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INTRODUCTION

8.1 This chapter of the ES assesses the potential landscape and visual effects arising from the proposed development (refer to Chapter 3 above). The chapter is divided into the following sections:

- Scope and definitions;
- Methodology;
- Landscape planning context;
- Summary of the development proposal, as relevant to this topic;
- Landscape effects;
- Visual effects; and
- Conclusion.

SCOPE AND DEFINITIONS

8.2 Paragraph 1.1 of the Guidelines for Landscape and Visual Impact Assessment (3rd Edition), published by Landscape Institute and Institute of Environmental Management and Assessment (hereafter referred to as "*GLVIA 3*") states that *"Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity".*

8.3 Paragraph 5.1 of GLVIA3 describes how landscape effects are concerned with *"how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character".*

8.4 Allied to this, paragraph 6.1 of GLVIA3 describes how visual effects are concerned with *"assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements".*

8.5 Thus, this assessment deals separately with each of these effects, although where relevant and appropriate, cross references may be made to the same features or elements where they are relevant to both assessments.

METHODOLOGY

8.6 The main source of guidance for this chapter of the ES has been GLVIA3 (*op cit*). Table 3.1 of GLVIA3 summarises the main components of the impact assessment process, with Figure 3.1 in GLVIA3 illustrating the process. For ease of reference, the core components of LVIA identified in GLVIA3 are reproduced in Table 8-1 below.

Table 8-1
Core Components of LVIA (taken from GLVIA3)

Component of EIA Process	Brief description of action in this part of the process
Project description / specification	Provides a description of the proposed development for the purpose of the assessment, identifying the main features of the proposals and establishing parameters such as maximum extent of the development or sizes of the elements. Normally includes description of any alternatives considered.
Baseline Studies	Establishes the existing nature of the landscape and visual environment in the study area, including any relevant changes likely to occur independently of the development proposals. Includes information on the value attached to the different environmental resources.
Identification and description of effects	Systematically identifies and describes the effects that are likely to occur, including whether they are adverse or beneficial.
Assessing the significance of effects	Systematically and transparently assess the likely significance of effects identified.
Mitigation	Makes proposals for measures designed to avoid/prevent, reduce or offset (or compensate for) any significant negative (adverse) effect.

8.7 Paragraph 3.23 of GLVIA3 describes how "*The EIA Directive and UK Regulations refer to projects likely to have significant effects on the environment. This means that identifying and describing the effects of a project is not enough in itself. They must also be assessed for their significance. This is a key part of the LVIA process and is an evidence-based process combined with professional judgement. It is important that the basis of such judgements is transparent and understandable, so that the underlying assumptions and reasoning can be understood by others*."

8.8 Figure 3.5 of GLVIA3 illustrates the step-by-step process for assessing the significance of effects based on the combination of the nature of the receptor likely to be affected (sensitivity) and the nature of effect likely to occur (magnitude).

8.9 As described in paragraph 3.26 of GLVIA3, assessment of sensitivity will incorporate judgements about the:

- *Susceptibility of the receptor to the type of change arising from the specific proposal; and*
- *The value attached to the receptor.*

8.10 As described in paragraph 3.26 of GLVIA3, assessment of magnitude will incorporate judgements about the:

- *The size and scale of the effect – for example whether there is a complete loss of a particular element of the landscape or a minor change;*
- *The geographical extent of the area that will be affected; and*
- *The duration of the effect and its reversibility.*

8.11 The criteria used for assessing sensitivity and magnitude of landscape and visual effects in this assessment (including cumulative aspects and the nature of effect) are set out in Appendix 8/1 to this chapter.

8.12 Paragraph 3.28 of GLVIA3, then describes how the separate judgements on the individual criteria of sensitivity and magnitude should be combined to provide an overall judgement of significance.

8.13 In addition to the detailed and narrative text describing how the overall judgements of significance have been determined, this assessment also uses the matrix shown in Table 8-2 below.

8.14 Both Major effects and Moderate/Major effects are regarded as "*significant*" in the context of the EIA Regulations (refer to Chapter 1 above). This process is not a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods of working outlined in this section, is in the end a matter of professional judgement of the qualified landscape architect.

Table 8-2
Summary of Combinations for Judging Significance of Landscape and Visual Effects

Sensitivity / Magnitude	Negligible	Low	Medium	High
Negligible	Negligible Effect	Negligible / Slight Effect	Slight Effect	Slight / Moderate Effect
Low	Negligible / Slight Effect	Slight Effect	Slight / Moderate Effect	Moderate Effect
Medium	Slight Effect	Slight / Moderate Effect	Moderate Effect	**Moderate / Major Effect**
High	Slight / Moderate Effect	Moderate Effect	**Moderate / Major Effect**	**Major Effect**

Note: **Bold** denotes a significant effect

8.15 The nature of the change resulting from the proposed development may also be described as beneficial (i.e. providing enhancement or improvement to the landscape), adverse (i.e. resulting in losses of characteristic elements or degradation/fragmentation of the landscape resource), or neutral (i.e. effects are neither adverse nor beneficial, or impacts may be balanced between adverse and beneficial).

8.16 Initially a desktop study was undertaken to review the relevant publications, maps and plans relating to the proposed development. This was followed by fieldwork to various parts of the application site and the surrounding study area in November 2015.

8.17 During the site visits, the weather conditions were variable, but visibility was generally moderate (between 4-10km) and considered suitable for assessing all views for this assessment.

8.18 Use has been made of 3D computer models to generate zones of theoretical visibility ('ZTVs'), identify potential viewpoints and create perspective views, which in turn have been used to inform the assessment of magnitude of change for individual viewpoints.

8.19 Photographs provide an aid to assessing landscape and visual effects. The photographs illustrate views under the particular conditions prevailing at the time of carrying out the viewpoint photography. Effects vary depending on light and weather conditions and also the time of day and time of year. Accordingly, this assessment endeavours to assess "worst case" conditions within the written assessment.

8.20 No technical difficulties were encountered in assessing the landscape and visual impacts of the proposed development, although the weather conditions during the site visit were variable as noted above.

Consultation

8.21 As part of a formal 'scoping' process (refer to chapter 1), SLR submitted a scoping request (June 2015) to the local planning authority, which identified visual impact and landscape character as topics, potentially with environmental effects that would be considered as part of a subsequent ES.

8.22 The Landscape Report for "Hatfield Aerodrome, Scoping Opinion" from Hertfordshire County Council's Landscape Officer, Natural Historic and Built Environment Advisory Team, dated 11th August 2015, supported the proposed inclusion of an LVIA and requested *inter alia*:

- landscape baseline and the relevant local landscape character areas;
- visual baseline and production of a Zone of Theoretical Visibility (ZTV) and fieldwork to identify the area from which the development would be visible;
- a "landscape strategy" to demonstrate the mitigation of the effects of the development throughout the project lifecycle, including advance planting; and
- the cumulative effects of the site restoration should be considered alongside neighbouring schemes (e.g. Hatfield Quarry to the north).

LANDSCAPE PLANNING CONTEXT

8.23 Full details of the relevant planning policy context of the application site are described in Chapter 4 of this ES.

8.24 A summary of relevant landscape policies from the National Planning Policy Framework (2012), Hertfordshire Minerals Local Plan Review 2002-2016 (adopted 2007), Waste Core Strategy and Development Management Policies Document (adopted November 2012), City and District of St Albans District Local Plan Review (adopted 1994) and Welwyn Hatfield District Plan (adopted 2005) is set out in Appendix 8/2.

