

## 7 LANDSCAPE & VISUAL IMPACT ASSESSMENT

### 7.1 INTRODUCTION

#### Company

The Landscape and Visual Impact Assessment (LVIA) reported in this chapter has been undertaken by LDA Design.

LDA Design is an independent consultancy of urban designers, landscape architects and planners, with expertise in environmental planning and assessment.

#### Author

The LVIA has been carried out by Paul Lishman, an Environmental Planner with over 15 years' experience of undertaking LVIA's.

Paul graduated from Manchester University with a Masters in Landscape Planning and Management (MLPM), and has a MSc in Spatial Planning from Oxford Brookes University. He is a member of the Landscape Institute and Royal Town Planning Institute.

#### Chapter Purpose

This chapter of the ES assesses the likely significant effects of the proposed development on the environment in terms of landscape character and views. The chapter and its supporting appendices describe the planning policy context, the assessment methodology; the baseline conditions at the application site and surroundings; the likely significant effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; the likely residual effects after these measures have been employed; and the cumulative effects. In summary, the objectives of the chapter are to:

- Define the existing landscape and visual baseline environments and assess their sensitivity to change;
- Describe the key landscape and visual related aspects of the proposed development and the nature of the anticipated change upon the baseline environments;
- Inform the design of the proposed development to minimise any adverse effects on the baseline environments, and where possible bring about beneficial effects; and
- Assesses the effects during construction and at operation.

It should be noted that consideration has been given to the effect at operation immediately following completion, prior to the maturing of mitigation planting; and once proposed planting is mature. However, it was concluded that there would no discernible differences in effects once the proposed planting is mature. While the proposed planting will invariably improve the character and appearance of the site, it is the retention of existing vegetation that is most important in mitigating landscape and visual effects and will be retained throughout the construction and operational phases.

#### Figures

This chapter should be read in conjunction with the 'Landscape and Visual Impact Assessment Report' (July 2019), provided in Appendix 7.1, ES Volume III, which contains the full LVIA. It includes the following figures:

- Figure 1: Site Location and Planning Policy
- Figure 2: Green Belt
- Figure 3: Topography
- Figure 4: Area of Outstanding Natural Beauty (AONB) Landscape Character
- Figure 5: Visible Structures
- Figure 6: Viewpoints
- Figure 7: Viewpoints Inset Plan
- Figure 8: Photograph Panels
- Figure 9: Zone of Theoretical Visibility (ZTV) of Existing Development
- Figure 10: ZTV of Permitted Development (excluding energy flue)
- Figure 11: ZTV of Permitted Development (including energy flue)
- Figure 12: ZTV of Proposed Development
- Figure 13: Wireframe Visualisations

#### Appendices

This chapter should be read in conjunction with the following appendices contained within ES Volume III:

- Appendix 7.1 Landscape and Visual Impact Assessment Report (July 2019), which contains the full LVIA. The report includes the following appendices:
  - Appendix 1: Glossary;
  - Appendix 2: References;
  - Appendix 3: Methodology;
  - Appendix 4: Methodology for Visualisations and ZTV Studies;
  - Appendix 5: National Planning Practice Guidance Notes ; and
  - Appendix 6: Extracts from Landscape Character Assessment.
- Appendix 7.2 AONB Report (prepared by LDA Design), which considers the impact of the proposed development on the natural beauty criteria of the Kent Downs AONB;
- Appendix 3.1 Arboricultural Impact Assessment (including Tree Retention Plan) (prepared by Middlemarch) which considers the impact of the proposed development on existing trees;
- Appendix 3.2 Summary Lighting Assessment 2019 (prepared by Royal Haskoning), which considers the impact of the proposed development

on the night-time environment and recommends an outline lighting strategy; and

- Appendix 3.3 Lighting Assessment 2015 (prepared by Royal Haskoning).

### 7.2 METHODOLOGY

#### Guidance

The assessment method for this LVIA draws upon the below established guidance:

- Guidelines for Landscape and Visual Impact Assessment 3<sup>rd</sup> Edition (GLVIA3) [1];
- An Approach to Landscape Character Assessment (Natural England, 2014) [2];
- Landscape Institute Technical Information Note (LI TIN) 05/2017 regarding townscape character [3];
- Landscape Institute Advice Note 01/11 - Photography and photomontage in landscape and visual impact assessment [4]; and
- LI TIN 02/17, Visual Representation [4].

The methodology is summarised in Section 3.0 of the LVIA Report and additional detail is set out in Appendices 3 and 4.

#### Legislation and Policy

The application site falls within the Kent Downs Area of Outstanding Natural Beauty (AONB). An AONB is an area of high scenic quality which has statutory protection in order to conserve and enhance its natural beauty.

AONBs are designated under the provisions of the 1949 National Parks and Access to the Countryside Act [5], and subsequent legislation has introduced new measures to strengthen their protection.

Further information on the AONB legislation and policy can be found within the LVIA Report, Appendix 7.1, ES Volume III. The stand-alone AONB Report (Appendix 7.2, ES Volume III) provides a detailed assessment of AONB legislation, policy and guidance and considers the effect of the proposed development on the natural beauty of the AONB.

The National Planning Policy Framework (NPPF) makes clear that the purpose of planning is to help achieve sustainable development (Section 2), and that good design (Section 12) and effects on the natural environment (Section 15) are important components of this.

Paragraph 170 requires that decisions should protect and enhance valued landscapes and recognise the intrinsic character and beauty of the countryside.

Local planning policy is contained within the following documents:

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- Sevenoaks District Council Adopted Core Strategy Development Plan (2011) [6];
- Sevenoaks District Council Adopted Allocations and Development Management Plan (ADMP) (2015) [7];
- Sevenoaks District Council Proposed Submission Version of the Local Plan (2018) [8].

It is noted that the application site is already allocated for mixed-use development.

In general planning policy seeks to ensure new development responds to local character and context. Within the AONB development proposals will only be permitted where the form, scale, materials and design would conserve and enhance the character of the landscape. Local planning policy also promotes the creation and/or enhancement of green infrastructure, creating new landscape / habitat features and supporting appropriate public access.

## Consultees

Details of the scope / methodology for the LVIA was set out within the EIA Scoping Report which was subject to consultation with SDC.

The Kent Downs AONB Unit has also be consulted, including a meeting on 27<sup>th</sup> November 2018 and site walk-over / attendance at the public consultation event in January 2019.

## Scoping

SDC's comments on the Scoping Report supported the production of a full LVIA and agreed with the methodology proposed. They also recommend an assessment of the impacts of development on the special characteristics and qualities of the AONB, along with consideration of lighting / night time effects. Similar comments were also made by the Kent Downs AONB Unit. The consultation responses provided in the Scoping Opinion in relation to this topic are repeated in Table 7.1 below. For each comment, it is stated how this has been addressed in the chapter.

**Table 7.1**

Responses to Scoping Opinion Comments

CONSULTEE COMMENT	HOW ADDRESSED IN ES CHAPTER
Given the scale of the development and the fact that the site lies wholly within the AONB, we consider that the ES should include an assessment of both the direct and indirect impacts of the proposal on the special characteristics and qualities of the Kent Downs AONB and the purpose of its designation i.e. the conservation and enhancement of natural beauty as well as the policies of the AONB Management Plan. In addition to obvious issues of importance to the AONB such as landscape and biodiversity, it will also be important for potential impacts on tranquillity including noise and light pollution, visitor pressure and transport impacts on the AONB to be assessed within the ES.	A separate AONB Report has been prepared which considers the impact of the proposed development on the natural beauty criteria of the Kent Downs AONB, with refence to the AONB Management Plan and other relevant policy and guidance (provided in Appendix 7.2, ES Volume III).
The AONB agrees that the ES should include a full Landscape and Visual Impact Assessment and agrees with the proposed methodology. We also agree that a Lighting and Night Time Assessment should also be undertaken as part of the ES. It will be important for this include an assessment of the development on the dark skies and tranquillity of the Kent Downs AONB.	The ES includes a Landscape and Visual Impact Assessment, which should be read in conjunction with the Landscape and Visual Impact Assessment Report (provided in Appendix 7.1, ES Volume III). A Summary Lighting Assessment has also been prepared which considers the impact of the proposed development on the night-time environment and recommends an outline lighting strategy. The findings of the Summary Lighting Assessment study have informed judgements made on the night time landscape and visual environment, as recorded in the Landscape and Visual Impact Assessment Report and AONB Report.

