2024	D Brittain (DBLC)	S. Serdetschniy (MJCA)	Final revisions made and document issued

Contact Details:

David Brittain
DB Landscape Consultancy
tel: 01344 624 709 mob: 07736 083 383
email: david@dblc.co.uk
Web: www.dblc.co.uk

Contents

1 INTRODUCTION

Appointment and Scope of Work

1.1 DBLC was appointed by Augean South Ltd (Augean) to undertake a Landscape and Visual Impact Assessment (LVIA) relating to proposals to revise the restoration schemes for Cooks Hole Quarry (Cooks Hole), which has been active since the 1950's and the adjacent Thornhaugh Landfill Site (Thornhaugh) which has been active since the 1990's. The proposed restoration scheme would provide an integrated, coherent landform to both sites and would replace the currently approved though separate restoration schemes for both operations.

1.2 The revised restoration landform and associated works to achieve it are referred to in the LVIA as the 'Proposed Development'. Cooks Hole and Thornhaugh are collectively referred to as the 'Sites'. The red line application boundary of the Sites extends over an area of approximately 83.8 hectares (ha) as indicated on Figure 1: Site Context, Landscape Character, Designations and Viewpoint Locations. The approximate location of the centre of the Site is at the following six figure grid reference, E: 505347, N:299674.

1.3 The report has been prepared by David Brittain CMLI MIQ who has experience in preparing LVIA's in relation to proposed quarry developments of this type.

Document Structure

1.4 The LVIA considers the landscape character of the Sites and wider surrounds together with the location of the Sites in terms of existing visibility from surrounding visual receptors including residential properties, Public Rights of Way (PRoW), places of work (if any) and roads.

1.5 The structure of this LVIA report is divided into the following sections:

- Introduction (Section 1);
- Landscape and Visual Context (Baseline), including existing Landscape Character Assessments (Section 2);
- Planning Context: Landscape Policies and Designations (Section 3);
- Project Description and Designed Mitigation Measures (Section 4);
- Assessment of Landscape and Visual Effects (Section 5);
- Assessment of Cumulative Landscape and Visual Effects (Section 6);
- Compliance of the Proposed Development with Planning Policies (Section 7);

- Summary (Section 8);
- Annexes A (Figures 1 – 21 and Photomontage Viewpoints A & B) and B (LVIA Methodology)

1.6 The Landscape and Visual Context (Baseline) section provides a description of the existing baseline characteristics that establish the character of the Sites and surrounding landscape, as well as the visibility of the Sites. The section includes consideration of existing landscape character studies that are relevant to the Sites and the locality.

1.7 The Planning Context section considers relevant landscape (and landscape related) designations and also national, county (minerals and waste) and local level planning policies.

1.8 The Project Description and Designed Mitigation Measures section outlines the nature of the Proposed Development and the key sources of potential landscape and visual effects. The section also considers measures that have been included within the design of the Proposed Development in order to minimise/reduce potential effects identified as the design and planning of the development has progressed.

1.9 The Assessment of Landscape and Visual Effects section analyses the Sensitivity of the landscape and visual receptors to the Proposed Development and considers the Magnitude of Effects that the Proposed Development would be likely to cause. An indicative Scale of Effects level is then established for the receptors, with explanation text added as necessary. A Scale of Effects level of '**Moderate – Major**' or '**Major**' is indicative of a Significant effect in the context of Environmental Impact Assessment.

1.10 The Assessment of Cumulative Landscape and Visual Effects section identifies other relevant developments of a similar nature and/or scale as the Proposed Development within the study area. The section goes on to assess whether the effects of the Proposed Development, in combination with the other development(s), would cause Significant additional adverse effects on landscape or visual receptors.

1.11 The Compliance of the Proposed Development with Planning Policies section lists the national and Development Plan policies relevant to the Proposed Development and/or the Sites and considers how the proposals accord with the requirements of the policies.

1.12 The Summary identifies any Significant landscape or visual effects, summarises other effects and briefly considers how the Proposed Development accords with LCA assessments and Development Plan policy.

1.13 Annex A includes Figure 1: Site Context, Landscape Character, Designations & Viewpoint Locations and Figures 2 to 21: Viewpoints 1 to 10 (single frame view and context panorama). Annex A also includes Photomontage Viewpoints A and B plus a written Technical Methodology.

1.14 Annex B sets out the LVIA Methodology which is based on principles and recommendations included within the Guidelines for Landscape and Visual Impact Assessment (Third Edition, GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013) and Technical Guidance Note 02/21: Assessing Landscape Value Outside National Designations (Landscape Institute, 2021).

1.15 The LVIA should be read in conjunction with the accompanying LVIA Figures and the Development Description in Chapters 4 and 5 of the ES.

2 LANDSCAPE AND VISUAL CONTEXT (BASELINE)

Introduction

2.1 The landscape and visual context (baseline) represents a study of the existing landscape receptors (i.e. landscape features and landscape character) relevant to the Sites and surrounding areas and also visual amenity, against which changes likely to be caused by the Proposed Development can be assessed.

2.2 Figure 1: Site Context, Landscape Character, Designations and Viewpoint Locations illustrates the location of some of the features within the landscape setting that are described below, and generally follow the standard OS map nomenclature. The combination of some or all of these landscape features contributes to the character and appearance of the Sites and surrounds. The study area extends to a radius of up to approximately 1.5 kilometres (km) from the centre of the Sites, as indicated on Figure 1.

2.3 In accordance with the latest Visualisation Guidelines (Landscape Institute, 2019)), Figures 2 to 21 include ten viewpoints with the view from each set out on two A3 sheets: a single frame image at a size of 390mm x 260mm and a panoramic image with a horizontal field of view (HFoV) of c. 90° to show the context of the view.

Landscape Context

Description of the Sites and Immediate Surrounds

2.4 The application boundary is illustrated on Figure 1 by the solid red line, with the solid green line bounding Thornhaugh and the solid magenta line bounding Cooks Hole. The Sites are located approximately 1.0km southwest of the village of Thornhaugh and 10km west of Peterborough. Cooks Hole is to the southwest of the A47 Leicester Road and Thornhaugh is adjacent to and south of the A47.

2.5 Thornhaugh comprises an active landfill site which is being filled in phases and progressively restored. The northern and north eastern phases of Thornhaugh have already been landfilled and are restored albeit that the planting is not yet well established. Phase 7C has recently been constructed, construction of Phase 2 west will commence imminently and Phases 4B south, 5 and 7A are filled and awaiting capping. As well as the operational phases, the site infrastructure consists of a surfaced access road, site reception and welfare facilities, weighbridge and wheel

wash, landfill gas flare, hi pod storage area and car parking areas, all of which are located in a generally central position within Thornhaugh.

2.6 Cooks Hole is located to the immediate south of Thornhaugh and comprises an active mineral extraction site, featuring Ironstone, sandy limestones, silty sands and clays which have been extracted from the site since the 1950s. The mineral extraction operations are now complete at Cooks Hole and no further mineral will be extracted. There are a number of stockpiles of mineral materials at Cooks Hole and there is mobile plant which is currently processing the material from the stockpiles.

2.7 The Sites are bounded to the north and east by a well-established hedgerow beyond which is the A47 and to the west by a large area of Ancient broadleaved woodland, Bedford Purlieus, which is classed as Ancient Semi Natural Woodland (ASNW) with small areas of Ancient Replanted Woodland (ARW) (shown on Figure 1) and is also designated as a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR). There are also stretches of hedgerow along the western boundary dividing the Sites from Old Oundle Road, a track which extends along the eastern edge of the woodland, from Kings Cliffe Road to the A47.

2.8 To the south, land is characterised by naturally regenerated scrub and pioneer vegetation across previously worked land (Thornhaugh II Quarry) with Kings Cliffe Road beyond, extending westwards, forming the southern boundary of Bedford Purlieus woodland, to the southwest of the Sites.

Description of the Wider Surrounding Area

Landform and Topography

2.9 The elevation of land surrounding the Sites is generally fairly consistent, at approximately 40 - 50m AOD, with localised undulations which are associated with the line of watercourses where land dips, as evident to the north beyond Wittering Grange and West Wood, where a small river valley falls away to elevations of between approximately 25m – 35m AOD. Land further to the east, between the settlements of Thornhaugh and Wansford, is characterised by another localised valley feature associated with a watercourse, at levels of between 15m – 20m AOD.

2.10 An area of slightly higher land is evident to the south, associated with Ring Haw, at 60m AOD before falling again further south toward the route of an old railway line, just to the north of

Nassington. Levels within Bedford Purlieus to the west are very gently undulating, rising slowly westwards up to 75m AOD in the north western part of the woodland. These levels continue across a wide expanse of agricultural land to the west of Bedford Purlieus, again with localised small valley features evident within the landscape.

Land Use and Vegetation Cover

2.11 The Sites are situated within a rural, agricultural landscape dominated by a patchwork of some small/irregular shaped, but mainly medium to large sized, fields bounded by drainage ditches and often well managed hedgerows with a conspicuous lack of trees. The fields are interspersed with small copses and tree belts at their corners or along boundaries and there are few large-scale woodlands evident within the wider landscape. Those that are present represent significant landscape features, such as the aforementioned Bedford Purlieus, Old Sulehay Forest to the southeast of the Sites, West Wood, Lound Wood and West Abbot's Wood to the northeast and also Easton Hornstocks and Collyweston Great Wood and The Assarts/Westhay Wood further to the west.

2.12 It is noted that well established roadside hedgerows or part hedgerows are a frequent feature of the transport routes in the vicinity of the Sites, helping to filter and screen views across the adjacent agricultural fields. In other locations, the absence of hedgerows allows middle and long distance views across the very gently undulating landscape.

Settlement and Infrastructure

2.13 There are a small number of residential properties in relatively close proximity to the Sites including the following:

- Toll Cottage and nearby dog kennel business, approximately 40m to the northwest of the north western corner of the Thornhaugh boundary;
- Home Farm House, approximately 70m to the north of the Thornhaugh boundary, on the northern side of the A47, set back from it;
- Thornleigh House, to the west of Footpath Th No 2 Section 4, heading north from the A47, approximately 45m from the Site boundary;
- Oaks Wood Cottage, approximately 290m to the north of the Thornhaugh boundary, close to where Footpath Th No 10 Section 1 exits onto Russell Hill;
- Nightingale Farm, approximately 335m to the south of Cooks Hole;

- Sibberton Lodge, approximately 495m to the east of Cooks Hole; and
- Thornhaugh Hall and associated buildings, approximately 685m to the northeast of the Thornhaugh boundary.

2.14 The nearest villages to the Sites are Thornhaugh, approximately 1km to the north east of the sites beyond the A47, Wittering approximately 2km to the north of the Sites and Yarwell over 2km to the south east of the Sites.

PRoW

2.15 Refer to Figure 1 (Annex A) for the location and routes of several footpaths passing through and surrounding the Sites. Two footpath routes have been diverted or temporarily stopped up as they extend through the operational areas within the Sites, as follows:

- Footpath Th No 4, Section 1 which enters Cooks Hole Quarry from midway along the southern boundary from Footpath Th No 2 Section 1 before turning north northeast and heading towards farm outbuildings, before turning east northeast across Cooks Hole to meet the A47. The diversion route follows the southern boundary of Cooks Hole ; and
- Footpath Th No 2, Section 2 which enters Cooks Hole from midway along the southern boundary from Thornhaugh FP No 2 Section 1 and heads north before turning to the northeast, to cross Thornhaugh and exiting onto the A47.

2.16 Footpaths TH 3 Section 3 and TH 3 Section 4 pass through the centre of the Sites in a southwest to northeast direction. The route enters the Sites from Bedford Purlieus woodland, heads along the hedgerow which marks the boundary between the two operations, and exits the Sites onto the A47, broadly opposite Russell Hill.

Existing Landscape Character Assessments

Introduction

2.17 The combined elements of a landscape set one area apart from those adjacent to it and make its character distinctive to the people who both live in or visit the area. Recognition of this character variation requires an understanding of these influences that give different areas a unique 'sense of place'. This section reviews existing landscape character assessments that relate to the Sites and the surrounding land.

2.18 Landscape Character Assessment is *"The process of identifying and describing variation in the character of the landscape and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive".* (GLVIA3, Glossary, page 157).

2.19 Figure 1 illustrates the location of the Sites and the surrounding context together with relevant landscape character areas, designated landscapes, historical/cultural features and viewpoint locations. See below for further explanation.

National Level Landscape Character Assessment

2.20 At the national level landscape character assessment has been defined by Natural England's own assessment work which has divided areas of England into areas with similar landscape character called National Character Areas (NCAs). As stated on Figure 1 the Sites and the wider study area are all located within NCA 92: Rockingham Forest. This NCA does not describe the Sites and their settings in detail, however it provides the regional scale landscape context.

2.21 Relevant key characteristics of NCA 92: Rockingham Forest include:

- *"The area is well wooded with large commercial conifer and broadleaved plantations, and ancient semi-natural woodlands. Large woodlands – such as Wakerley Great Wood, Geddington Chase and Fermyn Woods – form a prominent feature on the skyline.*
- *Ancient woodlands of national importance for nature conservation contain a diverse range of species; many are designated as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSI), such as Bedford Purlieus…;*
- *A patchwork of large to medium-sized fields, of mixed arable and some pastoral land use, displays the rectilinear pattern of 18th and 19th-century enclosures set within a more sinuous pattern of older enclosures, winding lanes and watercourses.*
- *Fields are commonly bounded by well-managed hedgerows with characteristic mature trees or drystone walls which become more common in the Soke of Peterborough…*
- *Limestone heaths and fragments of acid bogs are found in the Soke of Peterborough where the Jurassic limestones and river gravels are exposed…*
- *The settlement pattern is small nucleated villages with a few isolated farmsteads and houses, the former often in sheltered streamside locations…*

- *Retains a largely rural and tranquil character, particularly in the heart of the Rockingham Forest. There is a sharp transition between the countryside and the main urban areas of Peterborough, Kettering and Corby, which remain the focus for future development growth".*

2.22 The Landscape Change section states the following of relevance in relation to Minerals:

"*Abandoned workings have been used as landfill sites such as at Kings Cliffe. Abandoned quarries are key features in the landscape today*".