8.25 In summary, this landscape planning policy context requires consideration of good design as a key aspect of sustainable development, both into its siting and landscaping treatments and ensure that any development is not detrimental to the character and appearance of the site and its surrounding environment. There is also particular emphasis placed on the protection of Green Belts.

8.26 The application site is located within a Green Belt and these, along with any other designations which are of particular relevance to this assessment, are examined below, under the consideration of 'landscape value'.

8.27 The application site covers the south-western part of the allocated site referred to as Preferred Area No.1 (Land at BAe) on Inset Map No 6 in Hertfordshire Minerals Local Plan Review 2002-2016. This map also shows Hatfield Quarry covering land immediately to the north of the application site and Suttons Farm extending for a further 2km.

8.28 Preferred Areas are defined as "*parcels of land likely to be required to make up the balance of the County's contribution to the regional apportionment for the plan period (to 2016) and the landbank period beyond.*"

8.29 Hatfield Quarry is an active sand and gravel site immediately to the north of the application site. This other site is currently due to close in 2020 when the planning permission expires.

THE DEVELOPMENT PROPOSAL

8.30 Full details of the proposed development are described in Chapter 3 of this ES and the following items have been examined in detail due to their specific landscape and visual implications:

- winning and working, together with processing for sale, of some 8Mt of sand and gravel over a period of around 30 years;
- a new access onto the A1057, west of Popefield Farm; and
- the importation of low permeability inert material to infill the mineral workings to facilitate the restoration of the site to a beneficial after use, combining recreation and nature consideration.

Timescales and Permanency of Development

8.31 GLVIA3 refers to effects that last for 10 to 25 years as being long term. In view of this the proposed development as a whole is considered to be long term. This includes any advance planting undertaken at the outset around the site boundaries, but also the access road, plant site area and any other ancillary elements that would be required over the project lifecycle.

8.32 However, the progressive nature of the development means that certain effects may be shorter in duration, such as vehicle movements on the upper soils and overburden layers; formation of the perimeter screening bunds; or the working within individual phases themselves. For example, vegetation clearance in advance of and the stripping, working and infilling of the later phases (such as E and F) would remain in their existing condition until the second half of the development.

8.33 GLVIA3 refers to effects that last for 0 to 5 years as being short term (i.e. soil stripping, construction work) and 5 to 10 years as medium term (i.e. potentially working operations in any given phase).

8.34 The proposed final restoration scheme would then be a permanent feature, although this again would be progressively completed.

Design Development and Built-in Mitigation

8.35 The proposed development incorporates design evolution and built-in mitigation devised as part of project team discussions and impact assessment, as well as other consultations.

8.36 The landscape strategy for the proposed development has the following elements:

- hedgerow management, to allow existing hedgerows around the perimeter of the site to grow out / in height (cutting sides only);
- infill planting of hedgerows around site using locally native species to increase landscape structure, enclosure / screening and habitat connectivity;
- a landscape buffer would be retained around the site perimeter, including a corridor to the north and east to accommodate the diverted Nast and offset to Home Covert, a corridor to the south along the road and Popefield Farm, to include a screening bund and to the west to include the diverted footpath and access road. Permissive paths would also be incorporated into these corridors to provide access from Ellenbrook Fields and elsewhere;
- use of temporary soil storage to provide screening mounds. These would be grass seeded immediately following construction to ensure visual assimilation, as afar as possible;
- positioning of the plant site to the north of the application site away from the main Hatfield Road and local residential properties and use of muted and recessive colour scheme for the plant to minimise visual intrusion and potential adverse effects on local views;

- inclusion of landscaping treatments to the new access, fence and signs (grass seeding of verge and re-planting to compensate for any removal);
- progressive working, backfilling and restoration to minimise overall disturbance at any single point in time. This includes phased removal of hedgerows (such as along western end of the site) and stripping of grassland and soils and reinstatement of areas as soon as is practical (such as in the south-eastern part of the site in Phase A); and
- final restoration of the site, utilising backfill material to reinstate levels similar to existing. The access road and a small parking area would be retained for recreational purposes.

Potential Sources of Landscape and Visual Effect

8.37 The main landscape and visual elements of the proposed development include the following:

- clearance of existing vegetation and landcover and diversion of rights of way and areas of permissive access;
- erection of new access, plant and buildings within the application site;
- mineral stockpiles, including surge piles to allow working on a campaign basis;
- new screen mounds, tree and shrub and planting, buffer corridors and diverted footpaths around the periphery of the application site;
- movement of plant, machinery and vehicles within, to and from the application site;
- progressive working of the mineral extraction areas, engineering and backfilling of the voids; and
- progressive and final restoration.

8.38 There are potential direct effects upon landscape character, elements and features within the application site itself and then potential effects upon landscape character and visual amenity of offsite receptors in the immediate surrounding area. The spatial extent of landscape and visual effects are principally local.

Potential Indirect Effects

8.39 Typically, the main potential indirect impact associated with minerals and waste management projects relates to traffic generated from the development, as this would have a potential visual impact for other users of the local communication network, and a general impact on the scenic quality of local views.

8.40 The A1057 is a busy road, near to the edge of Hatfield and the Transport chapter within this ES identified that it currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 mixed size vehicles.

8.41 A total of 194 vehicle movements would be generated by the proposed development of which 174 would be classified as HGV. The link impact assessment has demonstrated that the likely increase would be 1.3% in

terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced and is therefore unlikely to be perceptible away from the site access junction; therefore, the proposals do not represent an additional significant indirect visual impact in this respect. Viewpoints 4 and 5 have been included to represent views along this road corridor.

Lighting

8.42 The operations would require some artificial lighting for health, safety and security requirements. However, lighting of roadways and footpaths would be localised and temporary and designed to ensure that there was no 'glare' or light trespass. In this respect, regard would be given to guidance provided by the Institution of Lighting Engineers (Guidance Notes for the Reduction of Obtrusive Light (GN01), 2005) and the former Good Planning Guide (GPG) 10 "*Lighting in the Countryside*". The proposals are not anticipated to represent an additional significant visual impact in this respect.

LANDSCAPE EFFECTS

8.43 A study area of up to 5km surrounding the application site has been adopted for this assessment, based on interpretation of the Zone of Theoretical Visibility (ZTV) maps and experience of similar projects.

Landscape Baseline

8.44 Baseline conditions for the application site and surrounding study area have been assessed and described below.

Character of the landscape

8.45 Appendix 8/3 of this chapter presents a summary of the relevant published assessments at national and local authority scales:

- the application site lies within National Character Area NCA 111 – Northern Thames Basin; and
- The Welwyn Hatfield Landscape Character Assessment (Hertfordshire Landscape Strategy) published by Welwyn Hatfield Council and Hertfordshire Council in April 2005 describes the site as located within "Area 31 De Havilland Plain".

8.46 A review of the landscape attributes at the application site and surrounding area are reported in detail in Appendix 8/3.

8.47 The analysis of existing landscape attributes has concluded that the study area is generally consistent with the published key characteristics for "Area 31 De Havilland Plain" as described in The Welwyn Hatfield Landscape Character Assessment (*op cit*).

8.48 At a local level, the application site can be classified as "medium to large-scale greenspace plain/former aerodrome".

Trends and change

8.49 The study area has been subject to various past land use influences, such as the original establishment of Hatfield Aerodrome and its subsequent abandonment.