CONSULTEE COMMENT	HOW ADDRESSED IN ES CHAPTER
Given that a significant amount of tree cover in this locality is likely to comprise Ash, it will be important that the likely impacts of ash die back disease is fully taken into account in assessing the visual impact of the proposal.	The planning application is accompanied by an Arboricultural Impact Assessment which identifies existing tree stock and considers the impact of the proposed development on existing trees. The Arboricultural Impact Assessment finds that the majority of tree stock within and around the site comprises oak, sweet chestnut and birch, with relatively little ash. It is considered that even if the ash trees were subject to ash die back disease, there would remain a significant belt of vegetation around the site such that the character and degree of containment would prevail. In addition future detailed landscape designs will carefully consider species selection in order to provide diversity and reliance, and future landscape management proposals should include a programme to monitor ash die back disease and plant new trees as necessary.
It is also considered necessary to assess the impacts of increased visitor pressure on the Kent Downs AONB. While the provision of Green Infrastructure within the site may assist in ensuring pressure for recreational and leisure use on a regular and daily basis is not deflected into the surrounding AONB and other sensitive areas, the significant increase in population and proximity to the AONB will be likely to result in an increase in people using the AONB for recreational purposes, the impacts of which need to be assessed as part of the ES. This should include potential impacts on access land, rights of way, public open land and woodland and carparks serving such areas as well as on biodiversity. Right of Way Improvement Plans will assist in identifying Public Rights of Way that require enhancement.	The Ecological Impact Assessment considers the effects of additional recreational pressure on key off-site receptors, including certain sites within the AONB. It is concluded that any recreation disturbance can be mitigated by access management measures, such as the provision of clearly defined pathways away from landscapes / habitats of greatest value and provision of appropriate signage and interpretation. In addition, as set out in the AONB Report, it is considered that there are beneficial effects on the understanding and enjoyment of the AONB resulting from creation of public access to a currently private site and the interpretation of the site's heritage and landscape context.

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CONSULTEE COMMENT	HOW ADDRESSED IN ES CHAPTER
It will also be important to ensure that the impacts of the development in terms of higher usage of roads and potential traffic diversion/displacement on the rural roads of the AONB are fully assessed and mitigation measures proposed to address any identified issues.	The Transport Assessment considers the effects of development on traffic and vehicle movements. It is concluded that there would be relatively minor changes to the number of vehicle movements and no physical change to the local road network within the AONB. In addition, a Travel Plan is proposed which would include a range of measures that encourage sustainable forms of transport and minimise reliance on single occupancy car journeys. This includes the upgrade of existing footpaths and the provision of bus services. These measures will reduce the reliance on the private car and help to reduce traffic flows on the various roads within the site that fall within the AONB.

### Consideration of Climate Change

The landscape is sensitive to gradual changes in climate and to more abrupt changes caused by extreme weather events. This could affect the resilience of existing landscape / habitat features within the application site, in particular tree health which may be impacted by water stress, temperature change and pathogens and viruses (such as ash die back, as reported on in Table 7.1)

In order to mitigate against the effects of climate change, the proposed development incorporates a comprehensive green infrastructure strategy which seeks to make the landscape of the application site more resilient, buffering and extending the area of woodland around the application site; creating a more diverse mosaic of woodland, trees, scrub and grassland; and better linking existing areas of landscape / habitat.

The active management of the landscape will ensure it is appropriately maintained in the long-term, and the detailed landscape design should carefully consider species selection in order to provide diversity and reliance.

While climate change has the potential to alter the landscape in longer term, overall it is considered that such changes would not influence the judgements made in the LVIA and that the design of the proposed development incorporates sufficient measures to mitigate against the effects of climate change on the landscape.

Further information regarding the consideration of climate change may be found at Appendix 2.4.

### Consideration of Human Health

Human health is not affected by landscape and visual issues and is not considered further within this chapter. However, the health benefits of living in proximity to trees and green space are well documented, and the design of the proposed development includes a comprehensive green infrastructure strategy. Wider consideration of human health is provided at Appendix 2.5 Vol III of this ES.

### Consideration of Risk of Major Accidents and/or Disasters

The risks of major accidents and/or disasters identified and considered is addressed in Appendix 2.6 Vol III of this ES. Risks of major accidents and/or disasters are not judged relevant to landscape and visual issues and are not considered further within this chapter.

### Alternatives

Alternative locations have not been considered due to the clear intent of the proposed development within planning policy. However, the LVIA Report considers the effect of the proposed development on both the existing baseline environment and future baseline environment.

The existing baseline environment refers to the existing land-use, character and visual amenity of the application site in its current form – i.e. occupied by defence related industries.

The future baseline environment refers to the future land-use, character and visual amenity of the application site assuming the permitted development (of up to 450 dwellings and employment uses) is built out.

The effects of construction activity are considered on the existing baseline environment only. It is considered that construction activity would have a similar effect on landscape and visual receptors regardless of whether the application site was occupied by defence related industries or mixed-use residential / employment development.

The effects of the operational development are considered on both the existing baseline environment and the future baseline environment. It is considered that the effects of the operational development on landscape and visual receptors would vary depending on whether the application site was occupied by defence related industries or mixed-use residential / employment development.

As set out in this chapter, there are a range of effects arising from the operational development in the existing baseline. The post-mitigation effects range from minimal neutral to major-moderate beneficial. When considering the effects arising from the operational development on the future baseline, all effects are considered to be minimal neutral. While the extent and layout of the proposed development will change when compared to the permitted development, there will be no discernible effects to the overall character or appearance of the application site.

### Assessment of Baseline Conditions & Receptor Sensitivity

Baseline conditions have been assessed through a combination of desk and field study. Desk study includes the review of the key guidance documents of relevance to the landscape and visual context, including:

- Kent Downs AONB Management Plan 2014 -2019 (Second Version, 2014) [9];
- The Kent Downs AONB Landscape Design Handbook (undated) [10];
- Kent Design Guide (undated) [11];
- Adopted Development in the Green Belt SPD (2015) [12];
- Sevenoaks District Council Green Infrastructure Topic Paper (2013) [13];
- National Character Area (NCA) Profile 119: North Downs (2013) [14];
- Landscape Character Assessment of Kent (2004) [15];
- Kent Downs AONB Landscape Design Handbook (1995) [10];
- Sevenoaks Landscape Character Assessment (2014) [16].

Consideration is also given to the 'future baseline' conditions resulting from the permitted development, based on the approved planning application (reference 15/00628/OUT).

It is accepted practice within landscape and visual assessment work that the extent of the study area for a development proposal is broadly defined by the visual envelope of the application site and the anticipated extent of visibility arising from the proposed development itself, based on the Zone of Theoretical Visibility (ZTV) study. In this case a study area of 7.5km has been used to cover all potentially material landscape and visual impacts and this is consistent with the study area used for the 2015 LVIA.

Effects are considered during construction; the period following completion prior to the maturing of mitigation planting; and once the mitigation planting is mature.

Effects are considered on the following receptors:

- Landscape Receptors
  - Kent Downs AONB Landscape Design Handbook
    - LCA1: Darent Valley
  - Sevenoaks Landscape Character Assessment
    - Knockholt and Halstead Wooded Downs LCA
    - Chevening Scarp LCA
    - Westerham to Sundridge Parks and Farmlands LCA
- Visual Receptors
  - Settlement
    - Houses along Crow Drive, Armstong Close and Fort Drive
    - Halstead

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- Knockholt and Knockholt Pound
- Otford (inc. Twiton and Shoreham)
- Sevenoaks (inc. Dunton Green and Riverhead)
- Principal Routes
  - M25
  - A224
  - A25
- Local Roads
  - Star Hill Road
  - Otford Road
- Recreational Routes
  - North Downs Way
  - Darent Valley Path
  - Public Rights of Way SR97/SR172/SR722

The sensitivity that has been applied to receptors is derived from a combination of susceptibility and value.