Local Level Landscape Character Assessment – Landscape Character Assessment for Peterborough City Council (May 2007)

2.23 As shown on Figure 1, the Sites are located within Landscape Character Area (LCA) 2: Nassaburgh Limestone Plateau which includes the following Key Characteristics:

- *"Gently undulating limestone landscape;*
- *Large blocks of woodland, many ancient or semi-natural providing structure;*
- *Large arable fields with low hedgerows or dry stone walls;*
- *Large areas of parkland intact and well managed;*
- *Largely unspoilt nucleated stone villages comprising vernacular buildings constructed of local stone with local slate roofs;*
- *Remnant pre-enclosure field systems, with ridge and furrow near villages and isolated settlements;*
- *Remnant unimproved calcareous grassland, limestone heath and fragments of acidic bog;*
- *Wide verges to minor roads;*
- *Many areas of high nature conservation interest;*
- *Several active and disused and limestone quarries; and*
- *Generally a quiet rural ambiance"*

2.24 Within LCA2: Nassaburgh Limestone Plateau, the Sites extend across two Landscape Character Sub-Areas:

- Sub Area LCA 2b: Burghley and Walcot Slopes

- Sub Area LCA 2c: Wittering Limestone Plateau

Sub Area 2b: Burghley and Walcot Slopes

2.25 The south eastern and central part of Cooks Hole falls within this Sub-Area LCA.

- Strength of Character: Strong
- Condition: Moderate
- Landscape Strategy (i.e. Strength of Character combined with Condition): Conserve and Restore
- Sensitivity: "*The combination of good character and moderate condition indicates the quality of the landscape is medium/high. The relatively steeper slopes also indicate that the sub area is visually highly sensitive and any changes are likely to be highly prominent for the valley slopes and more widely for the east facing slopes".*

Sub-Area LCA 2c: Wittering Limestone Plateau

2.26 The remainder of Cooks Hole and all of Thornhaugh falls within this Sub-Area LCA.

- Strength of Character: Moderate
- Condition: Moderate
- Landscape Strategy (i.e. Strength of Character combined with Condition: Improve and Conserve
- Sensitivity: "*Although the landscape has a reasonable structure the imposition of built development through the A1 and RAF Wittering adversely affects the quality and overall sensitivity of the area. Adverse development would be relatively less harmful in certain parts of the sub area than in the sub areas to the east. However there is need to improve the structure of the area largely through new woodland planting to provide stronger strategic linkages between the east and Rockingham Forest to the west".*

Summary of Landscape Receptors, Character and Value

2.27 This section of the LVIA summarises the existing landscape receptors that have been identified by the baseline study and that would be affected by the Proposed Development. Landscape receptors can be divided into two separate types: landscape features (or fabric) and landscape character. These have been considered below in further detail.

Landscape Features/Fabric within the Sites

2.28 The Proposed Development is for an alteration to the approved restoration landform within Thornhaugh, so all landscape features within the footprint of the landform will be removed in accordance with the current permission, in those areas still being worked/infilled.

2.29 However, there are certain areas that have previously been unworked and/or restored within Thornhaugh that would remain as existing, such as the County Wildlife Site at the south western corner and phases 3, 6A and 6B along the western part of the northern boundary. The landform within these retained areas would merge with the revised landform.

2.30 The majority of land within Cooks Hole, including areas which have been previously restored (but not including the tree and scrub belt along the watercourse – see point 2.31 below) would be overfilled, meaning all landscape features within these areas would be removed. This includes the central hedgerow adjacent to Footpaths TH 3 Section 3 and Section 4, which divides the two Sites.

2.31 There is a tree and scrub belt ranging from between 20m – 30m in width extending through the central part of Cooks Hole, in a broadly west to east orientation. This belt follows the route of a small watercourse and will be retained as part of the restored landform. In addition, there will be an operational standoff from the edge of the tree and scrub belt to ensure it will not be disturbed as part of the site operations.

2.32 The proposed restoration landform to the north and south of the belt will tie into the existing levels as necessary to protect the existing vegetation. Set within the central part of this tree and scrub belt is a Grade II Listed farmhouse and associated farm buildings which are currently not in use. There is potential to renovate both buildings and landscape the external space, to integrate the structures back into the surrounding landscape, once fully restored.

Landscape Character of the Sites

2.33 The Sites are both characterised by their generally industrial nature and appearance across many areas, which include infrastructure such as hardstanding access roads, circulation areas and car parks, site offices and associated buildings, water lagoons, stockpiles of material awaiting placement, engineered landfill cells partly filled or awaiting infilling works, worked out areas awaiting restoration and soil/overburden storage mounds.

2.34 As mentioned above, land along the western part of the northern boundary of Thornhaugh has previously been raised to approved restoration levels and has been grassed and partly planted. . In addition, there is a County Wildlife Site located at the south western corner of Thornhaugh that has been fenced off and protected from disturbance for several years. The character of these areas is less industrial than the disturbed, operational areas mentioned above but they are still adjacent to active landfilling and quarrying sites, so their character is partially influenced by the existing works.

2.35 Areas within the western part of Cooks Hole are characterised by grassland fields that have previously been worked and restored while well-established hedgerows divide Cooks Hole from Thornhaugh and also divide some parcels of land within the quarry area. Again, as mentioned above, a 20m – 30m wide tree and scrub belt extends along a small watercourse from the western boundary of Cooks Hole to the eastern boundary and incorporates a Grade II listed farmhouse and associated farm buildings. The character of these features is subtly different from the rest of the Sites as they are the most intact features remaining from how the landscape was prior to quarrying and landfilling activity taking place.

Landscape Value of the Sites

2.36 Landscape value is defined as *"The relative value or importance attached to different landscapes by society on account of their landscape qualities"* (Glossary, Technical Guidance Note (TGN) 02-21: Assessing Landscape Value Outside National Designations). This TGN includes Table 1: 'Range of Factors that can be Considered when Identifying Landscape Value' which expands the information contained within Box 5.1 on page 84 of GLVIA3. These factors are key sources of information relating to assessing the value of a landscape outside a designated area, which is the case with these Sites.

2.37 Landscape value is one component of assessing the Sensitivity of a landscape receptor, the other one being susceptibility to change, which is the *"ability of the landscape to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies"* (GLVIA page 89). Therefore, evaluation of susceptibility of the landscape to change is recorded as part of the assessment of effects, not as part of the baseline, as the proposed development is fundamental to the rating.

2.38 A 'valued landscape' is defined in TGN 02/21 as "*…an area identified as having sufficient landscape qualities to elevate it above other more everyday landscapes".* There is no definitive 'threshold' above which a landscape is considered to be a 'valued landscape': there should be a weight of evidence, based on consideration of the factors in Table 1, TGN 02/21 that supports the recognition of a landscape as valued above more everyday landscapes.

2.39 The value of the Sites landscape has been assessed as follows using Table 1, TGN 02/21 as a guide:

Natural Heritage

- The Sites contain no natural features of any particularly special or unique value, although mature trees within the tree belt associated with the Grade II Listed Farmhouse are notable landscape features and the County Wildlife Site on the western boundary of Thornhaugh is a valuable feature which includes several individual ponds with newts and is important for species groups such as invertebrates.

Cultural Heritage

The Sites contain a Grade II Listed farmhouse and associated farm buildings roughly at the centre of Cooks Hole , located within a tree and shrub belt. The buildings are currently uninhabited and in poor repair. The buildings will be kept watertight and secure for the duration of the operations.

Landscape Condition

- The operational areas that will be covered by the restoration landform are generally in a poor or disturbed physical condition due to the landfilling and/or quarrying works taking place and the associated infrastructure. Previously restored areas, the County Wildlife Site and the existing hedgerows/tree belts are in better landscape condition and generally of good quality.

Associations

- No known associations

Distinctiveness

- Apart from the Grade II Listed farmhouse, the Sites have no unique, rare or notably special landscape elements and are not located within a particularly rare LCA or Sub-Area LCA. However, Sub-Area LCA 2b: Burghley and Walcot Slopes (partially extending across land within Cooks Hole) rate the landscape as having 'Strong' strength of

character, being of 'Moderate' condition and that the Landscape Strategy is 'Conserve and Restore'.

Recreational

- Footpaths Thornhaugh 3 Section 3 and Thornhaugh 3 Section 4 pass through the Sites along the southern side of the boundary hedgerow that separates Thornhaugh from Cooks Hole.

Perceptual (Scenic)

- There are no views from within the Sites or towards them which would be described as particularly scenic or noteworthy although Bedford Purlieus woodland forms the backdrop to many views from the east, when seen in the far distance across the Sites.

Perceptual (Wildness and Tranquility)

- Tranquillity is low for operational areas of the Sites as plant and vehicle noise, movement and activity all combine to disturb the setting. Due to the overall size of the Sites, many areas are not currently in operational use and are more tranquil, although there are always views of disturbed land, stockpile and storage mounds and mobile plant from locations along the Footpath through the Sites, which again reduces the inherent wildness and tranquility of the local area.

Functional

- The tree and scrub belt through the centre of Cooks Hole functions as a green link between Bedford Purlieus and the well-established hedgerow alongside the A47. The associated spring and small watercourse is part of the wider drainage network feeding into larger streams.

2.40 Taking the above factors into consideration, there are certain elements and features that are of higher value within the Sites than others, namely the following:

- Footpaths Th No 3 Section 3 and Section 4 through the centre of the Sites;
- Sections of stone wall in poor repair, adjacent to the footpaths;
- The tree and scrub belt through Cooks Hole;
- The associated spring and small watercourse;
- The County Wildlife Site in Thornhaugh;
- Restored parts of Thornhaugh;
- Previously worked and restored fields within Cooks Hole; and

- The Grade II Listed farmhouse.

2.41 These features are considered more 'everyday' rather than each having multiple qualities that elevate them to being classed as 'highly valued', although they are valued on a local level. The Footpath, adjacent hedgerow and sections of stone wall would all be removed due to the Proposed Development, along with previously restored areas within Cooks Hole. The Footpath and hedgerow would be reinstated at a higher level as part of the site restoration works, as indicated on the Concept Restoration Plan.

2.42 The value of the rest of the Site landscape is considered negligible as it is either operationally active and therefore disturbed or it will be disturbed as part of approved future quarrying and/or infilling works.

Visual Context

Identification of Visual Receptor Groups

2.43 The range of visual receptors usually considered in LVIA reports include settlements, groups of or individual residents, people visiting the area for amenity/recreation purposes, road users (including pedestrians, cyclists, horse riders and people in vehicles), and people at work. These categories of visual receptor are summarised below:

- ***Settlements/Residents:*** It is generally held and embodied in recognised standard visual impact assessment methodology that residents will have a high level of susceptibility to changes in their landscape and visual environment. The most important views are likely to be those available from their own homes as they will be consistently present;
- ***Amenity/Recreation:*** This visual receptor group embraces a broad category with often different objectives. It includes those people who are primarily concerned with the enjoyment of the outdoor environment for recreational pursuits and includes recreational walkers, cyclists and horse riders plus people sightseeing by car or generally enjoying the outdoors. These receptors have a higher susceptibility to changes in the view;
- ***Road Users:*** This category of visual receptor overlaps to a degree with the other three categories in that it embraces residents, amenity/recreational users (including those who come to visit the area or pass through it) and people travelling for work.

Susceptibility ranges from a medium level to a lower level depending on the type of road users and their purpose in driving through the landscape; and

- ***People at Work:*** This category includes those people who work within the local surroundings, including the outdoor environment and would therefore generally have less susceptibility to visual disruption.

General Visibility of the Site

2.44 The visibility of the Sites from the surrounding area is primarily influenced by the vegetated boundaries, including the well-established hedgerow alongside the A47 which extends all the way along the north eastern boundary of Cooks Hole and Thornhaugh and along the western boundary of Cooks Hole and Thornhaugh adjacent to Old Oundle Road, separating the Sites from Bedford Purlieus woodland, further to the west. To the south, the boundary vegetation on Cooks Hole and an area of previously disturbed land which has scrubbed over with naturally regenerated vegetation also helps to screen views toward the Sites together with roadside vegetation along Kings Cliffe Road.

2.45 In addition, the relatively level topography across the surrounding landscape, allowing for some localised undulations and valley features, means that intervening layers of vegetation and other features influence the quality and distance of views available from the surrounding area. Some features within the Sites are higher, however, including the previously restored area within Thornhaugh and various stockpiles and mounds which extend above the boundary and internal vegetation, so are partially visible from surrounding viewpoints.

2.46 In addition, the relatively large bellmouth entrance to the Sites from the A47 allows glimpsed views into the Site from people travelling along the A47. Furthermore, the Footpath through the centre of the Sites allows good, relatively close up views of parts of the Sites for walkers using the routes.

Representative Viewpoint Photographs and Descriptions

2.47 To help define the existing visual baseline, it is accepted practice to select a number of representative viewpoints, which are determined by professional judgement, within the likely visual envelope of the Proposed Development. Figure 1 includes the locations of ten viewpoints representing views for residents, amenity/recreational users (including PRoW users) and road

users. The viewpoints are shown as single image views and panoramic context views on Figures 1 to 21 including explanatory text and labels where necessary. In addition, Figure 1 shows the location of two Photomontage Viewpoints A and B, in the vicinity of Cooks Hole Farmhouse.

2.48 The ten viewpoints and the two photomontage viewpoints were selected in consultation with Peterborough City Council, following liaison and discussion via email. The viewpoint photographs were taken in November 2023 with the photomontage photographs taken in September 2023.

2.49 It is noted that no viewpoints from the collection of properties in close proximity to Home Farm House and Thornleigh House to the north of the Sites have been included. This is because these properties are on private land which was not able to be accessed and also due to a combination of walls and mature vegetation marking the southern boundaries of these properties.

3 PLANNING CONTEXT

Landscape Designations

National Level Landscape Designations

3.1 The Sites are not located within a National Park or Area of Outstanding Natural Beauty (AONB).

National Level Nature Conservation Designations

3.2 As shown on Figure 1, a small number of woodlands within the 2.0km radius study area are classified as ASNW or ARW, including the following:

- Bedford Purlieus, also designated a Site of Special Scientific Interest and National Nature Reserve (NNR);
- West Wood;
- Abbots/Lound Woods; and
- Old Sulehay Forest, also designated a Site of Special Scientific Interest

Historical and Cultural Related Designations with Relevance to Landscape

3.3 A Grade II Listed farmhouse is located approximately in the centre of the Cooks Hole site, together with old outbuildings. Other Listed Buildings within a c. 1.2km radius of the centre of the Sites include the following:

- Home Farm House, Grade II, c. 80m north of Sites boundary;
- Stable Range and Granary, c. 20m north of Home Farmhouse, 100m north of Sites boundary;
- Barn and Dairy Ranges, c. 20m north of Home Farmhouse, c. 10m north of Sites boundary;
- Stables to west of Sibberton Lodge, Grade II, c. 495m east of the Sites boundary;
- Barn to south of Sibberton Lodge, Grade II, c. 520m east of the Sites boundary;
- Sibberton Lodge, Grade II*, c. 495m east of Sites boundary
- Sibberton Lodge Cottage, Grade II, c. 535m east of Sites boundary;
- Barn to southeast of Sibberton Lodge, Grade II, c. 540m east of Sites boundary.