8.50 In the absence of this development it is assumed that the application site would continue in its current state, being used as informal recreational greenspace and promoted to local residents. However the promotional literature specifically references potential mineral extraction and the site is allocated in the MLP for such uses.

8.51 The application site forms part of Ellenbrook Fields which has been "*opened up to the public for your enjoyment*" by the landowners; it is consequently well used by local walkers and cyclists for informal recreation. The interpretation boards around the site describe how *"In the future the land is expected to contribute to the further development of Hertfordshire, through the extraction of some of the land's valuable mineral resources. This will be in response to the County Mineral Local Plan which has identified the site for the extraction of much needed sand and gravel. The current management of the land will continue and is intended to provide a public benefit throughout the process."*

8.52 It is assumed that the adjacent quarrying areas at Hatfield Quarry would be completely worked out and restored within the next 5 years, as described above. Analysis of relatively recent aerial photography has identified that much of the mineral extraction areas have been replaced by restored areas over the past 10 years.

8.53 NCA 111 – Northern Thames Basin describes *inter alia* the following key drivers of change:

- *"The increased pressure for infrastructure development around London is going to continue to grow and create difficulties in preserving the London green belt. Care must be taken so that important habitats, geological, archaeological features and recreational greenspace is not destroyed in the process and the character of the area adversely affected;* and
- *There are many existing mineral sites in the area and the demand for building material is large so this creates industrial opportunities. However, priority habitats need to be preserved to maintain the geodiverse and biodiverse nature of the area. There are also opportunities to return abandoned mineral sites back to the habitats that were previously found there and expand the biodiversity of the area…"*

Landscape Value

8.54 Table 8-3 provides summary analysis of the criteria and factors that influence landscape value (taken from GLVIA3, Box 5.1 *op cit*), as they apply to application site and the wider study area.

8.55 Overall the landscape value of the application site and immediate surrounding mixed land cover (of grassland, woodland, farmland, mineral workings and built development) is considered to be of local value. Although within the Green Belt, the former aerodrome site is also allocated in the Minerals Local Plan as one of three Preferred Areas for future mineral extraction. The existing landscape and scenic quality at the application site derives from its open urban fringe character (rather than mature landscape elements) and how this provides a contrast to the more built up nature of Hatfield and the wider Northern Thames Basin on the edge of London. The site is well used as a local recreational greenspace and is also located within the Watling Chase Community Forest, which *inter alia* aims to assist in the protection and enhancement of countryside and greenspace around urban areas.

Table 8-3
Analysis of Factors Influencing Landscape Value (from GLVIA3)

Landscape Element	Description
Landscape Quality	The study area has a variable landscape quality. The former aerodrome is in a relatively poor condition (with grassland, regenerating scrub, concrete trackways, footpaths and bunds and a general absence of mature trees, ditches or other natural features, other than remnant hedgerows, becoming more intact around the edges and the River Nast which passes through the site, but culverted in places). The landscape quality in "Area 31 De Havilland Plain", is in a similar condition, with a diverse mix of uses, such as sand and gravel extraction (active and restored) amongst farmland, crossed by a modest number of sinuous secondary roads and dispersed settlement pattern (between built areas of Hatfield and St Albans), few hedgerows, trees and woodland (although Home Covert is one of several areas of woodland to the north of the application site)
Scenic Quality	"Area 31 De Havilland Plain" as a whole is described as being "..*as empty as it is flat*", often resulting in long open views. Such views are generally more scenic where there is an absence of built or industrial development/detractors or where mature trees feature in views; the disused Hatfield aerodrome and new business park are described as having visually dominant structures. The new housing on the edge of Smallford and Ellenbrook were visible to varying degrees from footpaths in the area and result in urban fringe character.
Rarity	The former aerodrome is unusual, with unique history, restoration and management under the auspices of Ellenbrook Fields. However the landscape (and associated views and vistas) is not especially valued for their rarity. "Area 31 De Havilland Plain" character area itself, whilst distinctive, is also not described as a rare landscape character type.
Representativeness	The former aerodrome is considered to be a representative feature, in so far as it is mentioned in the published character assessment; its flatness and original suitability for an airfield is also representative of the "*extensive level plain*".
Conservation Interests	There are no ecological or cultural heritage designations within the application site, although there are listed buildings to the south at Popefield Farm and southwest corner of the site near Three

Landscape Element	Description
	Horseshoes Public House. There are seven more listed buildings are located along Wilkins Green Lane. There are several protected species that have been surveyed within the site and the Ellenbrook Fields (of which the application site forms part) is being actively managed by the landowner to enhance conservation interest.
Recreational Value	The application site is used as an informal public open space, (with both a public right of way and permissive footpaths) and partly for grazing. This is promoted on the landowners website and leaflets/interpretation boards as "Ellenbrook Fields". Parking is available alongside Ellenbrook Fields at Notcutts Garden Centre to the south-west of the application site on Hatfield Road.
Perceptual Aspects	A degree of tranquillity is present within the site, albeit with urban fringe character; overall provides a contrast to the more built up nature of A1057, Hatfield and northern Thames basin on the edge of London.
Associations	No evidence of artistic or literary associations with the landscape of the application site or study area has been noted as part of this assessment, other than aviation history of the former aerodrome and more recent use by film companies.

Prediction of Landscape Effects

8.56 As described in paragraph 5.34 of GLVIA3, landscape receptors that may be affected by the scheme include overall character and key characteristics, individual elements or features and specific aesthetic or perceptual aspects.

8.57 The effects resulting from the proposed development relate potentially to the following:

- physical disturbance of landscape elements and features and reinstatement of landcover;
- alteration to aesthetic and perceptual aspects such as scale, simplicity, openness and sense of tranquillity and wildness; and
- alteration to overall landscape character and key characteristics.

Assessment of Significance of Residual Landscape Effects

8.58 The assessment of significance of residual landscape effects is carried out for each landscape effect thought likely to occur and for the relevant landscape receptor that may be altered by the scheme (such as individual elements or features, specific aesthetic and perceptual aspects and overall character and key characteristics).

Criteria

8.59 The criteria for assessing the significance of residual landscape effects (i.e. after the built-in mitigation) are described in GLVIA3 and set out in Appendix 8/1 to this chapter. They are based on the combination of sensitivity (susceptibility of the receptor to the change proposed and the value attached

to the receptor) and magnitude of change (size and scale, geographical extent, duration and reversibility).

8.60 As described in paragraph 5.56 of GLVIA3, at opposite ends of the spectrum, the following may apply to landscape effects:

- *Major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally valued landscapes are likely to be of the greatest significance;*
- *Reversible negative effects of short duration, over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to but are not key characteristics of the character of landscapes of community value are likely to be of the least significance and may, depending on the circumstances, be judged as not significant.*

Physical Disturbance of Individual Elements and Features

8.61 Physical disturbance of individual elements and features occurs at the site level only (within the application site itself).

8.62 The application site covers an area of around 87.1ha and comprises the western part of the former aerodrome and area known as Ellenbrook Fields.

8.63 The sensitivity of the application site to the type of change proposed is low, this is due to the following:

- low susceptibility of the large scale, flat/gently sloping and generally simple landform, which has been subject to previous disturbance, generally lacking in mature trees, ditches or other natural features and which overall are considered to be able to accommodate disturbance from the proposed development; and
- local value of the site, as there are no landscape designations in place and the physical state is currently relatively poor condition and reduced scenic quality (with visibility of man-made features), with limited conservation interest. Recreational activity is based on informal permissive access. Tranquillity is present within the application site and its open urban fringe character provides a contrast to the more built up areas. No particularly rare elements or features present and is not a rare landscape type.