Susceptibility indicates the ability of a landscape or visual receptor 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.” (GLVIA3, para. 5.40). It is defined as follows:

- High - Undue consequences are likely to arise from the proposed development.
- Medium - Undue consequences may arise from the proposed development.
- Low - Undue consequences are unlikely to arise from the proposed development.

Value is “the relative value that is attached to different landscapes by society” (GLVIA3, page 157). For landscape receptors it is defined as:

- National/International - Designated landscapes which are nationally or internationally designated for their landscape value.
- Local / District - Locally or regionally designated landscapes; also areas which documentary evidence and/or site observation indicates as being more valued than the surrounding area.
- Community - ‘Everyday’ landscape which is appreciated by the local community but has little or no wider recognition of its value.
- Limited - Despoiled or degraded landscape with little or no evidence of being valued by the community.

For visual receptors susceptibility and value are closely linked - the most valued views are also likely to be those where viewer’s expectations will be

highest. Those visual receptors of highest susceptibility and value are likely to include:

- Visitors to valued viewpoints or routes which people might visit purely to experience the view, e.g. promoted or well-known viewpoints, routes from which views that form part of the special qualities of a designated landscape can be well appreciated; key designed views; panoramic viewpoints marked on maps.
- People in locations where they are likely to pause to appreciate the view, such as from local waypoints such as benches; or at key views to/from local landmarks. Visitors to local attractions, heritage assets or public parks where views are an important contributor to the experience, or key views into/out of Conservation Areas.
- Users of promoted scenic rail routes.

Sensitivity is assessed by combining the considerations of susceptibility and value, and ranges from ‘high’ to ‘negligible’ as summarised below.

**Table 7.2**

Scale of landscape and visual sensitivity used in the assessment

SENSITIVITY	DESCRIPTION
High	A landscape or visual receptor of relatively high value and that is likely to experience undue consequences as a result of the proposed development
Medium	A landscape or visual receptor of some value and that may experience undue consequences as a result of the proposed development
Low	A landscape or visual receptor of relatively low value and that is unlikely to experience undue consequences as a result of the proposed development
Negligible	A landscape or visual receptor of limited value and that is likely to experience no discernible change as a result of the proposed development

Further details on susceptibility and value, and how these factors combine to inform judgements on sensitivity, can be found in the Landscape and Visual Impact Assessment Report.

### Assessment of Magnitude

The assessment was undertaken based on the description of development contained in chapter 3 of this volume of the ES.

Magnitude of effect is assessed by combining scale, duration and extent, as summarised below:

- Scale of effect is assessed for all landscape and visual receptors and identifies the degree of change which would arise from the development.
  - Large- Total or major alteration to key elements, features, qualities or characteristics, such that post development the baseline will be fundamentally changed.
  - Medium - Partial alteration to key elements, features, qualities or characteristics, such that the baseline will be noticeably changed.

- Small - Minor alteration to key elements, features, qualities or characteristics, such that the baseline will be largely unchanged despite discernible differences.
- Negligible - Very minor alteration to key elements, features, qualities or characteristics, such that the baseline will be fundamentally unchanged with barely perceptible differences.

■ Duration of effect is assessed for all landscape and visual receptors and identifies the time period over which the change to the receptor as a result of the development would arise.

- Long-term - The change is expected to be in place for 12 years +-
- Medium-term - The change is expected to be in place for 6-11 years
- Short-term - The change is expected to be in place for 0-5 years

Effects may also be described as temporary or permanent.

■ Extent of effects is assessed for all receptors and indicates the geographic area over which the effects will be felt.

- Wide - Beyond 4km, or more than half of receptor.
- Intermediate - Up to approx. 2-4km, or around half of receptor area.
- Localised – Application site and surroundings up to 2km, or part of receptor area (up to approx. 25%).
- Limited - Application site, or part of site, or small part of a receptor area (< approx. 10%).

Overall scale is the primary factor in determining magnitude; magnitude will typically be judged to be the same as scale but may be higher if the effect is particularly widespread and long lasting, or lower if it is constrained in geographic extent or timescale.

Table 7.3 indicates the scale of impact magnitude that has been used in undertaking the assessment.

**Table 7.3**

Scale of magnitude for landscape and visual impacts used in the assessment

MAGNITUDE	DESCRIPTION
High	A large scale of change, typically over a large area and for a long / permanent duration
Medium	A medium scale of change, typically over an intermediate area; and for a moderate duration
Low	A small scale of change, typically over a small area; and for a short duration
Negligible	An indiscernible scale of change

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Further details on scale, duration and extent, and how these factors combine to inform judgements on magnitude, can be found in the Landscape and Visual Impact Assessment Report.

### Assessment of Significance

Significance indicates the importance or gravity of the effect. The process of forming a judgement as to the degree of significance of the effect is based upon the assessments of magnitude of effects and sensitivity of the receptor to come to a professional judgement of how important this effect is.

The assessment of significance within this chapter is illustrated by the matrix presented in Table 7.4.

It should be noted that the terminology for the significance of the effect (as presented in Table 7.4 below) is consistent with other ES chapters, allowing for a standardised assessment of effects. However, in accordance with the main LVIA Report and stated LVIA methodology, 'minor' effects are recorded as 'slight'; and negligible effects are recorded as 'minimal'.

**Table 7.4**

Significance Matrix

MAGNITUDE OF EFFECT	SENSITIVITY OF RECEPTOR			
	High	Medium	Low	Negligible
High	Major Significance	Major-Moderate Significance	Moderate Significance	Minor Significance
Medium	Major-Moderate Significance	Moderate-Moderate Significance	Minor Significance	Negligible Significance
Low	Moderate Significance	Moderate-Minor Significance	Minor Significance	Negligible Significance
Negligible	Minor Significance	Negligible Significance	Negligible Significance	Negligible Significance

The significance ratings indicate a 'sliding scale' of the relative importance of the effect, with Major being the most important and Minimal being the least. Effects that are Major-Moderate or Major are considered to be significant. Effects of Moderate significance or less are "of lesser concern" (GLVIA, 3rd edition, para 3.35). It should also be noted that whilst an effect may be significant, that does not necessarily mean that such an impact would be unacceptable or should necessarily be regarded as an "undue consequence" (GLVIA, 3rd edition, para 5.40).

Where intermediate ratings are given, e.g. 'Moderate-Slight', this indicates an effect that is both less than Moderate and more than Slight, rather than one which varies across the range. In such cases, the higher rating will always be given first; this does not mean that the impact is closer to that higher rating but is done to facilitate the identification of the more

significant effects within tables. Intermediate judgements may also be used for judgements of Magnitude.

Whether an effect is Beneficial (Positive), Neutral or Adverse is identified based on professional judgement. GLVIA 3rd edition indicates at paragraph 2.15 that this is a "particularly challenging" aspect of assessment, particularly in the context of a changing landscape.

### Relevant Associated Development

There is no associated development that is of relevance to this chapter.