3.4 The nearest Grade I Listed Building is the Church of St Andrew within Thornhaugh, approximately 1.4km to the northeast of the Sites boundary.

3.5 There are no Scheduled Monuments or Registered Parks and Gardens within the study area (c 1.5 km radius).

National & Local Level Landscape Policy and Guidance

Revised National Planning Policy Framework (NPPF, Updated December 2023)

3.6 On a national scale the revised NPPF is the document of most relevance to planning applications for most developments. In relation to potential landscape and visual effects, relevant policies included within the revised NPPF are as follows:

- Section 12: Achieving Well-designed Places – paragraph 135;
- Section 15: Conserving and Enhancing the Natural Environment – paragraph 180; and
- Section 17: Facilitating the Sustainable Use of Minerals – paragraph 217

Cambridgeshire and Peterborough Minerals and Waste Local Plan 2036 (adopted July 2021)

3.7 Relevant policies relating to the Sites and potential landscape and visual effects include the following:

- Policy 17: Design
- Policy 19: Restoration and Aftercare
- Policy 21: The Historic Environment
- Policy 23: Traffic, Highways and Rights of Way

Peterborough Local Plan 2016 to 2036 (adopted July 2019)

3.8 This document contains *"the most appropriate planning policies for the growth and regeneration of Peterborough and the surrounding villages up to 2036".* Relevant policies include the following:

- Policy LP16: Design and the Public Realm
- Policy LP19: The Historic Environment
- Policy LP27: Landscape Character
- Policy LP29: Trees and Woodland

Peterborough Trees and Woodland Strategy 2018 – 2028 (as amended December 2022)

3.9 This Supplementary Planning Document (SPD) is a written Strategy which *"sets out how the benefits provided by trees and woodland will be maintained and enhanced"*

3.10 While mainly aimed at other types of proposed development, including residential housing schemes, new parks and public green space provision, the design of the urban environment etc. the SPD does include various design notes and guidelines which are broadly applicable for any proposed development scheme, including a woodland species mix.

3.11 Where applicable, the principles and guidelines contained within the SPD would be applied throughout the Proposed Development.

4 PROJECT DESCRIPTION AND DESIGNED MITIGATION MEASURES

Summary of Proposed Development

4.1 A full description of the Proposed Development including illustrated plans and sections are contained in the Environmental Statement. In summary, the Proposed Development would involve the continuation of landfilling in Thornhaugh with no new landfill cells proposed. Mineral extraction in order to facilitate new cell construction, as is currently permitted, would continue, as would stockpiling of imported material for landfill engineering works.

4.2 The restoration landform across the Sites would alter to form one integrated, coherent landform although the currently approved highest point, at 71.5m AOD, would not change. In the region of 1.2 million m^3 of clean, naturally occurring material will be imported to form the revised restoration landform in Cooks Hole. The material would come from the Augean East Northants Resource Management Facility (ENRMF) site in Northamptonshire. The integrated landform at Cooks Hole would tie in with the Thornhaugh landform.

4.3 The continuation of various other operations at the Sites would also form part of the Proposed Development, as would retention of the site management infrastructure for the continuation of monitoring and the management of landfill gas and leachate.

4.4 Site reception facilities including welfare facilities which comprise portable cabins will be relocated as necessary to accommodate the phased activities. Operations at the Sites would continue until February 2042, as is the case at present for Cooks Hole. Operations at Thornhaugh are currently consented to cease in 2035.

4.5 The Grade II Listed Cooks Hole Farmhouse and the associated outbuildings would be retained, with their future use the subject of a separate application. The restoration landform would be restored to nature conservation interest with the creation of habitats including grassland (exact type to be discussed at the time depending on nature of restoration materials), native tree and scrub planting areas, native hedgerows, new ponds and some areas of bare ground and naturally colonising areas.

4.6 It is envisaged that stopped up and diverted Footpaths Thornhaugh 2 Section 2 and Thornhaugh 4 Section 1 which previously extended through the Sites (as shown on plans in the Environmental Statement) would be reinstated along their approximate former routes. Footpaths Thornhaugh No 3 Section 3 and Thornhaugh No 3 Section 4 would be reinstated at a

higher level, following restoration. Further permissive rights of way will be created during the restoration of the Sites.

4.7 The phasing of the Proposed Development is shown on Drawing Ref. AU/CH/11-23/24064RevA. Works would commence at the south western corner of Cooks Hole, moving to the south eastern corner and then to the central, southern part of Cooks Hole, to the immediate south of the tree and shrub belt. Works would then move to the northern part of Cooks Hole, interspersing with works within some southern areas within Thornhaugh, including active landfill areas and infilled areas awaiting capping. The final areas to be worked would be the central areas within Thornhaugh.

4.8 The existing sections of poorly maintained dry stone walling adjacent to Footpath TH 3 Sections 3 and 4 would be rebuilt in its entirety at a higher level along the reinstated Footpath route, as part of the restoration works.

Designed Mitigation Measures

4.9 Measures to remove, reduce or compensate for identifiable effects during the Proposed Development have been set out below. In addition, mitigation of several effects would be provided by the restoration scheme itself, and these measures have also been included below:

- All soil replacement operations would be carried out in accordance with the Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings (2021);
- Removal of the sections of dry stone wall along Footpath Th No. 3 sections 3 and 4 will be mitigated by reconstruction of a new wall in a location to be determined; and
- The proposed restoration scheme would result in significant biodiversity net gain when compared to the currently approved restoration scheme for Cooks Hole.

5 ASSESSMENT OF LANDSCAPE AND VISUAL EFFECTS

Introduction

5.1 In this section of the LVIA, the Sensitivity to the Proposed Development and Magnitude of Effects are assessed for landscape receptors (landscape features and landscape character) and visual receptors at both stages of the development before a separate sub-section considers how the two values combine to indicate a rating for overall Scale of Effects.

5.2 The LVIA has been undertaken using the Methodology described in Annex B which is based on GLVIA3. It is noted that the assessment has identified activities that are considered to be 'worst case' and estimated the approximate time during the Proposed Development when these activities would be undertaken.

5.3 The baseline for the LVIA comprises the currently permitted operations at the site including the currently approved restoration schemes. The currently permitted activities for Cooks Hole comprise mineral extraction and mineral processing using mobile plant with restoration using on site materials to agricultural grassland with tree and shrub planting. The currently permitted operations at Thornhaugh comprise landfilling, extraction of minerals during cell construction, crushing and processing of materials arising from cell construction and imported soil forming materials using mobile plant, receipt and temporary storage of waste storage containers (hi-pods) and restoration to a mixture of woodland, hedgerows, shrub, scrub and calcareous grassland.

Assessment of Landscape Effects

Introduction

5.4 Adverse or beneficial effects on the landscape receptors (i.e. landscape features and landscape character) can take place during all stages of the Proposed Development and have been described and assessed below.

Sensitivity of the Landscape Receptors to the Proposed Development

5.5 The Methodology set out in Annex B summarises how Sensitivity of the landscape receptors is assessed in accordance with recommendations included within GLVIA3 and Table M1 within the Methodology gives an explanation of Sensitivity rating criteria. Table 1 below evaluates a number of factors to arrive at an overall Sensitivity rating for the identified landscape receptors. (Note: ratings are adverse unless stated as being beneficial).

Magnitude of Landscape Effects

5.6 The Methodology summarises how the Magnitude of Landscape Effects is assessed, and Table M2 within the Methodology gives an explanation of Magnitude rating criteria. Table 1 below evaluates a number of factors to arrive at overall Magnitude ratings for the two identified stages of the Proposed Development.

Scale of Landscape Effects

5.7 When Sensitivity and Magnitude of Effects ratings are considered together, a Scale of Landscape Effects rating is obtained, which utilises the 'Scale of Effects Matrix' (see matrix Table M5 in Annex B, Methodology). While the matrix rating is only indicative, further written explanation is necessary as to why a particular Scale of Effects rating has been selected and this information is included in Table 1 below, to add clarity.

5.8 A Scale of Effects rating of Moderate – Major or Major are highlighted in **bold** and are considered Significant, with potential material importance in determination of the Planning Application.

Table 1: Sensitivity of Landscape Receptors to the Proposed Development, Magnitude of Landscape Effects and Scale of Effects

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site **Creation and restoration of the new landform in Cooks Hole (c. 18 years)**		**10 Years Post Restoration Stage**	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
Landform/ Topography	Thornhaugh is being progressively landfilled in cells with some areas previously restored and up to final levels. Stockpiles and mounds evident across Thornhaugh. Topography is therefore irregular and discordant. Cooks Hole is also varied, with worked out, low areas of unrestored land combined with medium - large sized storage mounds. *Sensitivity:* Low	The northern part of the proposed Thornhaugh restoration landform would be broadly similar to the approved landform, as set out on Drawing No.TLS6. However, the southern part would be higher to tie in with the integrated landform from Cooks Hole. The landform would slope to tie in to land to the north of the tree and scrub belt which runs adjacent to Thornhaugh Brook through the centre of Cooks Hole. South of Thornhaugh Brook, levels would also be higher when compared with the approved scheme, lacking the steeper gradients towards the southern edge of Cooks Hole. *Magnitude:* Medium	*Scale of Effects:* Minor - Moderate	The landform would have integrated into the surroundings by this time and the vegetated areas would have helped to assimilate it into the landscape, including from views to the north and northeast, with Bedford Purlieus as the backdrop. While the landform would be notably different to the surrounding landscape, which is very gently undulating, it would still be relatively similar to the approved landform for the northern part of Thornhaugh in terms of overall height and slope gradient. It would however be a more substantial landscape feature, extending further to the south. *Magnitude:* Small – Medium	*Scale of Effects:* Minor

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)		10 Years Post Restoration Stage	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
Scattered and Mixed Scrub	There are naturally regenerated areas within the Sites classified as scattered or mixed scrub which are not considered special or rare and are abundant in the locality. They are also straightforward to replicate. *Sensitivity*: Low	Most of these areas would be removed as part of the Proposed Development but this will be the case anyway for most of these areas due to the current ongoing works. *Magnitude:* Negligible/No change	*Scale of Effects:* Negligible/None	The proposed restoration proposals for Thornhaugh would provide a similar amount of open/mixed scrub as the approved scheme. However, the proposals for Cooks Hole would provide a significant net gain in scrubby areas. *Magnitude:* Medium (beneficial)	*Scale of Effects:* Moderate (beneficial)
Tree Belts/Woodland	Trees and woodland are generally valued in the landscape and positively contribute to landscape features and character. *Sensitivity*: Medium	Trees and woodland within the Sites would generally be retained as it is located along Thornhaugh Brook and around the edges of the Sites, as well as within the County Wildlife Site. Only a small area in the centre of the Sites would be removed. *Magnitude:* Negligible/No Change	*Scale of Effects:* Negligible/None	The proposed restoration proposals for Thornhaugh would provide a similar amount of woodland as the approved scheme. However, the proposals for Cooks Hole would provide a significant net gain in woodland. *Magnitude:* Medium (beneficial)	*Scale of Effects:* Moderate (beneficial)

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)		10 Years Post Restoration Stage	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
Neutral/Modified Grassland	Grassland across the Sites is mainly neutral grassland within the northern and eastern parts of Thornhaugh and modified grassland within the western part of Cooks Hole. These areas are not considered unique, special or rare and are easily recreated *Sensitivity:* Low	Some of the grassland areas would be disturbed during the Proposed Development, but that would be the case anyway if the approved scheme were to go ahead. Plus some areas (northern part of Thornhaugh) won't alter. *Magnitude:* Small	*Scale of Effects:* Minor	Grassland areas of an unspecified type (to be agreed based on the nature of the restoration material available) would be ecologically more valuable than the approved pasture grassland. *Magnitude:* Small (beneficial)	*Scale of Effects:* Minor (beneficial)
Ponds and hibernacula	Ponds are landscape features that are not prominent or valued within the Sites (except for the ones within the Country Wildlife Site, which would all remain undisturbed). *Sensitivity:* Low	These pond features would be removed in the approved scheme, which would be the same in the Proposed Development. *Magnitude:* Small	*Scale of Effects:* Minor	A number of ponds designed for newts would be created along the south western side of Cooks Hole which would be beneficial compared to the approved restoration scheme. Seven hibernacula would also be built within the new pond areas which would benefit nature conservation. *Magnitude:* Medium (beneficial)	*Scale of Effects:* Minor - Moderate (beneficial)
Landscape Character – Site and Local Surrounds	The Sites are largely disturbed, industrial areas with some partially restored land (north eastern flank of Thornhaugh and the County Wildlife Site in the	Effects on the character of the Sites during the working phases would be limited, as both the approved and the proposed schemes involve	*Scale of Effects:* Minor	The Proposed Development would result in restored Sites which would feature grassland areas, hedgerow, scrub and tree planting and	*Scale of Effects:* Minor (beneficial)

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)		10 Years Post Restoration Stage	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
	south western corner of Thornhaugh) which will not alter. Therefore, Sensitivity of the Sites to a revised restoration scheme broadly similar to the existing schemes in term of the landscape character that would develop, is limited. *Sensitivity:* Low	further landfill cell construction, further infilling and further progressive restoration works. In addition, the timescale would be identical for Cooks Hole, with operations continuing for 7 years longer in Thornhaugh. Differences would be the rate of infilling and the height to which the restoration landform would be raised, but this would not influence the character of the Sites to a notable extent during operations. *Magnitude:* Small		the reinstatement of Footpath routes together with new permissive rights of way. This is broadly similar to what is shown on the approved restoration plans, which merely show a different, higher landform in some places, although BNG would be higher. This would affect the character of the Sites to a small, but not particularly noticeable extent at this stage, when compared to the baseline. *Magnitude:* Small (beneficial)	
Landscape Character – LCA 2: Nassaburgh Limestone Plateau	This LCA is relatively very large when compared to the size of the Sites themselves. The Sensitivity of the LCA to the Proposed Development, taking into account the approved development and the character of the Sites at present, would be very limited.	The Proposed Development would have barely noticeable effects on the character of LCA 2 when compared to the baseline, which is the approved schemes for both of the Sites	*Scale of Effects:* Negligible	Again, at this stage, the character of the Sites if the Proposed Development were to go ahead would be broadly similar to the character evident if the approved schemes were to progress to completion. Effects on the wider LCA 2 would be barely noticeable, though positive.	*Scale of Effects:* Negligible (beneficial)