8.64 The magnitude of change upon individual elements and features during operational phases would vary over the project lifecycle from low during initial site establishment, rising to medium during the middle phases (maximum extent of disturbance), then becoming low towards the later phases, due to the following:

- progressive clearance of vegetation and soils in advance of operations, starting with initial site clearance around perimeters, northern and eastern areas, then gradually working westwards;

- diversion of 0.6km of public right of way and other permissive footpaths and access within the application site around the perimeters;
- advance planting of approximately 2km of native trees and shrubs around the perimeter and a small c1ha block adjacent to the plant site at the outset and then retained on a permanent basis;
- retention of two great crested newt ponds around the boundary / corridor, with new ponds created;
- new internal access roads, including over 0.8km from A1057 site entrance to the plant site area, installed at outset and retained on a permanent basis;
- formation of soil/overburden storage mounds, typically 3 to 5m above existing ground levels, mainly around the site perimeters with steep gradients as dictated by operational and geotechnical constraints and other shorter-term locations as necessary;
- formation of the around 11ha plant site area at the outset, including new structures (processing plant with up to 10m highest point and batching plant with up to 13.3m highest point) and temporary formation of mineral stockpiles up to 10m above existing ground levels and steep sides;
- formation of voids on a progressive basis, typically by between 12 and 17m below existing ground levels, to the base of the lower mineral horizon (leaving 1m standoff to the chalk), across the c53ha mineral extraction area and all with steep gradients as dictated by operational and geotechnical constraints;
- subsequent engineering, backfilling and restoration of majority of voids on a progressive basis, using imported inert materials and site derived materials; and
- the operational phases at the site as a whole are long term overall.

8.65 The magnitude of change to the individual elements and features after final restoration would be low, due to the following:

- final restored landform would be flat to gently sloping and very similar to that currently existing, with the exception of 2.5ha waterbody in the north-eastern end for wildlife and amenity interest;
- c1km hedgerows would be planted as part of the reinstated historic field pattern, in conjunction with the advance planting undertaken at the outset of the development;
- inclusion of 6ha new shallow wetlands across the site linked to the field pattern of open ditches and swales and wildlife ponds;
- 72.4ha of restored conservation grassland based on a variety of plant communities established using variable substrates and micro topography, with approximately 20ha in the north of the site as a tranquil area, with ridge and furrow and limited access for conservation benefits;
- approximately 3ha of scattered scrub would be established in the south-eastern corner of the site;
- reinstatement of 0.6km of public right of way along its original route and permissive access paths along similar routes to existing;
- retention of the 1ha access road and a small car parking area / site offices for recreational purposes; and
- the final restoration scheme would result in permanent enhancements to the landscape.

8.66 The potential effect relating to the physical differences between the landscape elements and features at the application site is therefore considered to be slight, rising to moderate and adverse during working becoming slight and beneficial after restoration. Overall these are not significant effects.

Alterations to Aesthetic and Perceptual Aspects

8.67 Changes to aesthetic and perceptual aspects occur principally within the application site and its immediate landscape setting, with effects on the wider landscape setting being influenced by the size and scale of the new elements and their limited visibility.

8.68 The sensitivity of the application site and its immediate setting to the type of change proposed is considered to be low due to the following:

- low susceptibility of the "incoherent pattern" (combination of the partly removed former aerodrome, flat and straight trackways and paths, remnant hedgerows and naturally regenerating scrub amongst the overall green grassland), which is quite simple, with a degree of tranquillity, but albeit urban fringe character (due to the existing presence of the Hatfield Quarry to the north and A1507 road to the south, close to visible signs of human activity and development associated with Smallford, Ellenbrook and Hatfield), which overall are considered to be able to accommodate disturbance from the proposed development; and
- local value of the site, as previously described above, in relation to landscape elements and features.

8.69 The magnitude of change to the aesthetic and perceptual aspects during operational phases would be moderate, due to the following:

- overall scale would remain medium to large;
- the pattern would become more organised in places (new roads, linear bunds, heaps of processed materials and stocks), but remain incoherent in other areas (wherever the void and disturbance cuts through existing roads and tracks and hedges as the development progresses);
- the progressive alterations to form would be more apparent (deepening of voids and raising of mounds), but line would be less so, as the temporary straight edges of the phasing boundaries, engineered slopes and mounds would move around the site as it is worked;
- the alterations to colours would be apparent from the green grass, hedgerow and scrub cover, changing to brown, sandy yellow and grey exposed minerals (soil, sand and gravel and clay), as well as imported inert waste materials;
- the diversity and movement within the application site would increase associated with the combination of active workings (extraction and infill), plant and machinery, stocking areas, affecting tranquillity, although this would be localised/concentrated at certain locations; and
- the operations at the site are long term, after which point the final restoration scheme would reinstate a more permanent change.

8.70 The magnitude of change to the aesthetic and perceptual aspects after final restoration would be low, due to the following:

- overall scale would remain medium to large;
- the use of imported inert fill to reinstate the flat to gently sloping form would be complimented by the regular and straight field pattern (hedgerows and ditches), resulting in a more organised pattern;
- the green grass and hedgerows would be returned, with a reflective waterbody in the north-east corner and smaller field ponds and wetlands elsewhere;
- the diversity within the application site would increase associated with the combination of micro-topographical and substrate variation and resulting plant communities that would be encouraged, but movement would return to existing recreational activity and maintenance operations; and
- the final restoration scheme would result in permanent enhancements to the landscape.

8.71 The potential effects relating to the aesthetic and perceptual aspects are therefore considered to be moderate and adverse during working becoming slight and beneficial after restoration. Overall these are not significant effects.

Alterations to Overall Character and Key Characteristics

8.72 The alterations to overall landscape character and key characteristics result from a combination of changes to physical elements and features and the changes to the aesthetic and perceptual aspects of views/inter-visibility. Such effects occur both within the application site and its immediate landscape setting (and these are considered together).

8.73 The susceptibility to change resulting from the proposed development for the "Area 31 De Havilland Plain" as a whole, is considered to be negligible to low due to the following characteristics:

- scale, where large scale indicates lower sensitivity, and landform, where absence of strong topographical variety, featureless, convex or flat indicates a lower sensitivity ("*extensive level plain"*);
- pattern and complexity, where simple, regular or uniform indicates a lower sensitivity ("*..as empty as it is flat*", but with a diverse mix of land-uses);
- settlements, man-made influence and skylines, where presence of existing man-made features indicate lower sensitivity (former aerodrome, as well as the operational Hatfield Quarry to the north and built development forming the edge of the urban fringe); and
- inter-visibility with adjacent sensitive landscapes, where little inter-visibility indicates lower sensitivity (flat site enclosed by perimeter vegetation).

8.74 The overall value of the aforementioned "Area 31 De Havilland Plain", is of a local level, due to the following:

- lack of landscape designations, although it is within a Green Belt and part of Watling Chase Community Forest;
- mix of land-uses, including sand and gravel extraction (active and restored);
- scenic quality varies, but influenced by Hatfield Aerodrome and business park; and
- features of local recreational value, such as the public rights of way and permissive access to Ellenbrook Fields.

8.75 The overall sensitivity of the aforementioned "Area 31 De Havilland Plain" to the proposed development is considered to be low.