### Assumptions/Limitations

In undertaking the landscape and visual assessment, there are a number of limitations and constraints affecting the outputs from this work. These include:

- The LVIA Report includes a Zone of Theoretical Visibility (ZTV) study. It should be noted that this is a theoretical model that illustrates the maximum theoretical visibility of development and is used to inform the assessment process. It should also be noted that the ZTV does not take into account any localised features such as small copses, mature trees and hedgerows which can have significant screening properties. Consequently, the actual visibility when on the ground is likely to be substantially less than that shown on the ZTV
- The ZTV is based on the indicative ground model for the application site, prepared in discussion between the masterplanners and engineers. Levels vary across the application site, with many of the larger buildings spanning changes in level that allow level access at one end but are partially buried at the other. A ground modelling exercise was undertaken aimed at creating suitable development platforms whilst minimising cut and fill.
- The LVIA has been informed by a series of field visits undertaken during 2018 / 2019, and also draws upon the findings of desk and field study undertaken as part of the original LVIA. Photography is presented from all field study undertaken, including summer time (2014 / 2018), winter time (2014) and night time (2014) views. The wireframes presented within the LVIA Report use the verified photography taken in 2014, allowing for ease of comparison with the wireframes presented in the original LVIA, however, field work has confirmed there is no discernible changes between the 2014 and 2019 baseline environment.
- The assessment of effects within the ES chapter is undertaken against the baseline of the existing land-use, character and visual amenity of the application site in its current form – i.e. occupied by defence related industries. However, it is acknowledged that there is a future baseline, assuming the permitted development (of up to 450 dwellings and employment uses) is built out. The LVIA Report therefore considers the effects of the proposed development on both the existing and future baseline environments.

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### 7.3 BASELINE CONDITIONS

The landscape and visual receptors considered in this assessment are set out below. As detailed in the LVIA Report (Appendix #.#, ES Volume III), other receptors are excluded based on the likelihood of there being no discernible effects on landscape character and views, based on the findings of the ZTV and field study.

#### Landscape Receptors

RECEPTOR	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
Kent Downs AONB	The application site is within the Kent Downs AONB. This is a designation afforded to landscapes that are of national importance and provides a legislative obligation to 'conserve and enhance the natural beauty' of the landscape. The LVIA considers the impacts of Development on the landscape character areas identified by the Landscape Character Assessment of the Kent Downs AONB (reported below) and impacts to its natural beauty are considered in the stand-alone AONB Report.	-	AONB Report
LCA1: Darent Valley	Includes the application site. Occupies a broad sweep of land between Westerham to Farningham west to east and Sevenoaks and the edge of Greater London north to south. Key characteristics include the wooded scarp slope; dense settlement; and influence exerted by the M25 motorway. As the proposed development would be contained entirely within the footprint of previously developed land associated with the existing defence research facility the susceptibility of the Darent Valley LCA is judged to be Medium. The Darent Valley LCA falls within the Kent Downs AONB and it therefore judged to be of National / International Value, and is therefore judged to have High-Medium sensitivity overall.	High-medium	LVIA Report / Section 5.0
3a: Knockholt and Halstead Wooded Downs LCA	Includes the application site. Occupies an area of chalk downland extending from Knockholt in the south-east to Well Hill in the north west. Key characteristics include gently undulating but with steep valley slopes; mainly agricultural but with plant nurseries, horsiculture, residential, commercial and recreational land uses; large areas of woodland, including ancient coppice woods. The Sevenoaks Landscape Character Assessment states that "intrusive new residential development, extensive horsiculture, urban recreation, and hedgerow loss have adversely affected the condition of this area. Nevertheless, historic field patterns, areas of woodland and rough grassland provide a sense of intactness and ecological connectivity". As the proposed development would be contained entirely within the footprint of the existing defence research facility the susceptibility of the Knockholt and Halstead Wooded Downs LCA is judged to be Medium. The Knockholt and Halstead Downs LCA falls within the Kent Downs AONB; however, its condition diminished by existing residential development, extensive horsiculture, urban recreation, and hedgerow loss. It is therefore judged to be of Local Value and Medium Sensitivity overall.	Medium	LVIA Report / Section 5.0
5a: Chevening Scarp LCA	Includes part of the wider survey area which would be subject to enhancement. Occupied by an area of woodland scarp slope extending from near Westerham in the south-west and to Shoreham in the north-east. Key characteristics include the steep wooded scarp supporting a mosaic of woodland and scrub, pasture and pockets of chalk grassland; steep enclosed lanes with no verges and high hedged banks; and long-distance panoramic views across the Darent Valley from the scarp. The Sevenoaks Landscape Character Assessment states that "the landscape has an intact and coherent pattern of pastures, chalk grassland and frequent blocks of ancient woodland. There are relatively few visual detractors although unsympathetic farm buildings and the presence of the M25 in the valley below are detractors. The decline of the heritage shaws and hedgerows (sometimes replaced with post and wire fencing) has also had an adverse effect on the condition of the landscape". As the proposed development would be contained entirely within the footprint of the existing defence research facility, but acknowledging that there may be some changes within the wider survey area, the susceptibility of the Chevening Scarp LCA is judged to be Medium. The Chevening Scarp LCA falls within the Kent Downs AONB; however, its condition is diminished by the presence of the M25 and the decline of shaws and hedgerow loss. It is therefore judged to be of Local Value and Medium Sensitivity overall.	Medium	LVIA Report / Section 5.0
9a: Westerham to Sundridge Parks and Farmlands LCA	Approximately 3.5km to the south of the application site and with potential intervisibility with the application site. Occupies an area of estate and farm land extending south of Westerham / Sundridge and extending up the Greensand Ridge. Key characteristics include undulating slopes of the Greensand Ridge supporting small to medium scale fields; strong network hedgerows and woodland; and glimpsed views out northwards to the North Downs scarp. The Sevenoaks Landscape Character Assessment states that "the shaws, intact field boundaries and historic parkland contribute positively to landscape condition, while detractors include the A21 crossing the landscape, traffic noise from the A21 and M25, loss of parkland to arable and golf course (e.g. at Valence), and modern housing development". As the proposed development would be contained entirely within the footprint of the existing defence research facility, but acknowledging that the LCA is located approximately 3.5km to the south of the application site, the susceptibility of the Westerham to Sundridge Parks and Farmlands LCA is judged to be Low. The majority of the Westerham to Sundridge Parks and Farmlands LCA falls within the Kent Downs AONB. Despite a number of notable detractors, the landscape is considered to be relatively intact and in good condition. Therefore, the Westerham to Sundridge Parks and Farmlands LCA is judged to be of National / International Value and Medium Sensitivity overall.	Medium	LVIA Report / Section 5.0

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### Visual Receptors

For the purposes of the visual baseline, visual receptor sensitivity for areas of settlement and recreational routes are considered to be High-Medium, where viewers expectations are likely to be higher but acknowledging that these places and routes are not necessarily valued viewpoints in their own right. The tumulus at Otford Mount, approximately 3.5km to the east of the application site, is shown as a recognised viewpoint on OS mapping and is also on the North Downs Way. However, the orientation of the view is shown to the south, and views westward toward the application site are largely blocked by intervening woodland and vegetation aligning the North Downs Way itself. The view from Otford Mount tumulus is therefore not considered further within the LVIA, however, views from the North Downs Way are assessed. The visual receptor sensitivity for key routes and local roads is considered to be Medium-Low, where viewer expectations are likely to be lower.