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)		10 Years Post Restoration Stage	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
	Sensitivity: Low	*Magnitude:* Negligible/No Change		*Magnitude:* Negligible (beneficial)	
PRoW – Footpath Th No.3 Sections 3 and 4	Footpath Th No.3 Sections 3 and 4 extend broadly from southwest to northeast across the centre of the Sites, dividing Thornhaugh from Cooks Hole. The route allows views into Thornhaugh through gaps in the adjacent hedgerow and direct views of Cooks Hole, with no adjacent hedgerow to the south of the path *Sensitivity:* Low - Medium	This footpath would be closed for the duration of works so that the land can be raised. *Magnitude:* Medium	*Scale of Effects:* Moderate	At this point, the path would have been reinstated along the same route but at a higher level for several years and would be offering users good views across the landscape to the north and east. *Magnitude:* Small (beneficial)	*Scale of Effects:* Minor (beneficial)
PRoW – Footpaths Th No.2 Section 2 & Th No.4 Section 1	Footpath Th No2 Section 2 crosses Cooks Hole from north to south. Footpath Th No.4 Section 1 lies entirely within the south eastern part of Cooks Hole. Footpath Th No.2 Section 2 is currently stopped up and Footpath Th No.4 Section 1 is current diverted. Sensitivity to the Proposed Development taking into account the baseline (i.e. they will be reinstated as part of the restoration works) is very limited.	There would be no effects on these PRoW during the operations when comparing the proposed and approved developments. *Magnitude:* Negligible/No Change	*Scale of Effects:* Negligible/None	Both the Footpath routes would be reinstated along their original routes as part of the approved scheme and the Proposed Development. However, they would be at differing heights with the proposed landform raising PRoW users to higher elevations than the approved landform.	*Scale of Effects:* Negligible (beneficial)

		Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)		10 Years Post Restoration Stage	
Landscape Receptors	**Existing Situation and Sensitivity to the Proposed Development**	**Magnitude of Effects**	**Scale of Effects**	**Magnitude of Effects**	**Scale of Effects**
	Sensitivity: Low			*Magnitude:* Negligible (beneficial)	

Assessment of Visual Effects

Introduction

5.9 This section assesses the potential visual effects of the Proposed Development upon a range of visual receptors, including ten representative viewpoints during the construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site and the creation and restoration of the new landform in Cooks Hole (c. 18 years) and then longer term, at the 10 Years Post Restoration stage. Visual effects from residential properties are 'likely effects', as no properties or associated gardens were able to be directly accessed in relation to the assessment.

5.10 The assessment has been undertaken within the following visual context:

- Visibility of the sites is restricted by good peripheral vegetation provided by a hedgerow along the north eastern boundary with the A47, a hedgerow adjacent to the permissive path along the eastern edge of Bedford Purlieus woodland and scrubby hedgerow vegetation, an area of naturally regenerated scrub to the immediate south of Cooks Hole? and roadside vegetation south of Cooks Hole;
- Bedford Purlieus screens all views from locations further to the west;
- There are a lack of residential properties with direct, clear views of the Sites, with the aforementioned boundary vegetation and also other intervening vegetation within the landscape obscuring views, as well as garden walls and fences;
- The surrounding landform is generally either reasonably flat (south and west) or gently undulating (north and east) which, in combination with the aforementioned vegetation, limits the availability of distant views;

  The baseline for the 10 Year Post Restoration stage is the approved restoration schemes which would restore Cooks Hole to a combination of agricultural grassland with some tree and shrub planting and Thornhaugh to a combination of grassland, hedgerow and woodland planting. The Proposed Development would provide a wider variety of habitats in Cooks Hole and significant biodiversity net gain. The restoration of Thornhaugh is broadly comparable to the Permitted Development.

Visual Receptor Groups

5.11 Assessment on the effects on views from a number of key locations for different visual receptors have been assessed as part of the Representative Viewpoints section below (and the Assessment

of Visual Effects tables that follow those points). Those locations not included as representative viewpoints have been considered below, as necessary. It should be noted that assessment of these visual receptor groups does not include detailed consideration of Sensitivity of the visual receptors to the Proposed Development or Magnitude of Effects but these factors have been taken into account when providing the Scale of Effects rating. Scale of Effects ratings are considered to be adverse unless specified as neutral or beneficial.

Residential Properties

5.12 The nearest occupied property to the Sites is Thornleigh House, approximately 45m to the north of the Site boundary, opposite Thornhaugh on the northern side of the A47. The property is set back from the highway, with a 3m tall mature hedgerow with trees bounding the front garden to the south and another well established hedgerow along the Sites boundary, on the southern side of the A47. This vegetation screens all views from the property in summer and would also heavily filter views in winter due to the intertwined layers of woody stems and branches. The Proposed Development would have a Negligible Scale of Effects on residents, with the vast majority of the scheme out of sight.

5.13 There are several other properties further to the north and the northwest of Thornleigh House, including (broadly from west to east) The Swill, The Old Dairy, Home Farm House, Bedford Lodge, 5 Home Farm Cottages, The Retreat, The Cottages, Laundry Cottages, Home Farm Cottage and Owl Corner. All these properties are set back from the A47 within wooded grounds and some obscure views southwards of others due to their positioning within the small hamlet. Combining this with the extensive roadside hedgerow means that views of the Sites from all these properties are either completely obscured or very limited, even in winter. The Scale of Visual Effects on all residents as a result of the Proposed Development would be Minor at worst.

5.14 Toll Cottage is also close to the Sites, located at the north western corner, adjacent to where Old Oundle Road exits onto the A47. The property is approximately 40m from the Site boundary but is well screened from it by intervening vegetation and also a dog kennel business consisting of a building/office and an outside yard featuring rows of kennels and runs. The Scale of Effects of the Proposed Development on residents and staff/visitors to the dog kennel business would be Negligible at both stages of the scheme (operational and progressive restoration stage and 10 years post restoration stage).

5.15 Nightingale Farm is located approx. 335m to the south of Cooks Hole, with the intervening land featuring naturally regenerated scrubby vegetation as well as well-established hedgerows around the Sites southern boundary. The Proposed Development would have very limited effects on visual amenity for farm residents due to a combination of distance and layers of intervening vegetation, which would still be the case in winter.

5.16 There are no views of the Sites from Thornhaugh Hall, located approximately 590m north east from the Sites boundary, due to distance combined with extensive intervening woodland vegetation within the grounds of the Hall. Thornhaugh Cottages are located approximately 550m from the Sites boundary, adjacent to the access road to Thornhaugh Hall off Russell Hill. Views towards Cooks Hole are completely restricted year round by a small woodland on the opposite side of Russell Hill along with other intervening vegetation along the A47. Oblique, partial views of the previously restored northern side of Thornhaugh are possible from first floor windows although distance and boundary vegetation limit visual disruption and that part of the Sites would alter the least when compared to the approved scheme. The Scale of Visual Effects would be minimal.

5.17 Properties within the village of Thornhaugh are located approximately 1.1km to the northeast of the Sites, with the intervening land characterised by gently undulating, open agricultural fields with dividing hedgerows oriented north to south. Most views towards the Sites from properties are blocked by other properties or are oriented away from the Sites but a small number have windows and/or gardens oriented towards the Site. While views are distant, the existing Site landform within Thornhaugh is partially visible due to its height with partial views of material storage mounds.

5.18 The Proposed Development would result in slightly improved views of the evolving restoration landform for Thornhaugh residents due to the revised elevations, but visual disturbance would not be significant when compared to the approved scheme. Following restoration, the higher proposed landform would be slightly more visible in the distance when compared with the approved restoration landforms for the two sites but at over 1.1km away, this would not be notably visually disruptive, especially as the view would include grassland areas, woodland, scrubby areas and hedgerows which would obscure the slopes to some extent.

Public Rights of Way

5.19 Footpaths Th No 3 Section 2 and Th No 9 Section 1 extend through Bedford Purlieus woodland to the west of the Site although views are heavily restricted by woodland vegetation and a boundary hedgerow. The Scale of Effects on users of these footpath would be no worse than Minor.

5.20 Footpaths to the north of the Site include FP Th No 10 Section 1 approximately 210m from the Site boundary which extends west from Oaks Wood Cottage, at the bend in Russell Hill, towards Footpath Th No 2 Section 4 where it heads north towards Home Farm House. Views south from this path across an open agricultural field are curtailed by the hedgerows on both sides of the A47, with views of the Site limited to small glimpses of mounds and higher land above the hedgerows. Works to construct the Proposed Development would be glimpsed but this would not cause significant visual disturbance to PRoW users and the final restoration landform, once vegetated, would visually merge with the landscape to an acceptable level.

5.21 Due to intervening vegetation and increasing distance, there are no views from Footpath Th No 2 Section 4 where it heads further north from the junction with Footpath Th No 10 Section 1.

5.22 Footpath Th No 5 Section 1 extends from the southern end of Meadow Lane, off the A47 within Thornhaugh village, approximately 1.1km to the northeast of the Site. As with the residential properties in this area, partial glimpses of the evolving Thornhaugh restoration landform are visible between and above intervening vegetation, and this would continue if the approved schemes were to be progressed. The Proposed Development would introduce slightly increased levels of visibility of the higher landform in Cooks Hole but this would still be in excess of one kilometre away and would be partially screened by eye level intervening vegetation. The Scale of Visual Effects would be Minor for PRoW users.

5.23 Footpath Th No 2 Section 3 extends along the southern side of the A47, adjacent to Thornhaugh, although it effectively runs between two hedgerows so views towards the Site are restricted by the vegetation. In addition, the north western part of Thornhaugh has previously been restored and will be incorporated into the Proposed Development, so any views from this Footpath will not alter whatever the outcome of the application. Therefore, the Scale of Effects would be Negligible/None.

Other Permissive Paths

5.24 Old Oundle Road runs along the eastern edge of Bedford Purlieus woodland to the immediate west of the Sites and is classed as a public highway subject to a Traffic Regulation Order (TRO) meaning no motor vehicles may use it. However, walkers can use this route and do have glimpsed views through the intervening woodland vegetation of the western edge of Thornhaugh, which has been the case for several years. The Proposed Development would not introduce notable changes to the filtered views from this path and the overall Scale of Effects would be Minor - Moderate at worst, from all points along the path. The previously restored north and north eastern part of Thornhaugh would remain the same as would the County Wildlife Site in the south west of Thornhaugh.

5.25 A permissive path extends from Old Oundle Road into the Sites at the previously restored, northern corner of Thornhaugh and extends to the southeast, just inside the Sites northern boundary, adjacent to a drainage channel. The path then dog legs to the north part way along the boundary and joins Footpath Th2 Section 3, which continues in a south easterly direction along the centre of the vegetated strip between the Sites boundary and the A47, exiting at the side of the Sites entrance. Refer to Viewpoint 3 below for further consideration of effects on views from this permissive path.

Roads

5.26 The Sites are visible in part from only two local roads including sections along the A47, and sections along Russell Hill, extending north from the A47. These views are all characterised by their fleeting nature due to the motion of the receptor (car driver, cyclist etc.) and also the mass of intervening hedgerow vegetation along the flanks of the A47, which heavily screens eye level views. Viewpoint 5 from the southern end of Russell Hill is included below although it is considered all other views from roads would receive limited visual disruption due to the Proposed Development. The evolving restoration landform would be glimpsed above the boundary hedgerow but this is the case at present for the Thornhaugh and for some other large storage mounds within Cooks Hole. The restored landform, once vegetated, would visually merge with the surroundings for road users and would not be unacceptably incongruous in the landscape.

Representative Viewpoints 1 - 10

5.27 As a result of initial desk study and subsequent confirmation during fieldwork, ten representative viewpoints were selected at locations surrounding the Site, as shown on Figure 1. The viewpoints

were agreed with Peterborough City Council during the scoping process. Intervening boundary and local vegetation and, to a lesser extent, landform and also distance are the elements that control visibility of the Site from the surrounding study area, which extends to a radius of approximately 2.0km from the centre of the Site.

5.28 Figures 2 to 21 show the view from each of the viewpoints, with two A3 sheets per view: one A3 shows a single frame view with the other A3 including the view within a panorama to show the local context. The methodology for presenting these figures is based on guidance within the following publication: Visual Representation of Development Proposals (LI & IEMA, September 2019).

5.29 The information in the Assessment of Visual Effects tables below considers the Sensitivity of visual receptors to the Proposed Development, Magnitude of Visual Effects and Scale of Visual Effects at the two identified stages of the Proposed Development.

5.30 As with Landscape Effects, the matrix in Table M5 of the Methodology has been used to combine ratings for Sensitivity and Magnitude to arrive at an indicative rating for Scale of Visual Effects. In addition to this, further written explanation has been added where necessary. Effects of Moderate – Major or Major scale are highlighted in **bold** and are considered Significant.

Assessment of Visual Effects Tables 2 to 11 for Viewpoints 1 - 10

Table 2 - Viewpoint 1: Junction of Footpath Th No 3 Section 2 and Section 3, c. 10m from Sites boundary *Type of Visual Receptor:* Footpath Users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Small	*Scale:* Minor - Moderate	Views are screened by intervening boundary vegetation, although glimpses are available in winter through the mass of woody stems/branches. The Sites are partially visible currently and this would continue. The Proposed Development would not be significantly different to the approved scheme.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Negligible/None	The view would be almost identical to existing, allowing for natural growth and development of the boundary hedgerow. There would be negligible difference between the view if the approved scheme went ahead or the Proposed Development was implemented.