8.76 The magnitude of change relating to the alteration of overall landscape character within the aforementioned "Area 31 De Havilland Plain", as a whole is considered to be low due to the following:

- the published character area is relatively large in area in comparison to the application site, covering over 1,224ha in a 2km (and greater) wide band extending for over 2km north-east and south-west of the application site. Consequently, the size or scale of change to the area as a whole (both in terms of physical disturbance and changes to views) would be limited (with the overall application site area being around 81ha, or around 7% of the character area);
- the "Area 31 De Havilland Plain" would continue as an extensive plain with a diverse mix of land-uses including quarrying activities and mineral extraction plant; and
- the duration of the development would be long-term but the final restoration permanent.

8.77 Thus, the overall landscape effects upon the application site and the "Area 31 De Havilland Plain" as a whole are considered to be slight and not significant. The effects are adverse in nature during working becoming beneficial after final restoration; there would be no new key characteristics introduced, but the addition of a new area of active quarrying and infilling, with processing plant is nevertheless a detracting element.

8.78 At a local level, the application site would be classified as "medium to large-scale greenspace with mineral workings" and after restoration would be returned to "medium to large-scale greenspace plain/former aerodrome".

Cumulative landscape effects

8.79 This part of the assessment focuses on the cumulative landscape effects of the proposed development in conjunction with the operational Hatfield Quarry to the north; both of these sites lie within "Area 31 De Havilland Plain".

8.80 There is an application for *"the restoration to conservation after uses through the importation and final disposal of engineering materials comprising inert waste and soils. The use of part of the site for ongoing silt operations and subsequent restoration*" at the adjacent Hatfield Quarry, operated by Cemex

which at the time of writing was awaiting a decision (application reference 5/1240-14).

8.81 Application reference 5/1240-14 describes how "*Hatfield Quarry (the Quarry) has been an active sand and gravel and waste site since the 1940/50's based on planning records held by the mineral planning authority, the Quarry having been used as a disposal point for household waste at various times and locations…The current sand and gravel workings take place approximately one to two kilometres north west of Cut Field with aggregates processing, storage and distribution taking place approximately one kilometre to the south west*".

8.82 The Hatfield Quarry application area described above is 20.5ha, although the other Cemex controlled land (including the current working and processing areas) is estimated to be approximately seven times this, c140ha; thus the addition of the proposed c87ha development at Hatfield Aerodrome are comparable in size and scale to this existing operation.

8.83 The cumulative effect on the landscape resource resulting from the proposed development, in conjunction with larger existing Hatfield Quarry, would also still constitute only a limited part of the much larger "Area 31 De Havilland Plain" overall.

8.84 The actual footprint of activity at each of these sites (mineral extraction, processing and/or infilling), as already described above, would be restricted to a smaller part of the overall application site(s) and restored on a progressive basis, with Hatfield Quarry expected to cease extraction in 2020.

8.85 The presence of "*existing and restored mineral workings*" is already one of the key characteristics of "Area 31 De Havilland Plain". Therefore the addition of the proposed development, to the ongoing operations at Hatfield Quarry would not give rise to changes in landscape character of such an extent as to have major effects on its key characteristics or transform it into a different character type; it is not considered that the development "*tips the balance*" through its additional effects.

Summary Statement of the significant landscape effects

8.86 Overall this assessment has not identified any significant (major or moderate/ major) landscape effects as a result of the proposed development.

VISUAL EFFECTS

8.87 A study area of up to 5km surrounding the application site has been adopted for this assessment, based on the interpretation of the ZTV maps and experience of similar projects.

Visual Baseline

8.88 Baseline conditions for the application site and surrounding study area have been assessed and are described below.

Visual receptors

8.89 Paragraph 6.13 of GLVIA3 defines visual receptors as people living in the area; people who work there; people passing through on road, rail or other forms of transport; people visiting promoted landscapes or attractions; and people engaged in recreation of different types.

8.90 Initially, it is necessary to define the extent of visibility both within and outside the application site and how it relates to potential receptors. Comparative ZTV were calculated for the following aspects of the proposed development using 3D digital terrain model in using LSS software (McCarthy Taylor) in accordance with the method statement in Appendix 8/4:

- Plant Site (based on 13.3m high pinnacle and with perimeter bunds formed during site establishment as screening features) – Drawing HQ 8/2;
- Phase A extraction area (with perimeter bunds formed during site establishment as screening features) – Drawing HQ 8/3; and
- Maximum extraction void (with perimeter bunds formed during site establishment as screening features) – Drawing HQ 8/4.

8.91 The ZTV assessment is limited to subtended vertical angles above 0.25˚. Areas with less than this theoretical angle were considered unlikely to generate significant effects.

8.92 Furthermore, the ZTV's are based on a bare terrain; that is, the computer model does not include any vegetation, structures or other buildings. As a result, the extent of visibility, which is illustrated on the drawings, is very much a worst case scenario and would be greatly reduced if other potentially screening features were included in the model, for example Home Covert or the peripheral hedgerows.

8.93 The general theoretical visibility of the plant is limited to the following areas:

- the area of visible vertical angle above 3 degrees extends for around 0.3km and covers part of the Ellenbrook Fields and the existing public right of way, which would be diverted to the north-western corner of the field, into a corridor screened by the proposed bund;
- the area of visible vertical angle between 1 and 3 degrees extends for a further 0.5km over more of the public right of way and Ellenbrook Fields, Ninefields Nursery and edge of Smallford;
- the areas of visible vertical angle of between 0.25 and 1 degree extend approximately 2km further in all directions including Coopers Green Lane to the north and Hatfield Road to the south and parts of Smallford, Ellenbrook and Wilkin's Green and several isolated properties (such as Popefield Farm and Beech Farm), as well as additional parts of Ellenbrook Fields and the A1(M) and edges of Hatfield, Colney Heath and St Albans; and
- there is no visibility predicted over much of Hatfield to the east, Oaklands College or St Albans to the west or Sandridge to the north a small part of Ellenbrook Fields to the east.

8.94 The general theoretical visibility of the Phase A extraction area is much less due to it being set down:

- the area of visible vertical angle above 3 degrees covers the working area only / Ellenbrook Fields;
- the area of visible vertical angle between 1 and 3 degrees extends further west slightly, by around 0.1km and affecting the former aerodrome site/ Ellenbrook Fields only;
- the areas of visible vertical angle of between 0.25 and 1 degree extends further west slightly again, by approximately 0.3km and affecting the former aerodrome site/Ellenbrook Fields only and a very small section of the public right of way, which would be diverted; and
- there is no visibility predicted over Coopers Green Lane to the north or Hatfield Road to the south, Smallford, Ellenbrook or any of the nearby properties due to the containment offered by the perimeter screening bunds. Much of the Ellenbrook Fields to the north, east and west would have no visibility.

8.95 The general theoretical visibility of the maximum extraction void is also limited and very much a worst case scenario, as the initial working phases are anticipated to be restored as the later phases are brought into operation meaning that the whole void would not be opened at any single point in time:

- the area of visible vertical angle above 3 degrees covers the former aerodrome site/ Ellenbrook Fields only;
- the area of visible vertical angle between 1 and 3 degrees extends further west slightly, by around 0.1km and affecting the former aerodrome site/ Ellenbrook Fields, with a small part of the Ninefield Nursery to the west, as well as small part of Hatfield Road to the south, associated with the new access point (where there is no bunding);
- the areas of visible vertical angle of between 0.25 and 1 degree extends further west, north and east slightly again, by approximately 0.3km and affecting former aerodrome site/ Ellenbrook Fields and public right of way, which would be diverted, as well as the bridleway that runs parallel to Oaklands Lane and a number of residential properties, the right of way adjacent to the east of Smallford and part of Hatfield to the south-east; and
- there is no visibility predicted over Coopers Green Lane to the north or Ellenbrook due to the containment offered by the perimeter screening bunds. Much of the Ellenbrook Fields to the north and east would have no visibility.