RECEPTOR	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
<i>Settlement</i>			
Houses along Crow Drive, Armstrong Close and Fort Drive (adjacent to the site)	Immediately to the north of the application site. From Crow Drive there are relatively open views of the existing Fort Halstead complex with the perimeter fence and reception building visible. There are also open views across the existing helipad site. From along Armstrong Close and Fort Road, the majority of the application site is screened from view by boundary vegetation along private gardens and along the northern application site boundary, however, some taller elements of built form within the application site can be seen above the boundary vegetation from along Armstrong Close, namely Building N2.	High-Medium	LVIA Report / Section 5.0
Halstead	Approximately 1km to the north of the application site. The ZTVs indicate some of the southern fringe areas of have potential visibility of the application site and proposed development. However, field survey confirms that the majority of the application site is screened from view by vegetation around the perimeter of the application site.	High-Medium	LVIA Report / Section 5.0
Knockholt and Knockholt Pound	Approximately 400m to the north-west of the application site. The ZTV studies indicate there is limited opportunities for views of the application site and proposed development from Knockholt and Knockholt Pound as a result of intervening vegetation. Field study has confirmed that the majority of the application site is screened from view.	High-Medium	LVIA Report / Section 5.0
Otford (inc. Twitton and Shoreham)	Approximately 1km south-east of the application site. In views from the south-east, the wooded slopes of the escarpment form a prominent feature, rising from the Darent Valley floor. The majority of built form within the application site is hidden by the southern perimeter vegetation although the pipework of flues on Buildings A28 and A10 and the roof line of Building A10 can just be seen rising above this.	High-Medium	LVIA Report / Section 5.0
Sevenoaks (inc. Dunton Green and Riverhead)	Approximately 2.5km to the south of the application site. The scarp slope is a notable feature in views from certain locations of the northern edge of Sevenoaks and within the settlement itself. The fence line and former quarry workings at North Downs Business Park can be seen along the southern edge of the application site, along with the flues of research buildings A10 and A28 and also buildings M25, X40 and X54.	High-Medium	LVIA Report / Section 5.0
<i>Principle Routes</i>			
M25	Approximately 500m to the south / south-east of the application site (but in closer proximity to the north-east of the application site). The M25 is the main arterial route around outer London and runs south-west to north-east through the study area. Open views of the scarp slope and perimeter woodland are possible from the M25 as it sweeps to the south of the application site, but intervening woodland screens views where the M25 passes to the east of the application site.	Medium-Low	LVIA Report / Section 5.0
A224 Polhill	Approximately 500m to the south the application site; within 100m to the east of the application; and adjoining the application site to the north-east. The A224 Polhill runs adjacent to the eastern boundary of the application site leading northward from Junction 5 of the M25. Open views of the scarp slope and perimeter woodland are possible from the A224 as it sweeps to the south of the application site, but intervening woodland screens views where the A224 passes to the east of the application site. Further north there are open views of the application site where it encompasses the Otford Lane / Crow Drive / Polhill junction.	Medium-Low	LVIA Report / Section 5.0
A25	Approximately 3km to the south-west of the application site. The A25 runs parallel to the M25 to the south. Open views towards the application site are possible, although the sinuous nature of the route and road-side vegetation limits views. Where opportunities exist, the chalk scarp slope, perimeter vegetation and Buildings X40 and X54 beyond the perimeter vegetation are visible.	Medium-Low	LVIA Report / Section 5.0
<i>Local Roads</i>			
Star Hill	Star Hill Road runs from the A224 Polhill / Morants Court Road northward to Knockholt. From the junction with Polhill / Morants Court Road, there are open views towards the application site of the scarp slope face, perimeter security fence and Buildings X54 and X40 are possible. Further north, Star Hill Road runs along the application site's western boundary. From this section of the route, views into the application site are generally screened by perimeter vegetation. There are views into the application site from the Star Hill / Crow Drive junction, however, views are dominated by the security gate, gatehouse and security lighting and only the western end of the application site is visible.	Medium-Low	LVIA Report / Section 5.0
Otford Lane	Otford Lane runs approximately 800m to the north of the application site, running between the A224 in the east and Halstead in the west. It is a narrow lane with a strong network of vegetation lining its course, limiting the opportunity for views of the application site. Where gaps in the aligning hedgerow or field gateways occur, the application site is screened by the perimeter vegetation that forms the applications site's northern boundary, although Building N2, and the Boiler House chimneys of Building S2 are visible above the tree line.	Medium-Low	LVIA Report / Section 5.0
<i>Recreational Routes</i>			

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RECEPTOR	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
North Downs Way	The North Downs Way runs from Farnham in Surrey to Dover on the south-east coast of Kent for a distance of approximately 251km. The route passes to the west and south of the application site, running at its nearest point parallel to the west of Star Hill Road. However, views from this stretch of the route are filtered by vegetation aligning Star Hill Road. More open views towards the application site are possible from where the route runs to the south of the application site, along the B2211 Sundridge, A224 Morants Court Road, and coinciding with the Darent Valley Path. In these views the chalk scarp face and southern boundary perimeter vegetation are notable landmarks within the landscape. Existing buildings including Buildings X40 and X54 and chimneys of Building A28 can also be seen but views into the application site beyond the perimeter woodland are not possible. There are also glimpsed view towards the application site to the east, where the North Downs Way extends from Otford and along higher ground around Otford Mount, however, the application site itself is screened the perimeter vegetation and at this distance, none of the existing built form is discernible.	High-Medium	LVIA Report / Section 5.0
Darent Valley Path	The Darent Valley Path is a waymarked path running 30.5km along the banks of the River Darent. Owing to topography, views towards the application site are limited to a short stretch between Dunton Green and Chipstead to the south of the application site. In these views, the chalk escarpment, security fencing and Buildings X40, X54 and roofline of A10 can be seen but views into the application site beyond the perimeter vegetation are not possible.	High-Medium	LVIA Report / Section 5.0
Other Public Rights of Way	In terms of local PRoWs, footpaths SR97, SR172 and SR722 run around the perimeter of the application site outside of the security fencing. Views into the application site are restricted by the perimeter woodland and shelter belt planting although open views of the scarp slope are possible from the Footpath SR722. Views of the scarp slope are also possible from Bridleway SR728 (which links Lime Kiln Lane to Polhill Road) but from this route the majority of the application site is hidden by the perimeter vegetation. From PRoW on higher ground to the east of the application site, such as SR60, there are open views towards the application site and the scarp is clearly visible and in contrast to the intervening valley landscape. However, the perimeter vegetation would largely screen views of the application site itself and as this distance none of the existing built form is discernible.	High-Medium	LVIA Report / Section 5.0

### Future Baseline

Overall it is considered that the permitted development would not fundamentally alter the landscape character of the Knockholt and Halstead Downs, Knockholt Scarp or wider landscape. The application site would remain a developed area within a mainly agricultural landscape and would not substantially alter the topography of the application site; the mosaic of surrounding woodland; or the chalk scarp. At the site scale, the permitted development would enhance the character and amenity of the application site by removing many of the existing industrial buildings and large areas of hard standing; creating a more legible site layout with high quality buildings and spaces; creating new areas of green infrastructure; and retaining, protecting and enhancing key features such as the ancient woodland and chalk grassland. There would be a loss of trees resulting from the proposed development, however, the design of the development seeks to retain existing trees where possible; new tree planting is proposed throughout the application site; and new and retained trees / woodland would benefit from improved management.

Visually, the ZTV studies have indicated that there would be very little perceptible difference between the existing development on application site and the permitted development due to the screening nature of the surrounding woodland. Some taller elements, namely the energy centre chimney and the maximum height of the new employment park in places, would potentially break this vegetation but would appear as small features within the wider panorama and off-set by the removal of existing tall structures and chimneys.

In relation to the AONB, the permitted development would deliver a range of environmental improvements and benefits the natural beauty criteria of the AONB. Specifically, the permitted development would enhance natural heritage features, ensuring the sensitive management of the woodland, mature trees and areas of chalk, semi-improved and neutral grassland. The permitted development would also benefit the understanding and enjoyment of the AONB, and the social and economic wellbeing of communities within the AONB. A range of new housing, employment and recreational facilities would be created, including providing public access and interpretation of the application site.

### 7.4 POTENTIAL SIGNIFICANT IMPACTS

Potential impacts during the construction and operational phases of the development are summarised below.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	Changes to the character of the application site as a result of construction activity and movements of vehicles / machinery	Adverse
Construction	Changes to the fabric of the application site as a result of the demolition of buildings, removal of trees and reprofiling	Adverse
Construction	Changes to the views within and across the application site as a result of construction activity / demolitions	Adverse
Construction	Potential changes to character / views within the surrounding area due to construction activity being visible above the perimeter woodland	Adverse
Construction	Potential changes to character / views within the surrounding area due to the demolition of existing structures that are visible above the perimeter woodland	Beneficial
Operation	Changes to the character of the application site as a result of changes to land use, layout, scale and appearance of built development within the application site	Adverse, neutral or beneficial subject to design



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PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Operation	Changes to the views within and across the application site as a result of changes to land use, layout, scale and appearance of built development within the application site	Adverse, neutral or beneficial subject to design
Operation	Potential changes to character / views within the surrounding area due to completed development being visible above the perimeter woodland	Adverse or neutral subject to design
Operation	Potential changes to character / views within the surrounding due to the retention and enhancement of land within the wider survey area (for landscape, heritage, ecology and drainage functions)	Beneficial

### 7.5 DESIGN INTERVENTIONS

Landscape and visual considerations have informed the design of the proposal from the outset, and the design principles remain as per the permitted development project. Key design interventions are summarised below.