Table 3 - Viewpoint 2: Junction of Footpath Th No 9 Section 1 and Old Oundle Road, c. 10m from Sites boundary *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Small	*Scale:* Minor - Moderate	As with Viewpoint 1, views are screened by intervening boundary vegetation, although glimpses are available in winter through the mass of woody stems/branches, as seen on the viewpoint photograph. Again, the Sites are partially visible currently and this would continue. The Proposed Development would not be significantly different to the approved scheme.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Negligible/None	The view would be broadly similar to existing, although scrub and shrub planting along this boundary would, by this point, have developed which would widen the vegetation belt between the restored areas beyond and the path, so views would be screened by more dense, woody vegetation and also leaves in spring/summer.

Table 4 - Viewpoint 3: Permissive path, within Thornhaugh Landfill Site *Type of Visual Receptor:* Permissive path users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Negligible/None	*Scale:* Negligible/None	This permissive path runs along the northern part of a previously restored area on the Thornhaugh site, which will not alter as part of the Proposed Development. The only views of the Proposed Development are likely to be middle - long distance, partial views of the top of the proposed landform as it evolves and is raised to a maximum of approximately 14.1m above existing Footpath Th No.3 Sections 3 and 4, approximately 525m to the southeast. However, the approved restoration landform will also rise to the same height across land to the southeast of the viewpoint, although closer to it. However, land in the immediate foreground would be planted as soon as possible, which will be the case regardless of the outcome of the application, and this vegetation will help obscure views of the land beyond after several years of growth.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Negligible/None	At this stage, there would be barely any difference between the view of the restored landform if the Proposed Development went ahead or the approved scheme was implemented. The planting scheme in this area is almost identical to the approved scheme, and it is this planting that would be visible in the close distance.

Table 5 - Viewpoint 4: Junction of Footpaths Th No 3 Section 4 and Th No 2 Section 2 (currently stopped up), within Sites *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Large	*Scale:* **Moderate – Major (Significant)**	Footpaths Th No 3 Section 4 would be closed to allow material to be placed in order to raise levels to approximately 7 – 8m above existing, to form the proposed integrated restoration landform. Therefore, effects on views would be Significant as the view would be removed entirely for several years. An alternative route to cross the site will be provided to the south of Thornhaugh Brook prior to the closure of FP Th No 3 Sections 3 and 4.
10 Years Post Restoration Stage	*Magnitude:* Small (beneficial)	*Scale:* Minor - Moderate (beneficial)	Once restored, the Footpath would be reinstated along approximately the same line but at a higher elevation, up to 14.1m above the consented restoration level at its highest point. This would afford longer distance views across the landscape to the north and east which would add interest to the walk. There would also be more elevated views towards Cooks Hole Farmhouse which would increase the visual appreciation of this Grade II Listed building, especially once it has been renovated and the grounds landscaped (to be the subject of a separate planning application in due course).

Table 6 - Viewpoint 5: Junction of A47 and Russell Hill, c. 10m from Sites boundary *Type of Visual Receptor:* Road users *Receptor Sensitivity:* Low - Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Medium	*Scale:* Moderate	The existing view shows the A47 and roadside hedgerow which, even in winter, is dense enough to screen most views of the land beyond, with only glimpses through the woody vegetation available. The Proposed Development would likely result in intermittent views of land raising in the middle distance, above the hedgerow, involving plant machinery movements and placement of material. Roads users would glimpse this for a fleeting moment and while it would be visually disruptive, it would not be highly visually disruptive.
10 Years Post Restoration Stage	*Magnitude:* Small (beneficial)	*Scale:* Minor (beneficial)	Once restored, the view of the Sites from this location would show vegetated higher land in the middle distance extending above the intervening hedgerow by a readily noticeable amount. This would differ from the baseline in the vicinity of Cooks Hole, where the approved restoration landform would not be seen as the levels would fall southwards towards the woodland belt. However, the vegetated landform would visually merge with the hedgerow and would be reasonably characteristic of the wider rural surroundings and would form an integrated restoration landform with Thornhaugh, further to the north.

Table 7 - Viewpoint 6: Footpath Th No 4 Section 2, c. 325m from Sites boundary *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Medium	*Scale:* Moderate	The existing view shows the boundary hedgerow and the Thornhaugh landform beyond, in the middle distance. The height of the landform is approximately 60m AOD, with the ground level of the viewpoint at c. 45m AOD, but from this position and angle of view, it does not extend a notable distance above the surrounding vegetation so is not visually conspicuous. The same is true of storage mounds within Cooks Hole, again partially visible in the middle distance. Construction and landfilling works within Cooks Hole would be more evident than previous works due to the increased scale of the overall restoration landform, although its maximum height would remain the same. Visual effects would be notable but are not considered to be Significant, when compared to the baseline.
10 Years Post Restoration Stage	*Magnitude:* Small (beneficial)	*Scale:* Minor (beneficial)	As with Viewpoint 5, the restored landform would be more apparent from this location and most other points along Footpath Th No.4 Section 2 due to the increased scale of the restoration landform, especially within Cooks Hole. However, again the vegetated landform would visually merge with the foreground boundary hedgerow and other vegetation, including Bedford Purlieus further to the southwest. The restoration landform would not appear incongruous in the landscape due to the grassland and planted areas which would break up the slopes and help assimilate them into the adjacent landscape whilst providing benefits to biodiversity and nature conservation.

Table 8 - Viewpoint 7: Footpath Th No 4 Section 1, c. 5m from Sites boundary *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Medium	*Scale:* Moderate	The viewpoint is on the north eastern edge of the Site and the existing view shows the worked out, eastern part of Cooks Hole featuring the unrestored quarry base, mounds of soil and/or overburden material and patches of naturally regenerated, scrubby vegetation. Approved restoration works are the 'baseline' situation and would occur within this land irrespective of the Proposed Development. Therefore, the additional visual changes that would occur due to the proposed scheme, including placement of material to higher levels within the visible area, would be noticeable but not unexpected or causing significant visual disruption compared to the baseline.
10 Years Post Restoration Stage	*Magnitude:* Small	*Scale:* Minor	Views of the proposed restoration landform would be different to the view that would be available if the approved scheme were to go ahead. A small car park would be located to the immediate west, beyond which land would rise towards the highest point of the landform within Thornhaugh, at 71m AOD, though the view would be restricted by an intervening woodland block and hedgerows. However, the view southwest would be similar to that approved, which would feature land gradually falling away towards Thornhaugh Brook, with Bedford Purlieus forming the distant background. Both the approved scheme and the Proposed Development would result in views from this location that are characteristic of the rural surroundings, though longer distance view towards the west would be lost due to intervening landform relating to the proposed layout.

Table 9 – Viewpoint 8: Junction of A47 and Entrance to Sibberton Lodge, c. 570m from Sites boundary *Type of Visual Receptor:* Residents, road users *Receptor Sensitivity:* Residents: *High* *Road users: Low - Medium*			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Small	*Scale:* Residents: Moderate Road Users: Minor	The existing view shows the Sites in the middle – far distance with the Thornhaugh and unrestored land within Cooks Hole partially glimpsed between and above intervening roadside vegetation. Similar activity would continue regardless of whether the Proposed Development was implemented as the approved scheme would involve machinery movements and other visually noticeable works, although this would likely be slightly more evident due to the higher proposed landform being constructed across Cooks Hole. However, distance and intervening boundary and other vegetation would reduce the scale of effects, which would not be Significant for road users or residents.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Residents and Road Users: Negligible/None	Once restored and vegetated with grassland areas, hedgerow and trees/shrub blocks, the proposed restoration landform would visually merge with the intervening roadside vegetation, although it would be more visible than the approved landform due to the higher proposed landform being constructed within Cooks Hole. However, it would not cause significant additional visual disturbance when compared to the approved scheme and would be characteristic of the surroundings. Views of Bedford Purlieus would be retained.

Table 10 – Viewpoint 9: Footpath Th No 4 Section 1, c. 5m from Sites boundary *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Medium	*Scale*: Moderate	The existing view shows the southern part of Cooks Hole, with unrestored land extending across the quarry floor, including mounds of overburden material. The tree belt through Cooks Hole is evident in the right hand side of the view with Bedford Purlieus visible in the far distance on the left hand side of the view. As with other viewpoints, quarry restoration works would be visible whatever the outcome of the application although the proposed scheme would result in far more placement of material and land raising, so visual effects would be higher than would otherwise be expected. However, due to the existing context, this would not be Significant.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Negligible/None	The current route of Footpath Th No.4 Section 1 will be retained as a permissive path following the restoration of Cooks Hole. Both the approved scheme and the Proposed Development would result in woodland being seen in the foreground of this view, although there may be partial views of higher restored and vegetated land further to the west, relating to the proposed landform. Visual effects when compared to the baseline would be limited and would be entirely characteristic of the local surroundings.

Table 11 – Viewpoint 10: Junction of Footpath Th No 2 Section 1 and Footpath Th No 2 Section 2 (Stopped up) c. 5m from Sites boundary *Type of Visual Receptor:* Footpath users *Receptor Sensitivity:* Medium			
Proposed Development Stage	**Magnitude of Visual Effects**	**Scale of Visual Effects**	**Explanation/Rationale**
Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site Creation and restoration of the new landform in Cooks Hole (c. 18 years)	*Magnitude:* Small	*Scale*: Minor - Moderate	The existing view is similar to VP9 in that it shows the southern part of Cooks Hole, with unrestored land extending across the quarry floor, including mounds of overburden material. The tree belt through Cooks Hole is evident in the middle distance with the derelict barn associated with Cooks Hole Farmhouse partly visible in the centre of the view. Again, quarry restoration works would be visible with the proposed scheme resulting in more placement of material, although the view through to the farm building would be retained, with the restored land gradually sloping down to tie in with the existing levels. Effects on visual amenity would be slightly higher for the proposed scheme due to the integrated landform between Cooks Hole and Thornhaugh, which would be visible in the distance.
10 Years Post Restoration Stage	*Magnitude:* Negligible/None	*Scale:* Negligible/None	The restored southern part of Cooks Hole would appear similar with grassland extending into the middle distance, down to Cooks Hole Farmhouse and the tree belt. However, the Proposed Development would result in the landform beyond the tree belt sloping up to meet with highest point of the landform on Thornhaugh. The view would be broadly similar in the foreground compared to the baseline, with the middle – far distance view again broadly similar although with the restoration landform in closer proximity so more visually dominant

6 ASSESSMENT OF CUMULATIVE LANDSCAPE AND VISUAL EFFECTS

Introduction

6.1 The cumulative effects of the Proposed Development upon landscape resources and visual amenity have been considered below in line with the GLVIA3. Cumulative impacts are defined on page 120 of GLVIA3 as those that:

> *"result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future."*

6.2 A Proposed Development can either cause cumulative landscape effects or cumulative visual effects, or both of these. GLVIA3 states that the emphasis in Environmental Impact Assessment (EIA) is on *likely significant* effects rather than cataloguing every conceivable effect that might occur. That guidance has been followed in this section.

6.3 Cumulative landscape effects include changes to landscape elements, character and qualities of the landscape as a result of two or more (in this case) areas of mineral or waste workings or related activities. Cumulative visual effects are concerned with changes in the appearance of available views as a result of two or more areas of mineral or waste workings or related activities. Cumulative visual effects may occur as follows:

- *Simultaneously* - where a number of mineral workings or related activities may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view without moving;
- *Successively* - where a number of mineral workings or related activities may be viewed from a single viewpoint successively by turning around at a viewpoint; and
- *Sequentially* - where a number of mineral workings or related activities may be viewed sequentially or repeatedly from a range of locations when travelling along a route.

Extent of Other Quarry, Quarry Related and Waste Development and Proposed Development in the Surrounding Area (Existing Baseline)

6.4 In order to establish a baseline against which the *additional* effects of the Proposed Development can be assessed, existing or proposed developments of a similar nature or scale to the Proposed Development, ideally within the study area, need to be identified.

6.5 There are five other development schemes of relevance to the Proposed Development which are shown on Figure ES2.1, as follows:

Development 1) Thornhaugh II

This site is located to the immediate south of Cooks Hole, on previously worked land which has not been in active use for several years and which has naturally regenerated with scrubby vegetation cover such as birch, buddleia and bramble, across the undulating landform. One planning permission (for the whole site) states that winning and working of minerals and the deposit of waste material must cease no later than 21st February 2025. Another permission relates to a smaller area within the eastern part of the site and states that recycling of residual wastes and infilling up to ground levels (approx. 6ha) had to commence by May 2016, which has been carried out and has now finished.

Development 2) Thornhaugh IIB

This relates to an area at the eastern end of Thornhaugh II which is currently being worked for limestone (a permitted five year operation for 700,000 tonnes) and progressively restored with imported inert material, with the completion date being 2026.

Development 3) Cross Leys Quarry, Leicester Road

Cross Leys Quarry is located approximately 1.2km to the northwest of Thornhaugh at its closest point, with the northern section of Bedford Purlieus woodland providing an extensive intervening landscape feature. Consequently, there is no intervisibility between the two sites.

The development at the quarry involves restoration of the quarry workings to agriculture and woodland through the importation and deposit of inert restoration materials and quarry waste.

Operations had to commence by December 2023 and are anticipated to be completed in approximately 7 years.

Development 4) A47 Wansford to Sutton DCO

The village of Wansford is located approximately 1.6km to the east of Cooks Hole, with the A47 forming the northern boundary of the settlement. The roundabout junction with the A1 is located at the north eastern corner of the village, with the A47 continuing further eastwards towards Ailsworth and then onto Peterborough.

The DCO development involves various highways works including dualling the A47 from the Wansford eastern roundabout for 2.6km and improvement of the on/off ramps for the A1. The works must commence within 5 years of the date of the grant of the order, which was 17th February 2023.

Development 5) East Northants Resource Management Facility (ENRMF) DCO

This is another Augean operation located approximately 3.5km to the west of the Sites, beyond Bedford Purlieus woodland, meaning there is no intervisibility between the operational areas. The development has commenced and involves mineral extraction along with hazardous waste and LLW waste landfill, and a waste treatment and recovery facility. Restoration of the site will be back to nature conservation habitats with public access along proposed paths.

Assessment of Cumulative Landscape Effects (Features and Character): Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site. Creation and restoration of the new landform in Cooks Hole (c. 18 years)

6.6 Although the Proposed Development along with the developments listed above would result in various cumulative effects on natural landscape features, at each of the site locations, these would not be of a Moderate – Major or Major level and therefore would not cause Significant cumulative effects. The features affected are not within landscape designated areas and are not considered special or unique. Restoration works at Thornhaugh IIB, Cross Leys Quarry and ENRMF will eventually result in positive benefits for landscape features and biodiversity, as would the Proposed Development across the Sites.