8.96 Following the initial desk based modelling of theoretical visibility, fieldwork was carried out to review the degree of additional screening provided by vegetation and/or built up areas and buildings.

8.97 Screening from trees and hedgerows is relatively high, in particular along roadsides and within settlements, with occasional glimpses where hedgerows have been clipped short or removed, or from gateways and road junctions. The former aerodrome site has some enclosure from naturally regenerating

scrub as well as remnant hedgerows, although medium to long views over the flat, open space is characteristic.

8.98 As a result of the fieldwork, much of the more distant areas of theoretical visibility identified for the highest part of the plant site (shown on Drawing HQ 8/2), have been discounted such as the A1(M) and edges of Hatfield, Colney Heath and St Albans.

8.99 Potential visual receptors in the area covered by the ZTVs and assess in more detail include the following:

- inhabitants of settlements and residential properties, such as Ellenbrook to the east, Popefield Farm to the south, Smallford and properties along Oaklands Lane to the south-west and west and Beech Farm to the north;
- users of public highways such as A1057 Hatfield Road to the south and Coopers Green Lane to the north or southern part of Oaklands Lane to the south-west;
- users of rights of way or other informal recreational access to Ellenbrook Fields or elsewhere in the local area; and
- users of National Cycle Route 61 and St Albans Way / Watling Chase Trail.

Viewpoints - representative, specific, illustrative

8.100 As stated in paragraph 6.19 of GLVIA3 (*op cit*), viewpoints selected for inclusion in the assessment and for illustration of the visual effects fall broadly into three groups: representative; specific; and illustrative.

8.101 In accordance with paragraph 6.20 of GLVIA3, the selection of the final viewpoints used for the assessment has taken account of the following range of factors:

- accessibility to the public;
- the potential number and sensitivity of viewers who may be affected;
- the viewing direction, distance (i.e. short, medium, and long-distance views) and elevation;
- the nature of the viewing experience (for example static views, views from settlements and views from sequential points along routes);
- the view type (for example panoramas, vistas and glimpses); and
- the potential for cumulative views of the proposed development in conjunction with other developments.

8.102 Photography and fieldwork analysis of the views of the application site were then carried out from the surrounding landscape. The object was to determine which locations offer the clearest views of the application site and/or are most accessible to the public and to identify representative viewpoints for detailed viewpoint analysis. The existing views from each of these points are briefly described with the aid of photographs.

8.103 The locations of the selected viewpoints are shown on Drawings HQ 8/2 to 8/4 and existing photography drawing sheets are listed in Table 8-4 below.

8.104 Photographs illustrating views from a selected series of viewpoints were taken using a Nikon D70 digital camera. The camera was set to a focal length which is the equivalent of a 50mm lens for a 35mm format camera. The nature of the views was of relatively wide panoramas and it was therefore considered beneficial to present the photographs in this way. The panoramic views consist of three or four photographic frames and were digitally merged together using industry standard software and followed Landscape Institute Advice Note 01/11. Each photographic sheet includes the viewpoint location co-ordinates.

8.105 In addition to the existing photography drawing sheets, the detailed descriptions of the existing views are included in the individual viewpoint analysis in Appendix 8/5 to this chapter.

Table 8-4
List of Viewpoints

VP	Location/Description	Drawing
1	View south from public right of way to the north near conveyor crossing point. This viewpoint represents the recreational users of this route.	HQ 8/5
2	View south public right of way as it joins the application site to the north. This viewpoint represents recreational users of this route and visitors to Ellenbrook Fields.	HQ 8/6
3	View west from edge of Ellenbrook. This viewpoint represents the views of recreational visitors to the Ellenbrook Fields greenspace and local residents.	HQ 8/7
4	View from Hatfield Road at entrance to Popefield Farm. This viewpoint represents the views of users of the local road network and local residents.	HQ 8/8
5	View from Hatfield Road at junction with public right of way, near proposed site entrance. This viewpoint represents the views of users of the local road network and local residents, as well as users of the right of way and visitors to Ellenbrook Fields and/or parking at Notcutts Garden Centre.	HQ 8/9
6	View from public right of way to the west edge of the application site. This viewpoint represents the recreational users of this route and part of Ellenbrook Fields.	HQ 8/10
7	View from residential properties, near to Oaklands Lane and public right of way. This viewpoint represents local residents and users of the nearby public right of way.	HQ 8/11
8	View south from public right of way to the west, parallel to Oaklands Lane. This viewpoint represents the recreational users of this route.	HQ 8/12

Sequential views

8.106 The viewpoints selected above include the following key routes and transport corridors to enable sequential views to be considered:

- two locations along the A1057 Hatfield Road;
- four locations along the right of way which passes through the application site and Ellenbrook Fields greenspace; and
- two locations on the public right of way which runs parallel to the western boundary of the application site.

Prediction of Visual Effects

8.107 As described in paragraph 6.26 of GLVIA3, changes in views and visual amenity may arise from built or engineered forms and/or soft landscape elements of the development.

Changes in views from viewpoints

8.108 For all viewpoints the potential changes have been reviewed by using 3D models to analyse spatial data (distances, elevations and slopes) and generate perspective views, although these have not been included in this chapter.

8.109 Appendix 8/5 provides a detailed analysis of potential change for each individual representative viewpoint, which identified that:

- the clearance of existing vegetation and landcover, the formation, working and subsequent backfilling of the mineral extraction void would have very limited visibility due to the existing and proposed perimeter screening measures, but also the generally flat topography which restricts any potential views down into or over the application site;
- the diversion of the rights of way and areas of permissive access around the site perimeters would move visitors to this part of Ellenbrook Fields along landscaped corridors that are of similar character to existing routes and/or across the new internal access roads and over undisturbed areas. These routes would then be reinstated as part of final restoration;
- the mineral processing plant would have some visibility from limited locations at gaps in hedgerows, etc to the north and west of the application site, but this is generally backgrounded and/or seen as part of a mainly wooded horizon, with other development such as Ellenbrook, Hatfield or Smallford; and
- the formation of the site entrance and movement of vehicles to and from the site would be visible from a small part of the existing busy Hatfield Road (A1057).

8.110 The ZTVs indicated some theoretical visibility around residential areas, such as Ellenbrook to the east, Popefield Farm and Wilkin's Green to the south, Smallford and properties along Oaklands Lane to the south-west and west and Beech Farm to the north. However, the actual visibility of the application site is limited by the topography and intervening or adjacent buildings and

vegetation. Views are more open towards the edges of the settlements and/or from slightly elevated positions, rather than within the centre of settlements or from lower lying positions; although the generally flat plain limits this:

- Viewpoint 3 was positioned on the edge of Ellenbrook, where although views opened out over the broad extensive plain, these where shortened in the direction of the application site by intervening vegetation;
- representative Viewpoint 5 was positioned on the edge of Smallford, where the existing tree belt along the Hatfield Road screened all potential views into the application site; and
- Viewpoint 7 was positioned at the northern edge of Smallford, where a recent housing development, served by a private road, screened all views towards the application site from the public highway/right of way.