DESIGN INTERVENTION	DESCRIPTION	REASON FOR INTERVENTION	FURTHER INFORMATION
Layout	New housing and employment land uses are located within area of previously developed land	To ensure development does not encroach into the landscape beyond the footprint of the existing land uses and that existing green infrastructure is retained	LVIA Report / Section 6.0
Topography	No major changes to the topography of the application site, including no significant ground raising	To ensure development is not visually prominent within the surrounding landscape; to enable existing trees and woodland to be retained; and to ensure the structure / fabric of the application site is not fundamentally altered	LVIA Report / Section 6.0
Woodland	Retention and enhancement of existing woodland	To ensure the development is well screened; and to maintain the wooded character of the application site	LVIA Report / Section 6.0
Trees	Retention and enhancement of individual trees wherever possible	To maintain the wooded character of the application site; and to enhance the amenity value of the public realm / green spaces	LVIA Report / Section 6.0
Grassland	Retention and enhancement of open areas of grassland to the south and west of the application site	To maintain areas of open, undeveloped land around the application site; to protect the scarp slope, which is a key characteristic of the local landscape and visually sensitive; and to enhance the appearance and amenity value of these spaces.	LVIA Report / Section 6.0
PRoW	Retention of all PRoW within / close to the application site and partial upgrade of footpath SR172 - between the application site and Knockholt Pound – to a cycle path	To maintain access to the landscape; and promote the understanding and enjoyment of the AONB	LVIA Report / Section 6.0
Heritage assets	Retention and enhancement of key heritage features within the application site, including reuse of the historic fort as an interpretation centre / work space	To maintain cultural associations within the landscape; and promote the understanding and enjoyment of the AONB	LVIA Report / Section 6.0
Green Infrastructure	Creation of new green infrastructure throughout the application site, including new public open space, pedestrian / cycle routes and signage	To enhance the character and appearance of the proposed development; and promote the understanding and enjoyment of the AONB	LVIA Report / Section 6.0
Security Fence	Partial removal of the perimeter security fence (a new security fence would be built for QientiQ)	To enhance the character and appearance of the proposed development, in particular the amenity of PRoW users along routes to the north of the application site	LVIA Report / Section 6.0
Lighting	Removal of intrusive security lighting and all new lighting designed to minimise light spill	To enhance the night-time character and appearance of the application site; and reducing the amount of light intrusion within the AONB	LVIA Report / Section 6.0

### 7.6 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

The table below provides an assessment of the effects of the proposed development pre mitigation (but including any design intervention). The assessment of effects is based on the existing baseline conditions.

As set out in the supporting LVIA Report, the effects of the proposed development are also considered on the future baseline environment – i.e. assuming the permitted development of up to 450 new homes and employment park has been built out. For all landscape and visual receptors it is concluded that the operational proposed development would result in no perceptible change to landscape character or views, resulting in a negligible magnitude of effect; of negligible significance and neutral overall.

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### Landscape Receptors

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	LCA1: Darent Valley	During construction the only area of landscape likely to experience a large scale of impact is within the application site itself, which would change from a defence research facility to an area of construction activity. The application site occupies a relatively small area of the wider Darent Valley LCA and the surrounding landscape would not be discernibly affected by the proposed development as construction activity would appear as a small feature within the wider landscape. In addition there would be no discernible change to any of the key characteristics of Darent Valley LCA.	Low	Minor Adverse	Yes	LVIA Report / Section 7.0
Construction	3a: Knockholt and Halstead Wooded Downs	During construction the only area of landscape likely to experience a large scale of impact is the application site itself, which would change from a defence research facility to an area of construction activity. While the application site falls largely within the Knockholt and Halstead Downs LCA, the vast majority of the surrounding landscape would not be affected by the proposed development, and there would no discernible change to any of the key characteristics of Knockholt and Halstead Downs LCA. At the site scale, construction would have a greater effect, introducing machinery and plant, and gradually new built development, into the already existing built form of the landscape. Construction would also add additional movement and activity into the landscape. However, the application site is already characterised by buildings and structures, and there are existing sources of disturbance as a result of the ongoing operational activity associated with DSTL and QinetiQ. There would be a degree of change to the pattern of trees and vegetation within the application site as the proposed development would result in some removal of trees, although where possible trees would be retained and integrated into the layout of the proposed development. However, all woodland within the wider survey area would be retained.	Low	Minor Adverse	Yes	LVIA Report / Section 7.0
Construction	5a: Chevening Scarp LCA	No construction activity would occur within the Chevening Scarp LCA itself and there would be no discernible change to any of the key characteristics of this LCA. There may be minor alterations to the baseline environment resulting from the proximity of the Chevening Scarp LCA to the application site and presence of machinery (such as cranes) protruding above the existing perimeter woodland.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Westerham to Sundridge Parks and Farmlands	No construction activity would occur within the Westerham to Sundridge Parks and Farmlands LCA itself and there would be no change to any of the key characteristics of this LCA. Any change to outward views from the Westerham to Sundridge Parks and Farmlands LCA would be barely perceptible.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	LCA1: Darent Valley	During operation of the proposed development the only area of landscape likely to experience a large scale of impact is the application site itself, which would change from a defence research facility to an area of employment and residential development, with associated road infrastructure and open space. The application site occupies a relatively small area of the wider Darent Valley LCA, and the surrounding landscape would experience no discernible change to any of the key characteristics of Darent Valley LCA. The proposed development has the potential to enhance the overall character of the application site by removing many of the existing industrial-type buildings and large areas of hard standing, and creating a more legible layout with high quality buildings and open space. The design principles and network of green infrastructure would integrate the proposed development into the landscape, retaining all woodland around the application site; trees within the application site (where possible); and providing resources for long-term tree and woodland management. The large areas of chalk / neutral grassland to the south and west of the application site in the wider survey area would be enhanced through an appropriate management regime.	Medium	Major-moderate Beneficial	Yes	LVIA Report / Section 7.0
Operation	Knockholt and Halstead Wooded Downs	During operation of the proposed development the only landscape area likely to experience a large scale of impact is the application site itself, which would change from a defence facility to an area of employment and residential development, with associated road infrastructure and open space. The surrounding landscape would not be affected by the proposed development due to lack of intervisibility, and there would be no discernible change to any of the key characteristics of Knockholt and Halstead Wooded Downs LCA. The proposed development has the potential to enhance the overall character of the application site by removing many of the existing industrial type buildings and large areas of hard standing, and create a more legible site layout with high quality buildings and open space. The proposed development would be well integrated into the landscape, whereby all woodland around the application site would be retained and providing resources for long-term woodland management. The large areas of chalk grassland to the south and neutral grassland to west of the application site would also be retained and enhanced through an appropriate management regime.	Medium	Moderate Beneficial	Yes	LVIA Report / Section 7.0

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Chevening Scarp LCA	The only receptor likely to experience a large scale of impact is the application site itself, which would change from a defence research facility to an area of employment and residential development, with associated road infrastructure and open space. No built development would occur in the Chevening Scarp LCA itself. The design principles seek to integrate the proposed development into the landscape, retaining the large area of calcareous grassland to the south of the application site beyond the perimeter security fence – on the scarp slope – which is of high ecological value. Its long-term integrity would be secured through the adoption of an appropriate management regime.	Negligible	Negligible Beneficial	Yes	LVIA Report / Section 7.0
Operation	Westerham to Sundridge Parks and Farmlands	No built development would occur within the Westerham to Sundridge Parks and Farmlands LCA itself and there would be no change to any of the key characteristics of this LCA. Any change to outward views from the Westerham to Sundridge Parks and Farmlands LCA would be barely perceptible.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0