6.7 In terms of cumulative effects on landscape character, it is considered that due to the context of Thornhaugh II & IIB, Cross Leys Quarry, Thornhaugh and Cooks Hole, which are all either currently active or previously active mineral raising and/or landfill operations, the existing disturbed character of the sites will generally improve over time as a result of the existing and proposed developments. Any temporary cumulative effects on the landscape character of the surrounding area while the works are carried out would be limited in scale, and would not be Significant.

6.8 The A47 highway works will be different to any of the other developments although it would also involve movement of plant machinery and related activity in terms of groundworks, engineering and construction operations which would all affect the local landscape character to a limited extent. However, this would not result in Significant cumulative effects when considered alongside the Proposed Development, which are of sufficient distance away, with an urban settlement in between the sites, to limit the combined influence of the various works on landscape character.

Assessment of Cumulative Visual Effects: Construction of cells, infilling and progressive restoration of Thornhaugh Landfill Site. Creation and restoration of the new landform in Cooks Hole (c. 18 years)

6.9 There would be very limited simultaneous or successive intervisibility between the Proposed Development and the other developments listed above, mainly due to the distance between the developments and intervening elements such as Bedford Purlieus, which screens all views towards Cross Leys Quarry and ENRMF. There are currently successive views of some higher land within the Proposed Development and a small part of the quarrying operation within Thornhaugh IIB from the same location (represented by Viewpoint 8 at the entrance to Sibberton Lodge, off the A47). However, the Proposed Development would merely continue this, with the emerging higher land within the Sites being partially visible from this point but the cumulative effects would not be Significant considering the current context.

6.10 There are sequential views of works within Thornhaugh IIB and the Sites (Thornhaugh and Cooks Hole) along the A47 but these too would not be affected to a noticeable degree by the Proposed Development in combination with the other developments, so there would not be any Significant cumulative visual effects on road users. Any cumulative visual effects on residents

would be similar to the current situation, which is Minor in nature and would remain so as a result of the Proposed Development during the operational stage.

6.11 Users of Footpaths Th No 2 Section 1 and Th No 4 Section 1 along the southern side of Cooks Hole would also receive sequential views of the Proposed Development and Thornhaugh II although this has been the case regarding the current works within the Sites and the disturbed landscape of the Sites for several years, so any additional cumulative visual effects caused by the Proposed Development would be Minor at most and not Significant.

6.12 The A47 highway works are at such a distance away to the east that there would be no cumulative visual effects involving that development. Any sequential effects would be sufficiently separated by time and distance as to be Negligible.

Assessment of Cumulative Visual Effects: 10 Years Post Restoration Stage

6.13 At this point, there would be Minor beneficial cumulative effects from Viewpoint 8 and for sequential views along the A47 for road users as the revised landform across the Sites would mean that more of the proposed vegetation on the land would be visible, although this would be in the form of relatively fleeting, transient views as part of a longer journey.

6.14 PRoW users would have sequential views of the restored operations as they pass through the Sites and then cross onto adjacent land in places, notably along the southern boundary of Cooks Hole, where views of the Proposed Development and Thornhaugh II would be possible, although the general nature of these cumulative effects would be beneficial and positive. There would be no Significant cumulative effects for residents at this stage.

7 COMPLIANCE OF PROPOSED DEVELOPMENT WITH PLANNING POLICIES

Introduction

7.1 Section 3 above summarises national and local planning policies and guidance relating to the Proposed Development in terms of potential landscape and visual effects. Table 14 below summarises how the Proposed Development accords with these local polices. (Note: it is considered that national planning policy as defined within the revised NPPF is adequately expressed within local policy, so specific NPPF policies have not been addressed in Table 14).

Table 14: Accordance of the Proposed Development with Relevant Local Policies and Guidelines

Policy or Guideline Document	Accordance with Relevant Policy or Guideline
Cambridgeshire and Peterborough Minerals and Waste Local Plan 2036 (adopted July 2021)	*Policy 17: Design* It is considered that the Proposed Development is in accordance with Policy 17 point f) in that it would be sympathetic to local character and the landscape setting, especially bearing in mind the currently approved restoration schemes for the two areas and the nature of the rural surroundings. In terms of point g), there would be enhancements to biodiversity and nature conservation due to the Proposed Development when compared to the baseline. In addition, raising the restoration landform would allow the opportunity for enhanced views from elevated Footpaths. Point h) is related to point f) in that the proposed scheme would enhance the landscape by providing a net gain in BNG which would also help the restored Sites assimilate into the local rural surroundings. *Policy 19: Restoration and Aftercare* a) The Sites would be progressively restored when areas have been fully worked out and restoration works are able to be undertaken. b) The scheme would enhance the local countryside due to the aforementioned significant level of BNG that would result from the proposed scheme. c) N/A d) See above for consideration of BNG and also the ecological chapter of the ES. e) N/A f) The Proposed Development would result in the reinstatement of currently stopped up Footpaths across the Sites and would also allow users to enjoy more elevated views across the

	landscape than would otherwise be the case. In addition, new permissive paths would be created (as shown on Drawing No. THORN036: Restoration Plan for Cooks Hole Quarry and Thornhaugh Landfill) which would enhance the local PRoW network. *Policy 21: The Historic Environment* When compared to the baseline, the Proposed Development would improve the setting of the Grade II Listed Cooks Hole Farmhouse and the associated agricultural building. The approved scheme includes an 'island' of higher land to the immediate north of the Farmhouse which is approximately five metres higher than the surrounding land, would screen views from and to the farmhouse and appears rather incongruous on the restoration plan. The proposed restoration landform does not include this island of higher land which is considered beneficial, although it would extend further south overall than that shown on the approved scheme. *Policy 23: Traffic, Highways and Rights of Way* Footpaths through the Sites have been closed for a number of years but would be reinstated as part of the restoration works, once the restoration landform has been created across the Thornhaugh and Cooks Hole areas. Footpath Th No 3 sections 3 and 4 from west to east, dividing the two Sites, would be enhanced as this route would extend over the proposed higher landform along the line of the existing route which would allow good, elevated views across the surrounding landscape from some locations. This would not be possible if the approved scheme were to be implemented. In addition, Footpaths Th No 2 Section 2 and Footpath Th No 4 Section 1 would be reinstated through Cooks Hole. Footpath Th No 2 will be reinstated across Thornhaugh. The footpaths are shown on the aforementioned Restoration Plan (Drawing No. THORN036). A new permissive path would also be provided along the southern side of Thornhaugh Brook. This route would link Footpath TH9 Section 1 (to the west) with the current FP Th No 4 Section 1 diversion route to be retained along the southern boundary of Cooks Hole which will be retained as a permissive path following restoration. Furthermore, the existing permissive path along part of the northern boundary of Thornhaugh will be retained in the restoration scheme.
Peterborough Local Plan 2016 to 2036 (adopted July 2019)	*Policy LP16: Design and the Public Realm* See above for further consideration of how the Proposed Development accords with policy dealing with design issues and contributing to landscape character.

	Policy LP19: The Historic Environment It is considered that the Proposed Development would respect the setting of the Grade II Listed Cooks Hole Farmhouse and associated agricultural buildings, certainly when compared to the baseline. See above for further details. *Policy LP27: Landscape Character* See above for further consideration of how the Proposed Development respects landscape character. It is noted that the Sites are largely despoiled currently, with quarrying and landfilling activity evident across much of the land, although some areas have been fully or partially restored and some features will not be disturbed (north and north eastern part of Thornhaugh, County Wildlife Site, Cooks Hole Farmhouse and related tree belt/watercourse). The approved restoration scheme will be in character with the rural surroundings and the Proposed Development includes a broadly similar restoration approach (grassland areas, tree/shrub/scrub planting areas, hedgerows, reinstated Footpaths etc., albeit with an altered landform. *Policy LP29: Trees and Woodland* There would be a long-term, significant net gain in biodiversity compared to the baseline, which would notably increase tree and shrub coverage and would therefore be in accordance with this policy.

8 SUMMARY

Introduction

8.1 This LVIA has been produced to accompany a Planning Application to revise the restoration landform for Cooks Hole Quarry and the adjacent Thornhaugh Landfill, located approximately 10km to the west of Peterborough. The proposed combined restoration profile would provide an integrated, coherent landform to both sites and would replace the currently approved though separate restoration schemes for both operations. The Methodology adopted for this LVIA is based on GLVIA3 and is included as Annex B to this report. The LVIA should be read in conjunction with the accompanying LVIA Figures (Figures 1 to 21) and the Development Description in the Planning Statement.

Effects on Landscape Features

8.2 The baseline situation is that both of the Sites are active quarrying and/or landfilling operations meaning that much of the land is currently being worked, is unrestored or is otherwise degraded. In addition, there are approved restoration schemes for the Sites which include grassland creation (Thornhaugh), agricultural (pasture) land (Cooks Hole), tree and shrub planting blocks, hedgerows and reinstated footpaths. Due to this context, the baseline includes for the removal of some areas of vegetation along with changes to the landform in order to create the approved restoration landform. The Proposed Development would result in a broadly similar scheme across the Sites which would differ in the shape and scale of the restored landform and the arrangement of grassland and planting areas. There would be significantly more planting on Cooks Hole as a result of the proposed development and the creation of a number of waterbodies, plus associated hibernacula.

8.3 Therefore, there would be obvious effects on the profile of the landform as the higher land would extend further south than the approved scheme although the maximum height in Thornhaugh would remain the same. The changes to the landform are not considered to be Significant due to the aforementioned context and the landform south of Cooks Hole Farmhouse would feature shallower slopes, which is considered a benefit.

8.4 In terms of vegetation, additional lengths of hedgerow and areas of scattered and mixed scrub would be removed, plus a small area of mixed woodland (refer to Ecological Impact Assessment

for further details) which would be adverse but not Significant, as these features are not considered special or unique in any way, are plentiful in the surrounding landscape and would be replaced in greater quantities as part of the proposed restoration scheme.

8.5 Footpath Th No. 3 Sections 3 and 4 would be closed as a result of the Proposed Development, which would not be the case if the approved scheme were to proceed. This is because the new route would be raised to a maximum height of approximately 14.1m above the existing footpath, in order to create the proposed new restoration landform. Refer to Table 1 below for further consideration.

8.6 There would be very limited effects on other footpaths during the operations when compared with the baseline: the closed routes would remain closed for the same amount of time and the routes around the edge of the Sites would remain open and would be integrated into the restored landscape.

Effects on Landscape Character

8.7 The character of the Sites is not considered highly valued or highly sensitive (it is not located within a National Park or AONB), and they consist of largely disturbed areas with some partially restored land, with approved restoration plans. Therefore the sensitivity of the Sites to the Proposed Development is Low.

8.8 Effects on the landscape character of the Sites would be relatively limited due to the existing context, as the Sites are currently degraded over much of the land and will be restored in accordance with the approved scheme in due course, should the Proposed Development not go ahead. The changes introduced by the proposed scheme on the landscape character of the Sites would therefore be limited, both during the working phases and also post restoration, when it is considered there would be minor benefits to landscape character due to the improved planting provision and the enhancements to the Footpath network.

8.9 There would be negligible effects on the wider LCA 2 area: Nassaburgh Limestone Plateau; featuring landscape character sub-areas 2b: Burghley and Walcot Slopes and 2c: Wittering Limestone Plateau, due to the size of the sub-areas and the baseline context.

Effects on Visual Amenity

8.10 The visibility of the Site is primarily influenced by boundary hedgerow vegetation, scrubby land to the south and Bedford Purlieus woodland to the west. In addition, the lack of residential properties with direct, clear views of the Sites restricts the number of sensitive visual receptors within the local area. Footpath users are generally less sensitive than residents and there are a number of PRoW routes within the immediate surroundings, including extending from east to west along a hedgerow through the middle of the two Sites. The surrounding landscape is also reasonably flat or only gently undulating, meaning longer distance views are often restricted by intervening vegetation.

8.11 Due to the aforementioned baseline context, it is considered that there would be few locations from where visual receptors would receive Significant effects on visual amenity. These are limited to the entire route of Footpath Th No.3 Sections 3 and 4 which extend through the centre of the Sites, dividing them into their separate entities. Even taking the baseline into consideration, the Proposed Development would remove views as the route would be closed for several years and the land along the route raised by up to approximately 14.1m. Following restoration, elevated views would be enhanced from the baseline which would retain the current line of the route, resulting in beneficial effects of a Minor scale

8.12 It is not considered that there would be Significant visual effects for any other receptors, be they residential, PRoW users, road users or others, when considering the context of the Sites. Several locations would receive additional visual disruption caused, in the main, by the construction of the higher restoration landform and the associated activity, but these effects would be Moderate adverse at most, and for a temporary period, after which the restored areas would gradually integrate into the surrounding rural landscape.

8.13 The principal of land raising as part of the restoration approach has previously been established with the approved scheme for the north western part of Thornhaugh, so extending this landform further to the southeast is considered sufficiently typical of the baseline to not cause unacceptable effects on the character of the Sites or surrounds.

8.14 In addition, there would be a net benefit for nature conservation as a result of the planting proposals, which would also benefit landscape features and character.

Cumulative Effects

8.15 There are five other developments within the local area which have been considered in combination with the Proposed Development. These range from other quarry related developments, such as restoration works at Cross leys Quarry and limestone extraction works at Thornhaugh IIB, to highway upgrading works associated with the A47 to the east of Wansford.

8.16 Due mainly to the locations of the other developments some way from the Sites (except for Thornhaugh II and IIB which are adjacent to Cooks Hole Quarry), the associated lack of intervisibility with the Sites, the current context of the Sites as operational facilities and the broad similarities between the proposed revised restoration landform and the approved restoration landform (i.e. no increase in maximum height, requiring infilling and extensive earthworks to create the landform, restoration to grassland with woodland blocks and scrub etc.), it is considered that there would be no Significant cumulative effects on either landscape or visual receptors.

8.17 There would be some cumulative effects due to the proposals but these are not considered to be of a notable scale and once restored, cumulative effects would generally be slightly beneficial in terms of views along the A47, views from some PRoW and also for nature conservation/biodiversity.

Planning Policy Compliance

8.18 It is acknowledged that there would be evident changes to the character of parts of the Site due to the Proposed Development although when considered in relation to the baseline context, which will also cause permanent changes to the landscape, these changes are considered to be appropriate to the Sites in the long term. This would be in accordance with several planning policies at both a national (i.e. NPPF) and a local level. Both the approved and the proposed schemes would lead to the continuation of the industrial character of the operational parts of the Sites during the working phases. However, following restoration, the Proposed Development would be sympathetic to local character over time in a similar manner as the approved scheme.