8.111 For smaller groups or isolated properties, which will have a higher potential for views out to the application site, the presence of vegetation around the dwellings will still influence the degree of change to views, as well as the elevations relative to and distances from the property to the application site. The orientation of the dwellings themselves will also affect the degree of visibility for residential receptors, for example whether the views would be direct or indirect (or oblique). It is considered that direct views are where the difference between the direction of view from the main front or rear façade of each building and the direction to the proposed development is less than 45°. Correspondingly indirect views are where there is difference of over 45° between the two bearings:

- representative Viewpoint 4 was positioned adjacent to Popefield Farm where the existing tree belt along the Hatfield Road and around the farm boundary screened all potential views into the application site; and
- Viewpoint 1 was positioned approximately 200m south of Beech Farm, mainly because the vegetation nearer to the property was significantly enclosing and screening views of the application site.

8.112 Nevertheless, there is a small degree of change to the baseline condition predicted for residential properties on the edge of Smallford, especially upstairs windows, wherever facing towards the application site; change would be discernible but underlying landscape character or view composition would be similar to the baseline.

8.113 The visibility from road and recreational routes will inevitably be influenced by the direction of travel and position of the proposed development relative to the viewer (for example whether along or in line with the route/road corridor and in the field of view of the traveller, or perpendicular to the route and difficult to see without the traveller turning away). Furthermore, the presence of other existing focal points within the route corridor as well as adjacent buildings and roadside vegetation and other boundary features will influence impacts on composition or character.

8.114 For most of the road users the application site is offset and perpendicular to the main direction of travel:

- Coopers Green Lane is orientated north-east to south-west and offset by approximately 0.8km. However intervening vegetation such as Balls Covert and south of Beech Farm or along the Hatfield Quarry conveyor line, screen views of the application site; and
- Oaklands Lane is orientated north to south and offset by approximately 0.5km. However the built up edge of Smallford obscures all views eastwards towards the application site.

8.115 As noted above, representative Viewpoints 4 and 5 were positioned along the Hatfield Road where the existing tree belt screened all potential views into the application site, other than the short section adjacent to the proposed site access.

8.116 There are several public rights of way in the local area, including:

- a connection between the northern edge of Smallford and Oak Farm to the north, via the existing Hatfield Quarry plant site area. This is offset to the application site by 0.3km, where views would be perpendicular to the direction of travel; and
- a connection from Beech Farm southwards into the application site and connecting to Smallford/Hatfield Road. Viewpoint 1 illustrates the northern limit of visibility and Viewpoint 5 illustrates the southern limit of visibility, in total around 1.5km, with 0.6km to be diverted. Much of this route would experience changes although the mitigation proposed aims to provide a landscaped corridor for visitors to this route with additional tree planting.

8.117 The ZTVs for the plant covered approximately two-thirds of the Ellenbrook Fields, whilst the maximum extraction void was nearer half. Visitors to the Ellenbrook Fields would experience diversions to the existing permissive routes in the western part, along landscaped corridors around the site perimeter. However, as illustrated by Viewpoint 3, typically visitors to the northern and eastern parts of Ellenbrook Fields would not experience any change due to intervening vegetation and the generally flat topography.

8.118 The ZTV for the plant covered less than 0.2km of the National Cycle Route 61 and St Albans Way / Watling Chase Trail, which overall is very limited. Nevertheless, users of this route would be offset from the application site by around 0.5km at their nearest point and where it would be perpendicular to the direction of travel, with intervening vegetation (along Hatfield Road) and buildings (around Smallford) and the generally flat landform also removing any potential visibility.

Assessment of Significance of Residual Visual Effects

Criteria

8.119 The criteria for assessing the significance of residual visual effects (i.e. after the built-in mitigation) is described above and in GLVIA3 and based on the

combination of the nature of the receptor likely to the affected (sensitivity) and the nature of effect likely to occur (magnitude).

8.120 As described in paragraph 6.44 of GLVIA3, at opposite ends of the spectrum, the following may apply to visual effects:

- *Effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant;*
- *Effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant;*
- *Large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes involving features already present in the view.*

Summary assessment

8.121 Overall there are no significant visual effects predicted on any of the individual representative viewpoints (i.e. major or major/moderate). Although there are several sensitive receptors in the study area (mainly residential and recreational), most would experience a small degree of change to the baseline condition; change is discernible but underlying landscape character or view composition would be similar to the baseline. The landscape strategy / mitigation proposals would be effective.

8.122 Using the detailed descriptions provided in Appendix 8/5, Tables 8-5 and 8-6 summarise the residual visual effects resulting for each of the receptors at the representative viewpoints and concludes as follows:

- inhabitants of settlements, such as Ellenbrook to the east and Smallford to the south-west, as well as the scattered farmsteads and dwellings elsewhere would have no more than moderate effect (e.g. Viewpoint 5) and mainly with no change (e.g. Viewpoints 3 and 7);
- users of public highways such as Hatfield Road would have no more than slight/moderate effect (e.g. Viewpoints 4 and 5);
- users of rights of way or other informal recreational access in the local area would have no more than moderate effect (e.g. Viewpoints 1, 7 and 8); and
- recreational visitors to the Ellenbrook Fields would vary between moderate effects (e.g. Viewpoints 2, 5 and 6) and no change (e.g. Viewpoint 3).

Table 8-5
Summary of Effect for each Viewpoint during Working Phases

VP	Location/Description	Sensitivity	Magnitude	Significance
1	View south from public right of way to the north near conveyor crossing point.	Medium to high (recreational visitors in an urban fringe context, adjacent to quarry conveyor)	Low and adverse during initial stages, becoming low and neutral as the perimeter planting matures	Moderate
2	View south public right of way as it joins the application site to the north.	Medium to high (recreational visitors in an urban fringe context)	Low and adverse during initial stages, becoming low and neutral as the perimeter planting matures	Moderate
3	View west from edge of Ellenbrook.	Medium to high (recreational visitors in an urban fringe context and local residents, where interpretation boards refer to past and future mineral extraction),	No change	None
4	View from Hatfield Road at entrance to Popefield Farm.	Low (road users) and medium (local residents along an existing busy road)	Negligible and adverse	Slight/ moderate
5	View from Hatfield Road at junction with public right of way, near proposed site entrance.	Low (road users) and medium (recreational visitors in an urban fringe context and local residents along an existing busy road)	Low and adverse during initial stages, becoming low and neutral as the landscaping matures	Slight/ Moderate
6	View from public right of way to the west edge of the application site.	Medium to high (recreational visitors in a largely urban fringe context)	Low to medium and adverse, during initial stages becoming low and neutral as the planting matures	Moderate
7	View from residential properties, near to Oaklands Lane and public right of way.	Medium to high (local residents and recreational visitors, in built up context)	No change	None
8	View south from public right of way to the west, parallel to Oaklands Lane.	Medium to high (recreational visitors in an urban fringe context and adjacent to an existing quarry)	Low and adverse during initial stages of the development, becoming low and neutral as the landscaping matures	Moderate

Table 8-6
Summary of Effect for each Viewpoint after Final Restoration

VP	Location/Description	Sensitivity	Magnitude	Significance
1	View south from public right of way to the north near conveyor crossing point.	Medium to high (recreational visitors in an urban fringe context, adjacent to quarry conveyor)	Low and neutral	Moderate
2	View south public right of way as it joins the application site to the north.	Medium to high (recreational visitors in an urban fringe context)	Low and neutral	Moderate
3	View west from edge of Ellenbrook.	Medium to high (recreational visitors in an urban fringe context and local residents, where interpretation boards refer to past and future mineral extraction),	No change	None
4	View from Hatfield Road at entrance to Popefield Farm.	Low (road users) and medium (local residents along an existing busy road)	No change	None
5	View from Hatfield Road at junction with public right of way, near proposed site entrance.	Low (road users) and medium (recreational visitors in an urban fringe context and local residents along an existing busy road)	Low and neutral	Slight/ Moderate
6	View from public right of way to the west edge of the application site.	Medium to high (recreational visitors in a largely urban fringe context)	Low and neutral	Moderate
7	View from residential properties, near to Oaklands Lane and public right of way.	Medium to high (local residents and recreational visitors, in built up context)	No change	None
8	View south from public right of way to the west, parallel to Oaklands Lane.	Medium to high (recreational visitors in an urban fringe context and adjacent to an existing quarry)	Low and neutral	Moderate

Cumulative Visual Effects

8.123 This part of the assessment focuses on the potential cumulative visual effects of the proposed development with the ongoing operations at the Hatfield Quarry.