### Visual Receptors

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
<i>Settlement</i>						
Construction	Crow Drive, Armstrong Close and Fort Drive	From along Crow Drive, construction activity will be visible within the north-eastern part of the application site. This includes close range, open views of construction activity within the helipad site. From the cluster of houses along Armstrong Close and Fort Road, views of construction activity will be filtered by intervening vegetation however, taller elements of construction would be seen above the perimeter vegetation. Please refer to LVIA Viewpoint 2.	Medium	Moderate Adverse	Yes	LVIA Report / Section 7.0
Construction	Halstead	The perimeter woodland screens views into the application site itself. Only taller elements of construction would potentially be seen above the perimeter vegetation. The removal of taller built structures such as the N2 Building and Boiler House is considered beneficial to the composition of view. Please refer to LVIA Viewpoints 7 and 8.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Knockholt and Knockholt Pound	Intervening vegetation screen views of the application site and construction activity is unlikely to be visible	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Otford (inc. Twitton and Shoreham)	Although open views towards the application site are possible from the edge of Otford, most of the construction activity would be screened by the perimeter vegetation. Some temporary crane movements may be visible above the perimeter vegetation but would be small features on the wider escarpment and no prominent in view. Please refer to Viewpoint 10.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Sevenoaks (inc. Dunton Green and Riverhead)	From the edge of Riverhead, the majority of construction activity would be screened by perimeter vegetation. Although taller elements may be visible above the tree line, they would not be overly prominent features within views. From within the town of Sevenoaks, the majority of construction activity will also be screened by perimeter vegetation. Any taller elements that are visible above the tree line would not be overly prominent features within views, and at this distance would be barely discernible. Please refer to LVIA Viewpoints 9, 14 and 15.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Principal Routes</i>						
Construction	M25	The majority of construction activity would be screened by the perimeter woodland and would not be a prominent feature in view.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	A224 Pole Hill	Most of the construction activity would be screened by the perimeter vegetation. Some taller elements may be visible above the perimeter vegetation but would not be a prominent feature in the view. Junction improvements to this road at the junction with Crow Drive would occur, but it is considered that this work would not significantly alter the visual amenity of the road as a busy, and urban arterial route to the M25 and Orpington. Please refer to LVIA Viewpoints 1 and 6.	Low	Minor Adverse	Yes	LVIA Report / Section 7.0
Construction	A25	The majority of construction activity would be screened by the perimeter woodland and would not be a prominent feature in view.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Local Roads</i>						
Construction	Star Hill	The majority of the construction would be screened from Star Hill Road by the perimeter vegetation along the application site boundary. However, it is possible that some construction activity may be glimpsed through and above the treeline and at the Star Hill Road entrance. Works to the Star Hill Road entrance itself would be more apparent but would be limited to a short stretch of the road near to this entrance, including the creation of speed management measures, minimal removal of some vegetation for visibility splays and anti-skid surface treatment. Please refer to LVIA Viewpoints 3 and 4.	Low	Minor Adverse	Yes	LVIA Report / Section 7.0

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Otford Lane	The majority of construction activity would be screened by the perimeter woodland and would not be a prominent feature in view. Please refer to LVIA Viewpoint 7.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Recreational Routes</i>						
Construction	North Downs Way	Open views toward the application site are available where the North Downs Way passes to the south of the application site, along the B2211 Sundridge, A224 Morants Court Road, and coinciding with the Darent Valley Path. Most of the construction activity would be screened by the perimeter vegetation. Some taller elements may be visible above the perimeter vegetation but would not be a prominent feature in the view. Further east, where the North Downs Way extends from Otford and along higher ground around Otford Mount, the majority of construction activity would be hidden from view by the perimeter vegetation and any visible elements would not be discernible. Please refer to LVIA Viewpoints 6 and 13.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Darent Valley Path	The majority of construction activity would be screened by the perimeter woodland and would not be a prominent feature in view. Please refer to LVIA Viewpoint 9.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Construction	Other Public Rights of Way	PRoW SR97 and SR172 largely follow the perimeter of the application site and would experience most change during the construction phase. Being set predominantly beyond the perimeter vegetation no construction of built form would take place in the immediate vicinity of these footpaths. However, the removal of perimeter security fence from sections of PRoW SR97 / SR172 and the construction of a cycle path along PRoW SR172 would cause some limited intrusion. From PRoW SR722 in the wider survey area to the south there may also be some change to views where it passes close to the application site boundary and there are modifications to the perimeter security fence. From PRoW on higher ground to the east of the application site, such as SR60, are open views towards the application site and the scarp is clearly visible and in contrast to the intervening valley landscape. However, the perimeter vegetation would largely screen views of construction activity and any taller elements that are visible above the perimeter vegetation would not be a prominent feature in view. Please refer to Viewpoints 2, 3, 4, 5 and 12.	Medium	Moderate Adverse		LVIA Report / Section 7.0
<i>Settlement</i>						
Operation	Crow Drive, Armstrong Close and Fort Drive	From along Crow Drive, views of new built form would be visible but this would not be substantially different from the existing views of buildings and structures. In addition the removal of security fence in this location is considered to be beneficial. From along Armstrong Close and Fort Road, views of new built form would be largely filtered by the perimeter woodland. Where the new built form is visible it will not appear out of context with existing residential land uses. The removal of taller built structures such as the N2 Building and Boiler House is considered beneficial. Please refer to LVIA Viewpoint 2.	Low	Minor Beneficial	Yes	LVIA Report / Section 7.0
Operation	Halstead	The new built form of the proposed development would be generally screened by the perimeter woodland. The removal of taller built structures such as the N2 Building and Boiler House will be beneficial. Please refer to LVIA Viewpoints 7 and 8.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	Knockholt and Knockholt Pound	Intervening vegetation screens views of the application site and the new built form is unlikely to be visible.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	Otford (inc. Twitton and Shoreham)	The majority of new built form would be screened by the perimeter woodland. Any visible structures that just break above the tree line would be indiscernible and there would be no perceptible change to baseline view. Please refer to Viewpoint 10.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	Sevenoaks (inc. Dunton Green and Riverhead)	The majority of new built form would be screened by the perimeter woodland. Any visible structures that just break above the tree line would be indiscernible and there would be no perceptible change to baseline view. The removal of building X54 will be beneficial. Please refer to LVIA Viewpoints 9, 14 and 15.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Principal Routes</i>						
Operation	M25	The new built form would be generally screened from view, set back from the scarp slope and sitting below the tree line.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	A224 Polhill	The new built form would be generally screened from view, set back from the scarp slope and sitting below the tree line. The removal of building X54 will be beneficial. The completed junction improvements would be entirely in keeping with the character and appearance of this main route. Please refer to LVIA Viewpoints 1 and 6.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	A25	The new built form would be screened from view, set back from the scarp slope and would sit below the tree line.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Local Roads</i>						