8.19 There would be a long term and significant biodiversity net gain which in turn would contribute positively to landscape features and character, something which again would accord positively with a number of planning policies. Stopped up footpaths would be reinstated along their

designated routes, albeit at higher elevations in some cases, and there would be an additional route provided along the southern side of the watercourse and associated vegetated corridor passing from west to east through the centre of Cooks Hole Quarry. Views from the higher land would increase the recreational enjoyment for footpath users by offering vista over the surrounding land from certain locations, which was not a feature of the approved restoration plans for either site. These design details would all comply with planning policy.

8.20 In summary, the Proposed Development would, over the long term and taking into account the baseline context and mitigation proposals, accord positively with a number of national planning policies included within the NPPF and reflected in local planning policy, such as Policies 1, 19, 21 and 23 from the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2036, (adopted July 2021) and the Peterborough Local Plan 2016 to 2036 (adopted July 2019) which deal with good design, respecting landscape character and historic & cultural assets, conserving and enhancing the natural environment, restoration & aftercare.

ANNEX B: LVIA METHODOLOGY

Introduction

1.1 Guidance for the undertaking of this Landscape and Visual Impact Assessment has been sourced from the Guidelines for Landscape and Visual Impact Assessment[1].

1.2 Landscape effects are the predicted effects on the landscape features and landscape character, jointly referred to as the landscape 'receptors'. These effects could include direct, physical changes to the landscape features/elements but also includes aesthetic, perceptual and experiential aspects of a landscape which may contribute to the existing landscape character.

1.3 Visual effects are the predicted changes to a view and on the general visual amenity experienced by people (visual receptors). Typically, the various visual receptor groups may comprise residents, the users of PRoW, users of recreational facilities, pedestrians and the users of a variety of forms of transport such as bicycles and horses or the drivers and passengers of vehicles, including trains.

1.4 LVIA can be undertaken as part of a formal Environmental Impact Assessment (EIA) which requires that a final judgement is made about whether or not each effect is likely to be 'Significant'. Alternatively, LVIA can be applied informally to non EIA projects as a contribution to the 'appraisal' of development proposals.

1.5 The general approach used establishes the 'Landscape and Visual Context' (i.e. Baseline) of the study area (Sites and their surrounds) against which the potential landscape and visual effects of the development proposals can be identified, described and assessed. The approximate 2.0km radius study area selected is based on desk study and fieldwork.

Landscape and Visual Context (Baseline)

Introduction

1.6 Establishing the landscape baseline is a process of *"desk study and fieldwork to identify and record the character of the landscape and the elements, features and aesthetic and perceptual factors which contribute to it. The process should also deal with the value attached to the landscape".*

[1] GLVIA, third edition, published April 2013 by the Landscape Institute and Institute of Environmental Management and Assessment

1.7 Landscape receptors are defined on page 36 of the GLVIA3 as including *"the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas."*

1.8 Visual receptors are defined by the GLVIA3 as *"the people who will be affected by changes in views or visual amenity at different places"*. These can include individual or groups of residents, people working in the area, people passing through the area using various forms of transport, people visiting the area and people engaged in recreation or leisure pursuits in the area.

1.9 Similarly, the visual baseline should *"establish the area in which the development may be visible, the different groups of people who may experience views of the development, the viewpoints where they will be affected and the nature of the views at those points. Where possible it can also be useful to establish the approximate number of different groups of people who will be affected by the changes in views or visual amenity".*

1.10 The visual baseline is established by a combination of desk study, 'visibility mapping' using manual techniques as well as digital approaches such as production of a ZTV model and fieldwork. Representative viewpoints from where changes to the view may be experienced as a result of the proposed development are identified through this process and the nature of the viewpoint locations, the views themselves and the respective receptors summarised. Single frame images and panoramic context photographs from each viewpoint are taken and presented with this information.

1.11 The process is undertaken to determine the baseline against which the development proposals are to be compared and to establish the importance of the constituent parts of the landscape and factors affecting the potential visibility of the proposed development. This provides information against which the Sensitivity, Magnitude of Effects and subsequently the Scale of Effects can be assessed. From this, it is then possible to make a judgement in determining the planning application on whether or not the effects identified are of a high enough level to be considered 'Significant'.

Landscape Character Assessment

1.12 Existing landscape character assessment studies are considered as part of the baseline work, in order to gather information about the intrinsic character of the Sites and their surrounds. Studies at several scales are referenced including the national level assessment of National

Character Areas (NCA's) by Natural England and also County or District level landscape character studies.

1.13 Landscape character assessment is also undertaken on a more localised level if necessary and a description of the landscape characteristics can be provided in relation to the Sites and their immediate surrounds.

Landscape Designations and Policies

1.14 The baseline study also identifies national and local landscape designations, usually contained in the relevant Development Plan Documents. Whilst local designations are generally not supported in national planning policy, they can reflect the value of a particular landscape to the local population. Landscape related planning policies from relevant Development Plan Documents are also referred to and how the Proposed Development accords with them is considered in order to enable a critical comparison between the likely effects of the proposals and the aspirations/aims of the policies.

Landscape Value

1.15 Establishing the value of the potentially affected landscape at the baseline stage will help inform later judgements about the Scale of Effects. GLVIA3 states the following:

> *"Value can apply to areas of landscape as a whole or to the individual elements, features and aesthetic or perceptual dimensions which contribute to the character of a landscape. Landscapes or their component parts may be valued at the community, local, national or international levels"*

1.16 Landscape value is defined as: *"The relative value or importance attached to different landscapes by society on account of their landscape qualities"* (Glossary, Technical Guidance Note (TGN) 02-21: Assessing Landscape Value Outside National Designations).

1.17 Existing national level landscape designations relating to the Sites and their surrounds are identified if applicable (i.e. National Parks, Areas of Outstanding Natural Beauty) as well as other national level 'landscape related' designations (i.e. Listed Buildings, Registered Parks and Gardens). In addition, regional and/or locally based indicators of landscape value are established that may include Areas of Great Landscape Value (AGLV), Tree Preservation Orders or Conservation Areas. The presence of long distance footpaths or National Trails can also indicate landscape value in an area.

Landscape Quality

1.18 GLVIA 3 defines landscape quality as *"A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements."*

Visibility Study of the Sites

1.19 The visibility of the Sites is considered through reference to Ordnance Survey plans, aerial imagery and/or fieldwork to help determine the visual baseline. The initial desktop consideration of the Sites and their surrounds covered an area of approximately 1.5km radius, which was verified during fieldwork. Close range views were judged to be within 100m of the Sites, mid-range from 100m – 300m and long range views at a distance of over 300km.

1.20 Ten viewpoints have been included in the assessment and consideration of these includes potential effects on different visual receptor types such as residents, users of PRoW and road users, as necessary. Photographic images included as part of this section (refer to Figures 2 - 21) were taken using a Canon EOS 5D MkII with a fixed 50mm lens. Panoramic context views were stitched together using PT Gui Pro software.

1.21 Two Photomontage Viewpoints A and B have also been included in the assessment at Annex A to provide further information on which to base the assessment of visual effects. The document also includes a technical methodology explaining how the photomontages were produced and how they are presented.

Assessment of Landscape and Visual Effects

Describing Landscape Effects

1.22 Once the baseline information has been gathered, this can be combined with understanding of the Proposed Development to identify and describe the potential effects on the 'landscape receptors' (i.e. local and wider level landscape character and key characteristics as defined in Landscape Character Assessments, individual features such as hedgerows or woodlands, PRoW and/or aesthetic/perceptual aspects). Effects on the receptors at different stages of the development are important to identify, as are the types of effects if relevant (i.e. direct/indirect, secondary, cumulative, short/medium/long term, temporary/permanent, beneficial/adverse).

1.23 GLVIA3 states that effects are likely to include:

- "Change *in and/or partial or complete loss of elements, features or aesthetic or perceptual aspects that contribute to the character and distinctiveness of the landscape;*
- *Addition of new elements or features that will influence the character and distinctiveness of the landscape; and*
- *Combined effects of these changes on overall character*"

Describing Visual Effects

1.24 As with landscape effects, once the baseline information has been gathered, this can be combined with understanding of the Proposed Development to identify and describe the potential effects on the visual receptors. Again, it is important to identify the visual effects at different stages of the development and the type of effect that would be experienced by the receptor/s.

1.25 GLVIA3 states the following issues regarding effects on views should be considered, (though there may be others):

- **"***The nature of the view of the development, for example a full or partial view or only a glimpse;*
- *The proportion of the development or particular features that would be visible (such as full, most, part, none);*
- *The distance of the viewpoint from the development and whether the viewer would focus on the development due to its scale and proximity or whether the development would be only a small, minor element in a panoramic view;*
- *Whether the view is stationary or transient or one of a sequence of views, as from a footpath or moving vehicle; and*
- *The nature of the changes, which must be judged individually for each project, but may include, for example, changes in the existing skyline profile, creation of a new visual focus in the view, introduction of new man-made objects, changes in visual simplicity or complexity, alteration of visual scale and change to the degree of visual enclosure".*

1.26 In addition, seasonal differences in effects arising from the varying degree of screening and/or filtering of views by vegetation at different times of the year need to be considered.

Assessing the Scale of Landscape and Visual Effects

Introduction

1.27 Separate judgements about the Sensitivity of the landscape and visual receptors to the Proposed Development and the Magnitude of Effects need to be combined to allow a final judgement to be made about the Scale of Landscape and Visual Effects and, from that, whether any particular effects are considered high/important enough to be 'Significant' or not.

1.28 The sub-section below outlines the methodology for assessing Sensitivity of both landscape and visual receptors while the subsequent sub-section considers assessment of Magnitude of Landscape and Visual Effects. The methodology for assessing the Scale of Landscape and Visual Effects is then presented.

Sensitivity of Landscape Receptors to the Proposed Development

1.29 As defined in GLVIA3, Sensitivity of landscape receptors is assessed by taking the following factors into account:

- "*Susceptibility … of the landscape to change – the ability of the landscape receptor (overall character, individual feature or particular aesthetic/perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies; and*
- *Value of the landscape receptor/s – established during the baseline study, covering the value of the Landscape Character Types or Areas based on review of designations or, in their absence, judgements based on criteria that can be used to establish landscape value. In addition, the value of individual contributors to landscape character such as key elements or features within the landscape, or notable aesthetic/perceptual qualities".*

1.30 It is important to note that sensitivity of the landscape resource should not be recorded as part of the baseline but should be considered as part of the assessment of effects. This is because landscape effects are particular to both the specific landscape in question and the specific nature of the Proposed Development. Table M1 below sets out and explains criteria used to assess Sensitivity of the landscape:

Table M1: Explanation of Rating Criteria for Sensitivity of Landscape Receptors

Sensitivity Rating	Typical Criteria	
	Susceptibility of Landscape to Change	**Value of Landscape Receptors**
High	Overall Character: A landscape of particularly distinctive character or highly valued for its scenic quality or rarity. A landscape where the intrinsic character may be susceptible to slight changes Individual Elements or Features: Unique or rare landscape features are evident within the study area and if removed or altered the effect would be immediately noticeable. Aesthetic or Perceptual Aspects: The landscape, or parts of it, has a particularly notable or special quality, especially in terms of wildness and/or tranquillity	Designations Designated landscapes such as World Heritage Sites, National Parks, AONB's, AGLV's. Or undesignated but value perhaps expressed through existing landscape assessment, planning policy, non-official publications or through demonstrable use by the public Other Criteria Indicating Value High levels of tranquillity, remoteness/wildness, scenic beauty High local consensus on value of the landscape Acknowledged cultural associations related to the landscape Landscape or parts of it well used for conservation interests
Medium	Overall Character A landscape of reasonably valued characteristics of medium importance, scenic quality or rarity. A landscape that may be reasonably tolerant to moderate changes without adversely affecting its intrinsic character Individual Elements or Features: Reasonable quality landscape features are evident within the study area and if removed or altered the effect may be noticeable Aesthetic or Perceptual Aspects: The landscape has a reasonable aesthetic and perceptual quality, but is not especially wild and/or tranquil	Designations Landscapes which are not considered as having a particularly notable quality requiring designation or other form of expression but that nevertheless may be reasonably valued locally for recreation and amenity Other Criteria Indicating Value Moderate levels of tranquillity, remoteness/wildness, scenic beauty Possibly some local consensus on value of the landscape Possibly some cultural associations related to the landscape Landscape may be used for some conservation interests
Low	Overall Character A landscape of lower importance which is not particularly valued for its quality, scenic beauty or rarity or is degraded and is tolerant of change which would likely improve its character Individual Elements or Features: Few or no landscape features of particular note or quality are evident within the Sites and if removed or	Designations Areas identified as having limited or no redeeming features or being degraded, possibly identified for improvement or even recovery through planning policy Other Criteria Indicating Value Low levels of tranquillity, remoteness/wildness, scenic beauty

	altered the effect is not likely to be noticed Aesthetic or Perceptual Aspects: The landscape does not have a particularly notable or special aesthetic quality and is not considered wild and/or tranquil	No or very small local consensus on value of the landscape No cultural associations related to the landscape Landscape not used for some conservation interests

Sensitivity of Visual Receptors to the Proposed Development

1.31 As defined in GLVIA3, Sensitivity of visual receptors (person or group of people likely to be affected at a specific viewpoint) is assessed by taking the following factors into account:

- "*Susceptibility of visual receptors to change – This is mainly a function of the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations. Visual receptors most susceptible to change are likely to include:*
- *Residents at home;*
- *People, whether residents or visitors, who are engaged in outdoor recreation, including the use of public rights of way, whose attention or interest is likely to be focused on the landscape and on particular views;*
- *Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;*
- *Communities where views contribute to the landscape setting enjoyed by residents in the area;*
- *Travellers on recognised scenic routes where awareness of views is likely to be particularly high*

Visual receptors likely to be less sensitive to change include:

- *Travellers on road, rail or other transport routes where the main reason for the journey is to get from A to B with relatively minor interest in the surrounding landscape;*
- *People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape;*
- *People at their place of work whose attention may be focused on their work or activity, not on their surroundings, and where the setting is not important to the quality of working life (although this is not always the case); and*

- *<u>Value attached to views</u> – judgements should also be made about the value attached to the views experienced. This should take account of:*

- *Recognition of the value attached to particular views, for example in relation to heritage assets or through planning designations;*
- *Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyments (i.e. car parks, interpretation boards etc.) and references to them in literature or art".*

1.32 Table M2 below sets out and explains criteria used to assess Sensitivity of visual receptors:

Table M2: Explanation of Rating Criteria for Sensitivity of Visual Receptors

Sensitivity Rating	**Typical Criteria**	
	Susceptibility of Visual Receptors to Change	**Value Attached to Views**
High	Residents where direct views from rooms/gardens can be gained; Communities where views contribute to the landscape setting enjoyed by residents in the area; and People using recognised National Trails or Long Distance Footpaths whose attention or interest is largely focused on the landscape and/or on particular views	Views within and towards designated landscapes such as World Heritage Sites, National Parks, AONB's or AGLV's. Or undesignated but value perhaps expressed through existing landscape assessment, planning policy, non-official publications or through demonstrable use by the public. Particularly good views identified by tourist literature, guidebooks, the presence of viewpoints/seating, car parks, interpretation boards. Particularly good or recognised views from National Trails or Long Distance Footpaths
Medium	Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience; Travellers on recognised scenic routes where awareness of views is likely to be reasonably high; and Public Rights of Way with reasonable landscape interest used primarily for travelling between locations and general outdoor recreation	Views within landscapes which are not considered as having a particularly notable quality requiring designation or other form of expression but that nevertheless may be reasonably valued locally for recreation and amenity.
Low	People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape;	Views within areas identified as degraded or having limited redeeming features. Areas where tolerance to change is reasonably or very high

	Travellers on road, rail or other transport routes where the main reason for the journey is to get from A to B with no or little interest in the surrounding landscape; and People at their place of work whose attention is focused on their work or activity, not on their surroundings, and where the setting is of little importance to the quality of working life.	