8.124 The only occurrence of simultaneous visibility of the two developments was predicted at the following locations:

- users of the public right of way to the north of the application site, near to the Hatfield Quarry conveyor (Viewpoint 1); and

- users of public right of way to the west of the application site, parallel to Oaklands Lane, near to the Hatfield Quarry processing plant site area and perimeter soil storage bund (Viewpoint 8).

8.125 However, in each case the proposed development would be in a different direction to the elements and features of Hatfield Quarry, meaning that walkers along the route would be looking around to experience any potential coalescence.

8.126 Also the Hatfield Quarry plant site area and associated elements and features (fencing, bunds and conveyor) are expected to be removed as part of the cessation of mineral extraction at the site in c. 2020, at which point there would be no cumulative visual effect of concurrent working with the proposed development.

8.127 The other potential cumulative visual effects are of a sequential nature, for example users of the road network or recreational visitors moving along the rights of way. However, this is also considered to be limited and mitigated by the existing urban fringe character of area, the limited duration of operations at Hatfield Quarry and the nature of the proposals at the application site, as described above.

8.128 Overall there are no significant cumulative visual effects anticipated as a result of the proposed development.

FUNCTIONALITY OF THE GREEN BELT

8.129 Utilising the assessment work above, a focused study of proposed development has been carried in relation to the functions of the green belt as set out in the National Planning Policy Framework (e.g. checking sprawl, preventing towns from merging, safeguarding the countryside from encroachment, preserving the setting and special character of historic towns and assisting in urban regeneration, etc). In particular this is considered in relation to each of the viewpoints in Appendix 8/5.

8.130 It has already been described above how there is a history of mineral working in the area to the north, associated with Hatfield Quarry and "*existing and restored mineral workings*" is already one of the key characteristics of "Area 31 De Havilland Plain". These areas are also in the green belt and in general terms therefore active and restored sites should not necessarily be incompatible with this designation, depending on the character and quality of the schemes proposed.

8.131 The proposed development would ensure high environmental standards and the long term restoration of the application site would deliver new areas of wetland, woodland and hedgerows, amongst a more diverse grassland mosaic.

8.132 In addition the proposals would as far as possible keep the green belt open, as the temporary soil and overburden storage mounds would be long, relatively low and grass seeded, thus avoiding high, steeply rising, engineered pinnacles. Temporary mineral stockpiles may be visible at certain

times, as the heaps are surcharged on a campaign basis and then reduced in size as processed and sold from site. They would also be removed as part of final restoration and the infilling of mineral voids would not result in land raising or additional permanent enclosure as the landform would be low and very gently sloping, in keeping with the existing character.

8.133 The built structures relating to the processing plant would also be temporary, relatively narrow structures and isolated built forms, rather than being a broad, solid mass of built development as would typically be associated with sprawl or encroachment.

8.134 The plant site area is located to the north, approximately 0.3km away from the other existing development at Smallford and 0.8km away from Ellenbrook housing development. The perimeter bund at the eastern edge of the site is around 0.3km away from Ellenbrook. The proposed development would not constitute coalescence of Smallford and Hatfield.

8.135 The proposed development would not affect the setting or special character of historic towns or undermine attempts at urban regeneration.

CONCLUSIONS

8.136 This chapter has assessed the potential landscape and visual implications of the proposed development, as has been described in Chapter 3 above. This included a baseline study of the existing site and its surroundings, a study of the landscape and visual characteristics of the development and an assessment of the residual landscape and visual effects likely to be generated after mitigation has been considered and their significance.

8.137 Overall there are no significant landscape or visual effects predicted as a result of the proposed development, influenced in part by the proposed mitigation and landscape strategy.

8.138 The physical changes to landscape elements and features is initially considered to be slight, associated with site preparation and establishment stages, rising to moderate and adverse during working phases and when the majority of disturbance would have occurred, but reducing as part of progressive restoration and eventually becoming slight and beneficial after final restoration is achieved.

8.139 The changes to aesthetic and perceptual aspects are also considered to be no more than moderate and adverse during operation phases, but becoming slight and beneficial after restoration.

8.140 The overall landscape effects upon the application site and “Area 31 De Havilland Plain” as a whole are considered to be slight as the published character area is relatively large in comparison and the scale of change is limited; the area would continue to be described *inter alia* as a jumbled, urban fringe landscape, with existing and restored mineral workings across parts of the extensive level plain.

8.141 There would be no new key characteristics introduced, but the addition of a new area of active quarrying and infilling, with processing plant is nevertheless a detracting element.

8.142 At a local level, the application site would be classified as “medium to large-scale greenspace with mineral workings” and after restoration would be returned to “medium to large-scale greenspace plain/former aerodrome”.

8.143 In terms of cumulative landscape effects, the addition of the proposed development to the ongoing operations at Hatfield Quarry would not give rise to changes in landscape character of such an extent as to have major effects on its key characteristics or transform it into a different character type; it is not considered that the development “tips the balance” through its additional effects.

8.144 The visibility of the application site is influenced at a local level by the screening effects of vegetation in the surrounding area, in particular in conjunction with the flat, level plain which prevents any views down or over the site. The clearance of existing vegetation and landcover, the formation, working and subsequent backfilling of the mineral extraction void would have very limited visibility.

8.145 The diversion of the rights of way and areas of permissive access around the site perimeters would move visitors to this part of Ellenbrook Fields along landscaped corridors that are of similar character to existing routes and/or across the new internal access roads and over undisturbed areas. These routes would then be progressively reinstated as part of final restoration.

8.146 The mineral processing plant would have some visibility from limited locations at gaps in hedgerows, etc to the north and west of the application site, but this is generally backgrounded and/or seen as part of a mainly wooded horizon, with other development such as Ellenbrook, Hatfield or Smallford. The formation of the site entrance and movement of vehicles to and from the site would be visible from a small part of the existing busy Hatfield Road (A1057).

8.147 Although there are several sensitive receptors in the study area (mainly residential and recreational), most would experience a small degree of change to the baseline condition; change is discernible but underlying landscape character or view composition would be similar to the baseline. The landscape strategy / mitigation proposals would be effective.

8.148 In cumulative visual terms there is both potential simultaneous and sequential visibility of the proposed development with the existing operations at Hatfield, however this would not result in a new landscape character or completely transform the views. Also the Hatfield Quarry plant site area and associated elements and features (fencing, bunds and conveyor) are expected to be removed as part of the cessation of mineral extraction at the site in 2020, at which point there would be no cumulative visual effects.