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Star Hill	To the south of the application site, the majority of new built form would be screened by the perimeter woodland and the new built form is unlikely to be visible. To the west of the application site, the proposed development would see the removal of Star Hill Road Gatehouse, perimeter security fencing and associated flood lighting, and would open up views into the application site and along Star Hill. Overall this is considered to be beneficial to the visual amenity and character of the road. From the Star Hill entrance, views of new built form would be limited, set within the application site and beyond areas of retained / enhanced open space. Please refer to LVIA Viewpoints 3 and 4.	Low	Minor Beneficial	Yes	LVIA Report / Section 7.0
Operation	Offord Lane	The majority of new built form would be screened by the perimeter woodland. Certain parts of the employment area / village centre may just break above the tree line but would not be a prominent feature in view and would be consistent with the baseline views of existing buildings and structures protruding above the woodland. Please refer to LVIA Viewpoint 7.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
<i>Recreational Routes</i>						
Operation	North Downs Way	The majority of new built form would be screened by the perimeter woodland. Any visible structures that just break above the tree line would be indiscernible and there would be no perceptible change to baseline view. Please refer to LVIA Viewpoints 6 and 13.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	Darent Valley Path	The majority of new built form would be screened by the perimeter woodland. Any visible structures that just break above the tree line would be indiscernible and there would be no perceptible change to baseline view. Please refer to LVIA Viewpoint 9.	Negligible	Negligible Neutral	Yes	LVIA Report / Section 7.0
Operation	Other Public Rights of Way	The removal of the perimeter security fencing (barring that retained for the QinetiQ area) would result in a beneficial improvement to the recreation and visual amenity of footpaths SR97, SR172 and SR722, removing the imposing fence structure that often aligns the path and allowing a more natural visual recreational experience from them. New built form may be visible through the perimeter woodland at this short distance but would not be a prominent feature in view. The routes would all connect into newly created public links set within the green infrastructure within the application site. From Footpath SR60 the perimeter vegetation would largely screen views and new built form proposed development will not generally be visible. Please refer to Viewpoints 2, 3, 4, 5 and 12.	Medium	Moderate Beneficial	Yes	LVIA Report / Section 7.0

### 7.7 MITIGATION & ENHANCEMENT MEASURES

Additional mitigation measures that should be adopted, beyond those inherent within the design, are set out below. The implementation of the CEMP and LEMP are important to ensure the long term protection and management of existing and proposed vegetation, and are applicable to all landscape and visual receptors assessed. However, it is considered that the implementation of these mitigation measures would not alter the overall assessment findings.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Potential changes to the fabric, character and views of the application site resulting from construction activity.	Implementation of a Construction and Environmental Management Plan (CEMP). A CEMP will play an important role in ensuring considerate construction activity and that the identified woodland, trees and other landscape / habitat features are protected during the construction phase	Planning condition	Various	Various	LVIA Report / Section 7.0
Construction and Operation	Potential changes to the fabric, character and views of the application site resulting from inappropriate management of landscape / habitat features.	Implementation of a Landscape and Ecological Management Plan (LEMP). A LEMP will ensure the identified landscape / habitat features are appropriately managed, in particular in ensuring the long-term health and robustness of perimeter woodland which provides an important screen. The LEMP should build on the Framework Ecological Mitigation Strategy (prepared by Middlemarch) which sets out the approach to retention, creation and management of ecology features.	Planning condition	Various	Various	LVIA Report / Section 7.0

### 7.8 ASSESSMENT POST-MITIGATION

For the purposes of assessment, construction activity is considered to be 'medium-term' in duration (lasting for approximately 11 years), with the operational development being 'long term' in duration i.e. lasting over 12 years (this is referred to as 'permanent' effects within the LVIA Report).

All construction activities are considered to be temporary in nature and reversible. In comparison, the operational development is considered to be permanent in nature and irreversible. In theory the operational landscape and visual effects are capable of being reversed, but it is assumed that there is no expectation / intention for this to occur.

As set out above in relation to mitigation and enhancement measures, while the CEMP and LEMP will be beneficial in securing the long term protection and management of existing and proposed vegetation, the implementation of these mitigation measures would not alter the overall assessment findings. The assessment post-mitigation is therefore as recorded pre-mitigation and there are no additional residual effects.

# LANDSCAPE & VISUAL IMPACT ASSESSMENT

## Landscape Receptors

PHASE	RECEPTOR	RESIDUAL IMPACT	SIGNIFICANCE	ADV/BEN	RESIDUAL EFFECT			
					ST/MT/LT	D/IND	P/T	R/IRR
Construction	LCA1: Darent Valley	The effect would remain the same as those reported in Section 7.6	Minor	Adverse	Medium-term	Direct	Temporary	Reversible
Construction	3a: Knockholt and Halstead Wooded Downs	The effect would remain the same as those reported in Section 7.6	Minor	Adverse	Medium-term	Direct	Temporary	Reversible
Construction	5a: Chevening Scarp LCA	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	Westerham to Sundridge Parks and Farmlands	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Operation	LCA1: Darent Valley	The effect would remain the same as those reported in Section 7.6	Major-moderate	Beneficial	Long-term	Direct	Permanent	Irreversible
Operation	3a: Knockholt and Halstead Wooded Downs	The effect would remain the same as those reported in Section 7.6	Moderate	Beneficial	Long-term	Direct	Permanent	Irreversible
Operation	5a: Chevening Scarp LCA	The effect would remain the same as those reported in Section 7.6	Negligible	Beneficial	Long-term	Direct	Permanent	Irreversible
Operation	Westerham to Sundridge Parks and Farmlands	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible

Key: ADV/BEN = Adverse/Beneficial; ST/MT/LT = Short-term/Medium-term/Long-term; D/IND = Direct/Indirect; P/T = Permanent/Temporary; R/IRR = Reversible/Irreversible

## Visual Receptors

PHASE	RECEPTOR	RESIDUAL IMPACT	SIGNIFICANCE	ADV/BEN	RESIDUAL EFFECT			
					ST/MT/LT	D/IND	P/T	R/IRR
<i>Settlement</i>								
Construction	Crow Drive, Armstrong Close and Fort Road	The effect would remain the same as those reported in Section 7.6	Moderate	Adverse	Medium-term	Direct	Temporary	Reversible
Construction	Halstead	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	Knockholt and Knockholt Pound	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	Offord (inc. Twitton and Shoreham)	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	Sevenoaks (inc. Dunton Green and Riverhead)	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
<i>Principal Routes</i>								
Construction	M25	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	A224 Pole Hill	The effect would remain the same as those reported in Section 7.6	Minor	Adverse	Medium-term	Direct	Temporary	Reversible
Construction	A25	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
<i>Local Roads</i>								
Construction	Star Hill	The effect would remain the same as those reported in Section 7.6	Minor	Adverse	Medium-term	Direct	Temporary	Reversible
Construction	Offord Lane	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
<i>Recreational Routes</i>								
Construction	North Downs Way	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	Darent Valley Path	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Medium-term	Direct	Temporary	Reversible
Construction	PRoW around the Application Site	The effect would remain the same as those reported in Section 7.6	Moderate	Adverse	Medium-term	Direct	Temporary	Reversible
<i>Settlement</i>								
Operation	Crow Drive, Armstrong Close and Fort Road	The effect would remain the same as those reported in Section 7.6	Minor	Beneficial	Long-term	Direct	Permanent	Irreversible
Operation	Halstead	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	Knockholt and Knockholt Pound	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible

## LANDSCAPE & VISUAL IMPACT ASSESSMENT

PHASE	RECEPTOR	RESIDUAL IMPACT	SIGNIFICANCE	ADV/BEN	RESIDUAL EFFECT			
					ST/MT/LT	D/IND	P/T	R/IRR
Operation	Otford (inc. Twitton and Shoreham)	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	Sevenoaks (inc. Dunton Green and Riverhead)	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
<i>Principal Routes</i>								
Operation	M25	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	A224 Pole Hill	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	A25	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
<i>Local Roads</i>								
Operation	Star Hill	The effect would remain the same as those reported in Section 7.6	Minor	Beneficial	Long-term	Direct	Permanent	Irreversible
Operation	Otford Lane	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
<i>Recreational Routes</i>								
Operation	North Downs Way	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	Darent Valley Path	The effect would remain the same as those reported in Section 7.6	Negligible	Neutral	Long-term	Direct	Permanent	Irreversible
Operation	Other Public Rights of Way	The effect would remain the same as those reported in Section 7.6	Moderate	Beneficial	Long-term	Direct	Permanent	Irreversible

Key: ADV/BEN = Adverse/Beneficial; ST/MT/LT = Short-term/Medium-term/Long-term; D/IND = Direct/Indirect; P/T = Permanent/Temporary; R/IRR = Reversible/Irreversible

### 7.9 LANDSCAPE AND VISUAL INTER-CUMULATIVE SCHEME IMPACTS

No cumulative schemes have been considered in the EIA.

### 7.10 WORKS CITED

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