Magnitude of Landscape Effects

1.33 As defined in GLVIA3, each effect on landscape receptors should be assessed in terms of the following factors, where relevant:

- *<u>Size or scale</u> – how these would affect change in the landscape that is likely to be experienced as a result of each effect. Judgements should take account of the following:*
- *The extent and proportion of existing landscape elements that would be lost and the contribution of that element to the character of the landscape;*
- *The degree to which aesthetic/perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones;*
- *Whether the effect changes the key characteristics of the landscape, which are critical to its distinctive character.*
- *<u>Geographical extent</u> – distinct from size or scale of the effect, in general effects may have an influence at the following scales: site level, immediate setting of the Sites, landscape type/character area or on a larger (i.e. multi LCA) scale.*
- *<u>Duration and reversibility of the landscape effects</u> – duration can be judged on a scale ranging from short to medium to long term (for instance), and then whether the various effects identified are temporary or permanent. If temporary, are the effects partially or fully reversible? The timescales involved and reasons why they have been selected also need to be stated".*

1.34 Table M3 below sets out and explains criteria used to assess Magnitude of Landscape Effects:

Table M3: Explanation of Rating Criteria for Magnitude of Landscape Effects

Magnitude of Effects Rating	Typical Criteria			
	Size or Scale of the Landscape Effects	**Geographical Extent of the Landscape Effects**	**Duration of the Landscape Effects**	**Reversibility of the Landscape Effects**
Large	Total loss of or major alteration to key elements/ features/characteristics of the baseline, i.e. pre-development landscape and/ or introduction of elements considered to be totally uncharacteristic when set within the attributes of the receiving landscape	Effects noticeable within Sites, immediate/wider surrounds and possibly across the wider LCA area/multi LCA area	Long term (6+ years) or permanent	Effects long term or permanent and irreversible
Medium	Partial loss of or alteration to key elements/ features/characteristics of the baseline, i.e. pre-development landscape and/ or introduction of elements that may be prominent but may not be substantially uncharacteristic when set within the attributes of the receiving landscape	Effects noticeable within Sites, immediate/wider surrounds	Medium term (3 – 6 years)	Effects temporary (medium term) and partially reversible
Small	Minor loss of or alteration to key elements/ features/characteristics of the baseline, i.e. pre-development landscape and/ or introduction of elements that are not noticeably uncharacteristic with the surrounding landscape	Effects noticeable within the Sites only and possibly immediate surrounds to a small extent	Short term (6 months – 3 years)	Effects temporary (short term) and fully reversible
Negligible/No Change	Very minor/barely perceptible loss of or alteration to key elements/ features/characteristics of the baseline, i.e. pre-development landscape and/ or introduction of elements that are largely characteristic with the surrounding landscape	Effects noticeable within the Sites only, or distinct parts of it	Very short term (0 – 6 months)	Effects temporary (very short term) and fully reversible

Magnitude of Visual Effects

1.35 As defined in GLVIA3, each of the visual effects identified should be evaluated in terms of the following factors, where relevant:

- *Size or scale – judging the magnitude of the visual effects identified needs to take account of:*
- *The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;*
- *The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass; line, height, colour and texture;*
- *The nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses'.*
- *Geographical extent – this will vary with different viewpoints and is likely to reflect the angle of view in relation to the main activity of the receptor, the distance of the viewpoint from the proposed development and the extent of the area over which the changes would be visible.*
- *Duration and reversibility of visual effects – as with landscape effects, these are separate but linked criteria. Similar considerations apply to visual as well as landscape effects.*

1.36 Table M4 below sets out and explains criteria used to assess Magnitude of Visual Effects:

Table M4: Explanation of Rating Criteria for Magnitude of Visual Effects

Magnitude of Effects Rating	Typical Criteria			
	Size or Scale of the Visual Effects	**Geographical Extent of the Visual Effects**	**Duration of the Visual Effects**	**Reversibility of the Visual Effects**
Large	Where the proposals would be readily apparent due to loss of and/or addition of features to the existing view, which would be intrusive; Large proportion of the view occupied by the proposed development; High degree of contrast between the development and the existing landscape features/character	Direct angle of view for the visual receptor/s; Receptor close to the development (within 200m); Wide extent of area over which the changes would be visible	Long term (6+ years)	Effects long term ort permanent and irreversible
Medium	Where proposals would form a visible and recognisable new development but where it is not unduly intrusive within the overall view; Medium proportion of the view occupied by the proposed development; Medium degree of contrast between the development and the existing landscape features/character	Somewhat offset angle of view for the visual receptor/s; Receptor mid distant from the development (200m – 500m); Average extent of area over which the changes would be visible	Medium term (3 – 6 years)	Effects temporary (medium term) and partially reversible
Small	Where proposals constitute only a minor component of the wider view, which the casual observer could miss or where awareness does not overly affect the quality/amenity of the view; Low proportion of the view occupied by the proposed development; Low degree of contrast between the development and the	Indirect angle of view for the visual receptor/s; Receptor far from the development (500m – 1km); Small extent of area over which the changes would be visible	Short term (6 months – 3 years)	Effects temporary (short term) and fully reversible

	existing landscape features/character			
Negligible/None	Where proposals constitute only a barely visible component of the wider view, which the casual observer is likely to miss or where awareness hardly affects the quality/amenity of the view; Very small proportion of the view occupied by the proposed development; Barely any contrast between the development and the existing landscape features/character	Indirect angle of view for the visual receptor/s; Receptor very far from the development (over 1km); Very small extent of area over which the changes would be visible	Very Short term (0 - 6 months)	Effects temporary (very short term) and fully reversible

Assessing Scale of Landscape and Visual Effects

1.37 As mentioned above, Scale of Landscape and Visual Effects is assessed by combining Sensitivity to the Proposed Development with Magnitude of Effects to allow a final judgement to be made regarding Scale of Effects and, from that, whether the level of a particular effect is 'Significant' or not.

1.38 Table M5 below provides an indicative matrix to guide what Scale of Effects is likely to occur when ratings for Sensitivity and Magnitude of Effects are combined, although professional judgement supported by written explanation is also required to provide a rationale for the Scale level selected. Ratings in red bold (Major or Moderate – Major) are considered Significant and are likely to be a material consideration in the decision-making process.

Table M5: Matrix to Indicate Scale of Landscape or Visual Effects

			Sensitivity to the Proposed Development		
			High	**Medium**	**Low**
Magnitude of Effects	**Adverse**	**Large**	**Major**	**Moderate – Major**	Moderate
		Medium	**Moderate – Major**	Moderate	Minor - Moderate
		Small	Moderate	Minor - Moderate	Minor
	Negligible/No Change		Negligible/ None	Negligible/ None	Negligible/ None
	Beneficial	**Large**	**Major**	**Moderate – Major**	Moderate
		Medium	**Moderate – Major**	Moderate	Minor - Moderate
		Small	Moderate	Minor - Moderate	Minor

1.39 Table M6 below sets out and explains what each Scale of Effects level indicates for both landscape and visual effects, although as stated above, further explanation is usually necessary in order to clarify why the particular rating has been selected. It is important to note that Scale of Effects can be adverse or beneficial, which should be stated where necessary.

Table M6: Explanation of Rating Criteria for Scale of Landscape or Visual Effects

Scale of Effects Level	Landscape Effects	Visual Effects	Importance in Decision Making Process
Major Adverse	Changes that would result in a considerable and distinct deterioration of the existing landscape character and/or features	Changes which are considered to result in a considerable and distinct deterioration in the existing view	These effects are considered to be SIGNIFICANT. They are likely to be material in the decision-making process
	Changes that would result in a noticeable though not defining deterioration of the existing landscape character and/or features	Changes which are considered to result in a noticeable though not defining deterioration in the existing view	These effects may be reasonably important or notable but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effects on a particular receptor
Minor Adverse	Changes that would result in a slight deterioration of the existing landscape character and/or features	Changes which are considered to result in a slight deterioration in the existing view	These effects may be raised as local factors. They are unlikely to be of importance in the decision-making process
Negligible/ None	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error	These effects are not considered to be notable or important in the decision-making process
Major Beneficial	Changes that would result in a considerable and distinct improvement of the existing landscape character and features	Changes which are considered to result in a considerable and distinct improvement in the existing view	These effects are considered to be SIGNIFICANT. They are likely to be material in the decision-making process
	Changes that would result in a noticeable though not defining improvement of the existing landscape character and features	Changes which are considered to result in a noticeable though not defining improvement in the existing view	These effects may be reasonably important or notable but are not likely to be key decision-making factors.
Minor Beneficial	Changes that would result in a slight improvement of the existing landscape character and features	Changes which are considered to result in a slight improvement in the existing view	These effects may be raised as local factors. They are unlikely to be of importance in the decision-making process

Methodology for Assessment of Cumulative Effects

1.40 It is proposed that the cumulative assessment section utilizes the same baseline 'Sensitivity' ratings for landscape character and visual receptors as included within the LVIA. However, in order to place a value on the Cumulative Magnitude of additional effects on landscape receptors or visual amenity caused by the Proposed Development in conjunction with the

existing ENRMF landfill and other related developments within the surrounding land (i.e. the cumulative changes), a new set of Cumulative Magnitude rating criteria is required, as in Table M7 below.

1.41 Table M8 further below sets out and explains what each Scale of Cumulative Effects rating indicates for landscape receptors and visual amenity. Scale of Cumulative Effects is rated by combining Sensitivity to the Proposed Development with Magnitude of Cumulative Effects, using the same indicative matrix included in the main LVIA Methodology. However, as stated above, further explanation is usually needed in order to clarify why the particular rating has been selected.

1.42 The essential purpose of these criteria ratings is to assess the Scale of cumulative/combined effects caused by the addition of the Proposed Development to the existing landscape. The purpose is not to assess the effects of the Proposed Development in isolation – that information has already been included elsewhere within the LVIA and is subtly different from this section.

Table M7: Matrix to Indicate Magnitude of Cumulative Landscape and Visual Effects

Cumulative Magnitude of Effects	Landscape Rating Criteria	Visual Rating Criteria
Large	Where the additional effects on landscape features or character caused by the Proposed Development in combination with the existing baseline would be very noticeable/dominant and on a reasonably large scale	Where the additional visual change caused by the Proposed Development in combination with the existing baseline would be apparent or very apparent and would affect the overall impression of the view
Medium	Where the additional effects on landscape features or character caused by the Proposed Development in combination with the existing baseline would be noticeable but not dominant	Where the additional visual change caused by the Proposed Development in combination with the existing baseline may be apparent but would not be unduly intrusive within the overall view
Small	Where the additional effects on landscape features or character caused by the Proposed Development in combination with the existing baseline would be relatively small and not immediately apparent	Where the additional visual change caused by the Proposed Development in combination with the existing baseline would only constitute a minor change to the view which the casual observer might miss altogether

Negligible/ No Change	Where the additional effects on landscape features or character caused by the Proposed Development in combination with the existing baseline would be very small and barely perceptible	Where the additional visual change caused by the Proposed Development in combination with the existing baseline is likely to be missed altogether due to distance, topography or intervening elements

Table M8: Explanation of Scale of Cumulative Landscape and Visual Effects

Scale of Cumulative Effects	Landscape Rating Explanation	Visual Rating Explanation
Major	The combined effects on landscape features or character caused by the addition of the proposed development to the baseline situation would be at variance with many key characteristics of a highly valued and high quality landscape	The combined visual impact caused by the addition of the proposed development to the baseline situation would be immediately apparent and possibly dominates the view
Moderate - Major	The combined effects on landscape features or character caused by the addition of the proposed development to the baseline situation would be relatively large, with many long-term effects on medium sensitivity landscape or smaller, short tern effects on highly sensitive landscape	The combined visual impact caused by the addition of the proposed development to the baseline situation would be somewhat apparent and has a negative impact on the view
Moderate	The combined effects on landscape features or character caused by the addition of the proposed development to the baseline situation would be reasonably noticeable. There would be some adverse changes to medium sensitivity landscape or small, temporary changes to highly sensitive landscape	The combined visual impact caused by the addition of the proposed development to the baseline situation may be apparent but would not adversely affect the view to any great extent
Minor - Moderate	The combined effects on landscape features or character caused by the addition of the proposed development to the baseline situation would be small	The combined visual impact caused by the addition of the proposed development to the baseline situation would be limited and may be missed by the casual observer
Minor/ Negligible	The combined effects on landscape features or character caused by the addition of the proposed development to the baseline situation would be very small	The combined visual impact caused by the addition of the proposed development to the baseline situation is likely to be missed

		altogether and would be barely perceptible